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# COAL AGE

With Which is Consolidated "The Colliery Engineer" and "Mines and Minerals"

## DEVOTED TO THE OPERATING, TECHNICAL AND BUSINESS PROBLEMS OF THE COAL-MINING INDUSTRY

ISSUED WEEKLY

VOLUME XXVIII

July 1 to December 31, 1925

McGRAW-HILL PUBLISHING CO., INC.
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# COAL AGE

*With Which is Consolidated*
*The "Colliery Engineer" and "Mines and Minerals"*

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July 1 to December 31, 1925

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# COAL AGE

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Problems of the Coal-Mining Industry

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## Will Anthracite Men Strike?

A STRIKE in the anthracite fields would be distinctly unfortunate this fall as many labor leaders and anthracite operators fully realize. A strike of any length would immediately start up many a bituminous mine now idle. Soft coal would plunge into anthracite markets. Smokeless coal, especially, would find new opportunities to nick "natural" hard coal territory. Anthracite operators already are harassed sufficiently by loss of markets, without suffering this new impending loss, even temporarily.

Anthracite miners already receive higher average wages than are paid to men in most other industrial groups. Their proposed demand for more pay certainly should not be a fighting point. It is no excuse for a strike and is merely trading ground on which to enter the joint negotiations. Neither does a demand for the check-off justify a strike. Mr. Lewis' possible demand for a long-term agreement comes nearer being a *casus belli.* But, as a matter of fact, none of these will rouse any public sympathy for the miners. They can work up outside support only by a resistance against an actual wage cut, and even that is doubtful in view of the position of anthracite wages, illustrated forcibly in an article in this issue.

No matter what the cause, a strike this fall is bound to damage the entire coal industry involving the public attitude toward miners and operators alike just at a time when the industry as a whole is making actual progress toward sanity and health. If the miners insist upon quitting work in defence of any principle at all, Lewis will be charged with shutting down anthracite to give his starving bituminous men a chance to get in a little work so as to save his union from collapse.

To the average American, a short strike will look like collusion between miners and operators and a long strike like base incompetence calling for congressional action next winter such as nobody in the coal industry wants. Therefore, the joint anthracite negotiations starting soon after this week's tri-district miners' conventions in Scranton, should be a "battle for peace." We hope it need not be "peace at any price."

## Illinois Should Choose Technical Man

AN OUTSTANDING man recently has passed away in Illinois, Martin Bolt, the head of the Department of Mines and Minerals. The state has cause to regret his loss and will have to look carefully for his successor, and when it is being done we would counsel the authorities respectfully that they look for some good man with technical education. Mining men have succeeded without college training, but there is no reason to suppose that they would not have been far more successful with it.

We need character, ability and education, these three. Why be contented with only two of them? The first two are characteristics as to the possession of which there may be some question. The third is a matter of fact that readily can be determined. There is no question but what a man of trained mind at the head of the department will do much to make the work of the bureau effective. Hitherto it has seemed that in most states men with degrees were not wanted, no matter how excellent their other characteristics. Surely it is time for a change of attitude.

## Market Prices

WHAT BRIGHT MIND conceived the idea that market prices should be secret and not quoted? What Dark-Age intellect wanted to deprive the buyer of a knowledge of the current price? Who desired that the consumer should hesitate to buy because he didn't know if a fair price was offered to him?

The basis of good business is recorded prices. The public should favor market quotations as a protection to the small inexperienced buyer, as a means of preventing dishonesty in dealings between agents and as a source of preventing waste in selling expenditure. Open and above-board prices are a refreshing flood-light in industry, but all the people who favored smelling committees and dark-cellar practices prayed for secret prices, condemned the stock and commodity exchanges and the quotations of trade associations and delighted in favoring gum-shoe methods of operation. Waste in merchandising will be largely eliminated when both buyer and seller know the market rate of commodities. Not for any particular industry's advantage are recorded prices to be advocated but for the benefit of all industry and for the advantage of the public.

## Mail Order Coal

RETAILERS in the Midwest and Northwest are reported tremulous over the entrance of a mail order house into the coal business. Of course there are retailers who will feel this competition, at least for a time, but it seems to us highly probable that there is more grief in store for others than for legitimate coal dealers.

The country is full of men who tried to sell coal on a club plan—as somebody in each community must do for mail order houses—and who have rued the day they made their start. In Springfield, Mass, for instance, it was tried under most auspicious conditions. But, strangely enough, trucks were hard to get when the coal cars arrived. Demurrage sometimes rolled up or coal had to be dumped on the ground. The "high grade lump" had a habit of degrading so that a lot of people who paid for lump got slack. Fifty-ton cars often started full and arrived with 45 tons. Somebody had to collect in advance and have the freight charges in hand at the station. "Members" occasionally left the "financial officer" holding the sack. Scales were hard to find. There was trouble all along the line.

Most of these worries are not faced by the mail order firm. All that concern purposes is to furnish the coal after the "financial officers" have sent in the money. Its price quotations are attractive and it is reasonably sure of some business at a small profit. It may get into arguments over weights and quality, but most of the troubles are in store for those unfortunates who undertake to handle the mail order house's carload lots locally. These individuals will disturb the peace of retail dealers for awhile but probably not for long. It is to be fervently hoped they disturb retailers who believe in excessive margins of profit. They may thus perform a service for their communities and for the coal industry generally. But in general, tears, argument and grief immeasurable will be their lot.

## Machines Always Defeat Prejudice

WHENEVER mechanical devices have been developed to take the place of human muscles in the performance of useful work in the service of mankind, the people possessing the muscles displaced have raised strenuous opposition. This has been true of the spinners, the weavers, the iron and steel workers, the miners, and even the slate pickers in the anthracite breakers. But how men do change!

When it was sought to introduce the first mechanical slate picker a few decades ago its inventor narrowly escaped personal injury or possibly even a lynching at the hands of an irate mob that strongly resented his attempt "to rob the little boys of their living." Yet, today mechanical picking is all but universal and the breaker boy of twenty or thirty years ago, as a race, is almost as extinct as the bison or the great auk—he is now in school where he belongs, and everybody is happier because of that fact.

While the opposition of the laboring man to mechanical devices that supplant the work of his hands is poignant at the outset it soon turns to favor when he reaps his share of the benefits that accrue from the change. Would the spinners of today willingly revert to the hand-operated spindle? Would modern weavers voluntarily go back to the old foot looms? Would the anthracite workers like to see the old picking chutes revived?

Economic laws are as inexorable as are those of nature. Both may be dodged or even successfully opposed for a time but in the end they always triumph over the designs of men—and to the benefit of all concerned. Each advance of mechanical devices in industry, while it may temporarily throw men out of employment, soon creates a bigger and better demand for their services either in the same industrial field or elsewhere.

Instances of this kind were particularly striking during the past hundred years. Railroads were opposed by the farmers because they believed that they would destroy the market for horses to be used in "teaming" goods and grain. Inevitably the iron horse won over its four-footed rival, yet the market for horses was never more active than today. The farm hands of the past opposed the reaper and the threshing machine because they believed these devices would render their services unnecessary. The reaper has long since totally supplanted the cradle even as this device supplanted the sickle; the threshing machine long ago sent the flail to the discard, yet farm owners were never more sorely in need of help than today. And the farm hand can now sell his services for $50 to $70 per month with board and washing to boot, whereas in the old days he was fortunate if he could get $8 or $10 for a similar period of time.

It is by no means strange that the miners of today oppose the introduction of shoveling machines, power drills and other mechanical labor-saving devices within the mines. A few years ago they similarly opposed the introduction of mining machines and explosives. But where, today, can a miner be found who would gladly return to the practice of pick undercutting and bringing the coal down by means of sledge and wedges? Not much! The present-day miner in most instances, if deprived of the services of a mining machine, would unhesitatingly shoot the coal off the solid, state laws and company rules to the contrary notwithstanding. There is plenty of evidence to back this statement.

Man is a lazy sort of a creature! Having once learned to load coal mechanically he rebels at the idea of going back to the old hand shovel. The fact that certain coal operators who encountered severe opposition from their men when they sought to introduce loading machines are now encountering almost equal difficulty from the same source when they suggest that these machines be removed and that those who ran them go back to hand loading, is a decidedly encouraging symptom.

Beyond shadow of doubt mechanical loading has come to stay. It will be difficult for any man or any group of men to fly for long in the face of economic necessity and prevent its adoption. And when mechanical loading has once become an accepted fact, woe be unto him who even suggests a reversion to hand methods!

## Going South Again

CIVILIZATION had its origin in tropic climes. In the tropics the growth of vegetation was rapid, and man could live without toil. The ground gave its fruits without cultivation. But the progress of agriculture opened the way toward Northern exploitation and the Northerner found he could warm himself in the winter by wood and later by coal and not being enervated by heat he was a more active individual than the inhabitant of the tropics and soon gained political mastery.

If the houses of the South could be made cool and endurable, your southern farmer would be the better producer for he would have all the rapidity of growth that has made the South rich and all the energy that goes with a relief from the heat. The cooling of houses will redistribute mankind. A siesta in a well-tempered atmosphere when the sun is hottest and work in the cool of morning and evening lightened by machinery will make an ideal condition of living. The growing season will last twelve months. Not only will there be less seasonal industry but there will be more equal distribution of the world's peoples on the face of the earth.

Artificial cooling will make the South as suitable for living as artificial heating has made the North, and southern markets for coal will be as active as northern. The promotion of air cooling by refrigeration will solve many of the problems of coal—seasonal inequalities in industrial demand as well as like inequalities in the domestic market. The next move of the people of the United States, which has already started for other reasons, is and will be, down South. Great movements in population have occurred before in history and for reasons not so readily apparent.

# Old Ben Coal Corporation Effects Large Savings With Modern Electric Equipment

## Replacement of Efficient Steam Hoists by Electrified Units Justifies Itself—Benefits of Diversity Factors Are Realized by Transmission Line Linking Up Mines

By A. W. Spaht* and G. E. Marble†

THE COST OF POWER at coal mines is an important item of expense. In order to reduce it and thus lower the cost of producing coal the Old Ben Coal Corporation with twelve mines in southern Illinois has changed its equipment at eleven of the twelve from steam to electric operation. Complete new equipment was used. The change is striking because it is one of the largest electrifications ever made in the coal industry.

It is not possible to measure the exact dollars-and-cents economy wrought throughout the company by the electrification because of irregularity of operation at so many of the mines during the past winter but the indications are the saving at one mine will be in the neighborhood of $50,000 and no doubt economies at the others will be comparable. The company is convinced, however, that idle-day power costs under electric operation are much less than those borne in the days of steam. The principal equipment installed was hoists.

Of the twelve mines operated by the Old Ben Coal Corporation in the Franklin County field, mines Nos. 8, 9 and 15 were sunk by the Old Ben Co. The other mines were purchased. With the exception of one, all were originally steam operated. At the No. 11 mine an electric hoist of 1,150 hp. was installed in 1912 when the mine was sunk. Power for this mine was supplied from a 5,000-kva. plant located at the mine and owned and operated by the coal company. The only steam for mining purposes was used in operating a material hoist at the air shaft and for heating.

The surplus power generated by this mine plant was supplied to its other mines, as emergency power, and to a public utility company. All of the power taken was carefully metered and a permanent record of the requirements was kept from the beginning. The power required for the various operations, such as hoisting, ventilating, cutting and hauling, and for the tipples was also measured on separate meters.

A graphic wattmeter gave a continuous record of the total load, hence this company had accurate data, over a period of several years, covering the exact power requirements of an electrically operated mine in all stages of development.

The twelve mines had been connected electrically by means of a 33,000-volt transmission line originally intended to supply power to the various mines in case of trouble with the local steam plants. Motor-generator sets and a spare motor drive for the fans had been installed at each mine. The substations at mines where no alternating-current energy was generated consisted of two or three 200-kva. transformers, making banks of 400 or 600 kva. capacity.

At the No. 9 mine there was also a 2,500-kva. turbine-generator which was operated in parallel with the No. 11 plant. Thus the alternating-current power system consisted of 7,500 kva. in turbine driven generator capacity, with 43 miles of 33,000-volt transmission lines and a number of 33,000-to-2,300-volt step-down substations. Metering equipment at all points made it possible to determine the line and transformer losses in the system. The location of the mines and the transmission system is shown in Fig. 1.

Most of the twelve power plants were better equipped than the average mine plant. The plant at mine No. 11 had water-tube boilers, stokers, superheaters, soot blowers, feed-water treating and filtering plant, coal and ash conveyors and a 225-ft. stack. No. 9 plant had water-tube boilers, traveling grate stokers burning No. 5 coal, forced draft, and coal and ash conveyors. Two of the ten remaining plants had water-tube boilers and stokers and water treating plants; two had low pressure turbines utilizing the exhaust steam from the hoisting and fan engines; nine had brick or concrete

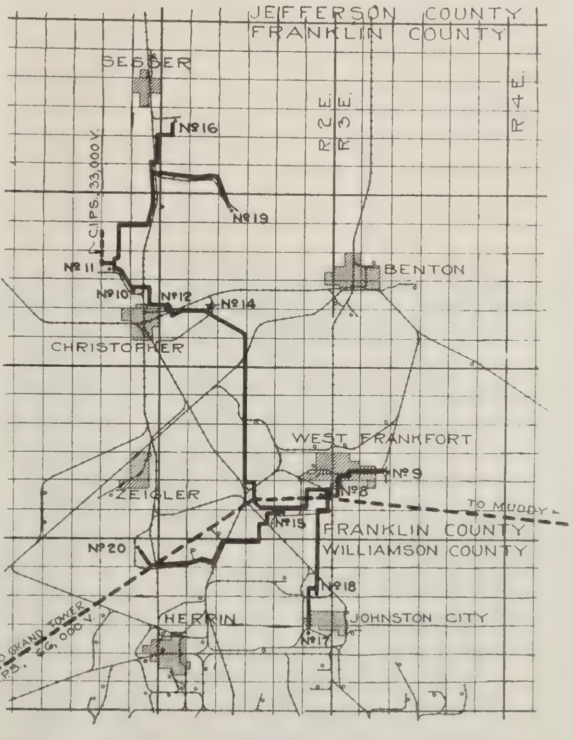

Fig. 1—Map of Old Ben Properties in Southern Illinois

The dots represent the 66,000-volt line from a power company. The solid black traces the course of the coal company's 33,000-volt transmission lines from the main substation to the mines.

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*Electrical engineer, Old Ben Coal Corporation, Christopher, Ill.
†General Electric Co., Chicago, Ill.

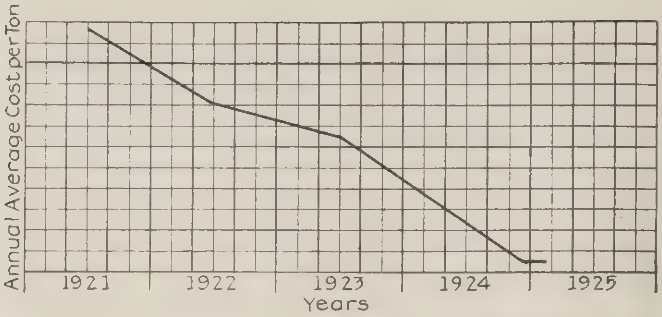


**Fig. 2—Large Savings Are Effected by Electrification**

The way the energy cost per ton has been lowered from year to year by changing steam-operated equipment to electric drive is apparent by this curve. Now that the electrification has been practically completed, note that the cost curve has flattened out.

stacks of ample capacity. All of the fire-tube boilers were hand fired.

Six of the plants had ash conveyors, and all had coal conveyors taking coal from the tipple direct to the boiler rooms. The twelve plants had a total of 18,430 rated b.hp., and 14,300-kw. rated generator capacity. All had high-grade, first-motion hoisting engines and fan engines and all had ample water supply from surface reservoirs.

An accurate accounting system gave thoroughly dependable power cost records at every plant. The cost of the alternating current generated in the turbine-driven units was known. The transmission and distribution losses were known, as was the cost of operating each local steam plant. It was possible to make close estimates of the kilowatt-hour requirements of each mine and the maximum demand if all were operated electrically. The rate at which power could be purchased was known. It was simply a matter of deciding if the saving in power costs would justify the change from steam to electric operation.

Strangely enough, this was the easiest part of the problem. The records plainly showed that the electrically operated mine had a larger margin of economy over the best equipped steam mine under all conditions of operation, from steady working conditions to long periods of idleness. The figures further showed that the saving in power cost would pay for the entire change in less than two years. Hence it was decided to discontinue the use of steam in all cases except at one mine, No. 10, which is so nearly worked out that it will be finished with the steam hoist.

The question of purchased power was then investigated. First to be considered was the dependability of the power supply, second, the necessary capacity, and third, the cost. The size and arrangement of the Central Illinois Public Service Co.'s power plants and steel tower transmission lines left no room for doubt as to the first two points. In the case of the third item the cost records showed that purchased power would cost practically the same as when generated in the company's own plants. Hence it was decided that, inasmuch as the main object of the Old Ben Coal Corporation was to mine and distribute coal, the generation of power would be left to the power company, and therefore, purchased power was decided upon.

All of the power is taken at 33,000 volts and measured on one meter. This gives the coal company the benefit of the diversity factor, and consequently a comparatively high load factor.

The power factor of the system is maintained well above 0.9 by means of synchronous motor-generator sets with motors rated at 0.8 power factor leading. There are twenty-six motor-generator sets in all; two of these are of 200-kw., nineteen are of 300-kw., and five are of 500-kw. capacity.

It was necessary to rearrange the transformer substations to suit the mine loads. The 200-kva. transformers were grouped in banks of three and the banks operated in parallel.

In the selection of hoists for the other mines each duty cycle was treated as a separate case. It was found, however, that in some instances the equipment required did not vary greatly from that necessary at another mine. In such cases duplicate equipment of the largest size required was purchased. Four of the mines had steam hoists at the material handling shafts. These were changed to geared, alternating-current, motor-driven hoists. Fifteen electric hoists were required. All changes from steam to electric hoisting were made without interfering with the regular operation of the mines. Table No. 1 gives interesting data pertaining to the main shaft hoists.

It will be observed by referring to this table, that the

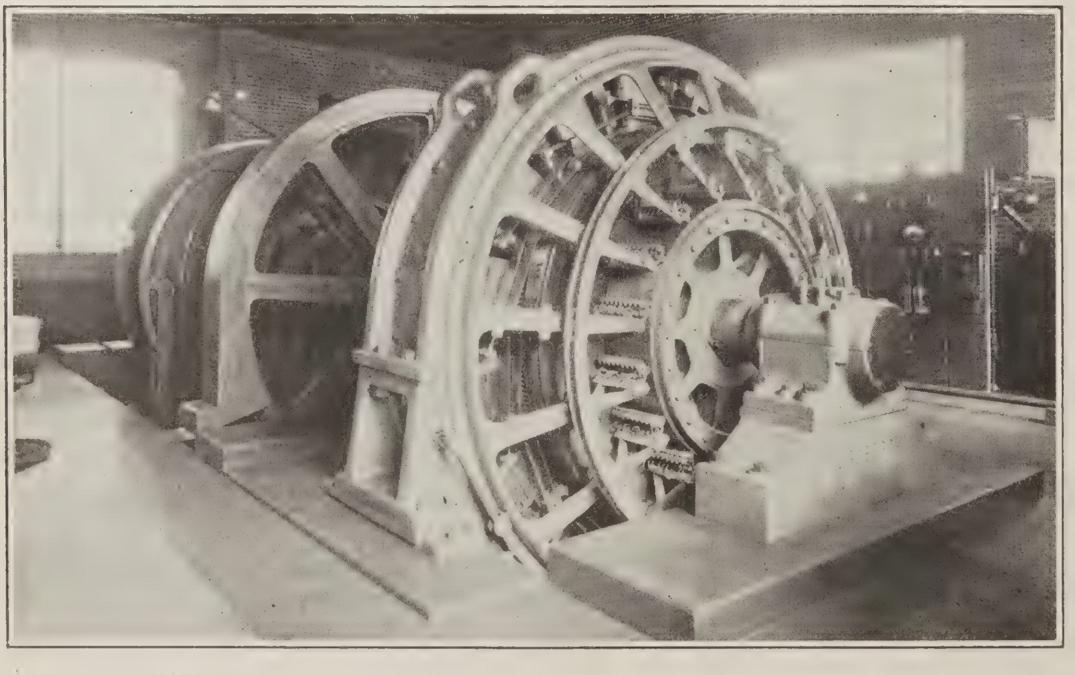


FIG. 3

**There's Power Here**

Accurate speed control and high operating efficiency is obtained by this 2,200-hp. direct-current hoist motor—one of the largest single-motor hoists in the coal mining industry. Alternating-current is converted to direct-current by means of a large flywheel type motor-generator set located in the same room as this hoisting equipment.

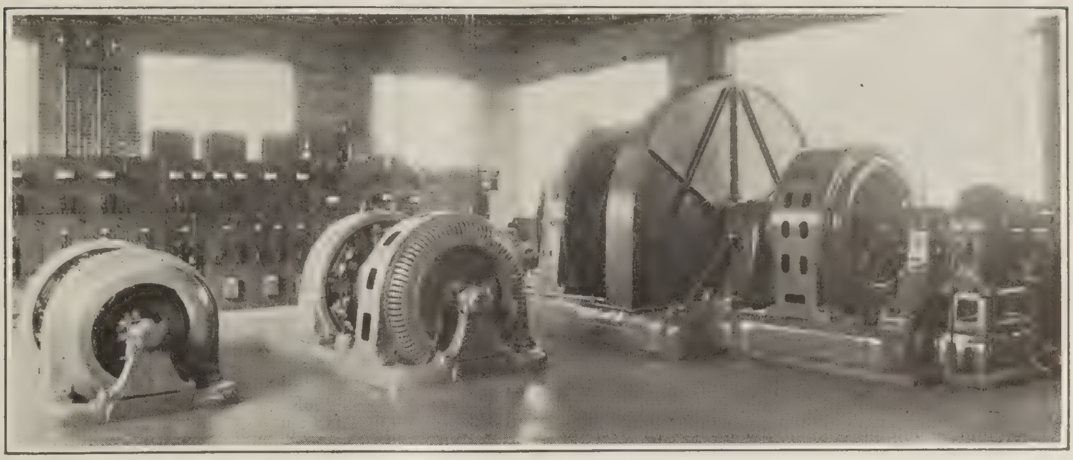


FIG. 4

**A Giant Unit**

The 500-kw. and 300-kw. synchronous motor-generator sets used to supply direct current for mine service, look small alongside this 1,500-kw. flywheel set in the hoist house at mine No. 8 at West Frankfort, Ill.

hoists at mines Nos. 8, 9 and 15 are duplicates. A brief description of one of these outfits should be of interest, particularly because of the size of the equipment and the heavy duty cycle. The hoist motor is rated 2,200 hp. at 110 r.p.m. and is directly connected to the drums. A motor-generator set furnishes the power for the hoist. It consists of an induction motor rated 1,000 hp., 2,200 volts, 514 r.p.m.; a direct-current generator rated 1,500 kw., 600 volts; an exciter rated 37 kw., at 250 volts, and a 45,000-lb. steel plate flywheel. By means of a slip regulator and torque motor the heavy peak loads are automatically taken by the flywheel and the input to the induction motor of the motor-generator set does not vary more than 7 per cent above or below the average.

The drums of the hoist are of the cylindro-conical type with a small diameter of 7 ft. and a large diameter of 11 ft. The small diameters are in the middle with the brake ring between them. Take-up drums holding 100 ft. of rope are provided inside the large drums. The brake, which is oil operated, is set by gravity and released by oil pressure furnished by an accumulator having geared pumps.

The hoist is equipped with a geared auxiliary alternating-current motor drive, for use on night work or idle days.

The duty cycle on which the hoist operates is as follows:

| | |
|---|---|
| Average weight of coal per trip, lb. | 8,400 |
| Total lift, ft. | 520 |
| Number of trips per hour | 200 |
| Time of rest period for caging, sec. | 3.5 |
| Time of acceleration, sec. | 5 |
| Time of full speed run, sec. | 4.5 |
| Time of retardation and dumping, sec. | 5 |
| Maximum rope speed, ft. per minute | 3,800 |
| Total weight of moving parts to be accelerated, tons | 75 |

It was realized that such severe requirements could not be met by ordinary hand control and that automatic control must be used. If the equipment had failed to meet the cycle by one second per trip, it would have meant a loss of 350 tons per day. Hence it was imperative that the duty cycle be met, and the present equipment does it nicely.

Automatic acceleration is accomplished by means of a system of current-limiting and counter-electromotive force relays in connection with the contactors governing the generator field. The operator simply throws the master controller to full running position and the hoist accelerates automatically at the predetermined rate.

Automatic retardation is effected by means of cams geared to the drum shaft working in connection with the master controller. At a certain point in the cage travel, the cams move the master controller to the "off" position and the hoist is automatically stopped. A spring link connection between the cams and the master controller allows the operator sufficient controller capacity for any necessary maneuvring at the end of the trip, such as redumping.

**Table II—Fan Data**

| Mine No. | —Size in Ft.— Diam. | Face | R.p.m. | Volume Cu.Ft. per Minute | Pressure In., Water Gage | —Driving Motor— Kw. Input | Kw.-Hr. per Day |
|---|---|---|---|---|---|---|---|
| 8 | 16 | 6 | 120 | 160,000 | 4.00 | 118 | 2,840 |
| 9 | 16 | 6 | 120 | 165,000 | 3.50 | 106 | 2,541 |
| 10 | 14 | 5 | 170 | 167,000 | 2.50 | 111 | 2,660 |
| 11 | 12 | 6 | 104 | 193,000 | 1.00 | 64 | 1,540 |
| 12 | 13.5 | 7 | 185 | 200,000 | 3.75 | 153 | 3,676 |
| 14 | 16 | 8 | 131 | 241,000 | 3.25 | 180 | 4,309 |
| 15 | 16 | 6 | 44 | 49,600 | 0.40 | 24 | 581 |
| 16 | 10 | 6 | 134 | 134,240 | 2.00 | 47 | 1,132 |
| 17 | 12 | 4.5 | 160 | 85,000 | 2.25 | 45 | 1,071 |
| 18 | 16 | 5 | 106 | 180,000 | 2.00 | 101 | 2,423 |
| 19 | 16 | 5 | 75 | 90,000 | 2.00 | 31 | 754 |
| 20 | 16 | 5.5 | 130 | 120,000 | 1.60 | 39 | 938 |

All braking is dynamic and of the necessary value to bring the hoist to a stop at the proper point regardless of the weight of the load. The mechanical brakes are used only for holding the drums after they are stopped. The kilowatt-hours per ton taken by this equipment, when hoisting in accordance with the duty cycle, is given in Table I.

Because the power taken by the fan is usually a large part of the total requirements of a mine, Table II is included to show what the twelve fans are doing. The

**Table I—Main Hoist Data**

| Mine No. | Ft. Total Lift | Lb. Coal per Trip | Trips per Hour | Type of Hoist | Hp. of Motor on Drums | Size of Drums | Kw.-Hr. per Ton | Manufacturer |
|---|---|---|---|---|---|---|---|---|
| 8 | 500 | 8,400 | 200 | Illgner-Ward-Leonard | 2,200 | 7'x11' | 0.874 | General Electric Co.; Nordberg Mfg. Co. |
| 9 | 520 | 8,400 | 200 | Illgner-Ward-Leonard | 2,200 | 7'x11' | 0.916 | General Electric Co.; Nordberg Mfg. Co. |
| 10 | 574 | 6,500 | 140 | Steam | 28"x42" no motor | 8' cylinder | ..... | Litchfield Foundry & Machine Co. |
| 11 | 667 | 9,000 | 125 | Illgner-Ward-Leonard | 1,150 | 7' cylinder | 1.12 | General Electric Co.; Ottumwa Iron Works |
| 12 | 564 | 6,500 | 150 | Illgner-Ward-Leonard | 1,100 | 6½'x11½' | 0.975 | Allis-Chalmers Mfg. Co. |
| 14 | 519 | 8,500 | 165 | Illgner-Ward-Leonard | 1,100 | 6½'x11½' | 0.845 | Allis-Chalmers Mfg. Co. |
| 15 | 484 | 8,400 | 200 | Illgner-Ward-Leonard | 2,200 | 7'x11' | 0.853 | General Electric Co.; Nordberg Mfg. Co. |
| 16 | 707 | 7,600 | 150 | Illgner-Ward-Leonard | 1,400 | 7'x11' | 1.105 | General Electric Co.; Nordberg Mfg. Co. |
| 17 | 249 | 4,500 | 144 | Geared a. c. Motor | 350 | 6'x10' | 0.520 | General Electric Co.; Nordberg Mfg. Co. |
| 18 | 335 | 10,000 | 180 | Illgner-Ward-Leonard | 850 | 7'x11' | 0.512 | General Electric Co.; Nordberg Mfg. Co. |
| 19 | 636 | 7,000 | 126 | Illgner-Ward-Leonard | 700 | 7'x11' | 0.971 | General Electric Co.; Nordberg Mfg. Co. |
| 20 | 259 | 6,000 | 156 | Geared a. c. Motor | 350 | 7'x11' | 0.525 | General Electric Co.; Norbberg Mfg. Co. |

**Table III—Distribution of Daily Kilowatt-Hours Among Various Mine Operations**

| Mine No. | Underground |  | Fan |  | Hoisting |  | Above Gound |  | Total Kw.-Hr. | Tons Hoisted | Total Kw.-Hr per Ton |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Total | per Ton | Total | per Ton | Total | per Ton | Total | per Ton |  |  |  |
| 8 | 7,610 | 1.42 | 2,870 | 0.534 | 4,600 | 0.856 | 520 | 0.097 | 15,600 | 5,370 | 2.91 |
| 9 | †8,290 | 1.64 | 2,550 | 0.503 | 4,800 | 0.946 | 2,060 | 0.406 | 17,700 | 5,063 | 3.50 |
| 11 | 6,010 | 1.420 | 1,540 | 0.364 | 5,130 | 1.21 | 1,020 | 0.241 | 13,700 | 4,246 | 3.24 |
| 12 | 4,398 | 1.43 | 3,700 | 1.21 | 3,100 | 1.01 | 490 | 0.160 | 11,688 | 3,074 | 3.80 |
| 14 | 5,400 | 1.31 | 4,290 | 1.04 | 3,850 | 0.932 | 860 | 0.208 | 14,400 | 4,108 | 3.49 |
| 18 | *8,460 | 1.507 | 2,400 | 0.427 | 3,020 | 0.537 | * | * | 13,820 | 5,621 | 2.46 |
| 20 | 3,010 | 1.329 | 930 | 0.410 | 0,270 | 0.560 | 370 | 0.163 | 5.580 | 2,266 | 2.46 |

* D. c. motors in tipple are included in underground power. †This figure includes power taken by rock dust mill.

figures given are not the results of short tests but are the monthly kilowatt-hour consumption averaged over several months and divided by the number of days in the month, thus representing normal operating conditions.

It will be noted that the over-all efficiency of the No. 15 fan and drive is low. This is due to the operation of a large fan at a small fraction of its rated output, and brings up the question whether it would not pay to install a smaller fan when sinking a new mine and replace it with a larger one when required. The fans are all belt-driven by General Electric Co. squirrel-cage motors. Motor pulleys are changed when different fan speeds are required.

Table III shows the kilowatt-hours taken by the various mine operations during a 24-hr. day, when coal is hoisted only 8 hr. Thus, the figures include the fans and pumps for a full day of 24 hr. as well as the power taken by the auxiliary motors on the hoists, and by the flywheel sets when running but not hoisting coal. The latter condition occurs at noon and when handling men before and after the regular hoisting period.

By comparing these figures with Table I, the power taken by the hoist, in addition to that required for hoisting coal, can be determined. Also, by the use of these tables, it is possible to make estimates of idle-day requirements. This table covers only mines that were operating during the past winter. The others are temporarily shut down due to market conditions.

The curve in Fig. 2 shows the proportionate decline in power cost per ton during the transition period from steam to electric operation, covering a period of four years. The points on the curve were obtained by dividing the total annual power cost for the system by the total output in tons of coal. The point in 1925 represents the January results, this being the first month in the four years when no steam was used for mining purposes. This last figure gives an average for the twelve mines very close to the cost that has prevailed at No. 11 mine, and agrees with the estimated results.

# "Ship No Unsold Coal," Says Ord To Mine Operators

### Suggests Big Producers Aid Small Ones in Sales Thus Reducing Number of Agencies—Asks for More Complete Coal Data Reports

Coal shippers too often have stabbed their own business in the back by moving unconsigned coal toward markets, W. D. Ord, president of the Empire Coal & Coke Co., of Landgraff, W. Va., told the National Coal Association at Chicago, June 18. He introduced the subject "Open Consignment of Coal" with a statement by Judge Elbert H. Gary made in his address to stockholders of the U. S. Steel Corporation at their annual meeting on April 21, 1924. "We could sell," said the judge, "a great deal more temporarily, perhaps, at any time if we would make our prices low enough. That, in my judgment, would be the worst policy in the world, because it would be only temporary, others would do the same thing and the result would be to risk and hazard our profits for the future." "That," said Mr. Ord, "is the direct antithesis of the policy pursued by our industry."

Mr. Ord brought out the difference between farming and coal mining. "Farming," said he "in all its branches is perhaps the only other industry approaching our own in troubles, and yet the farmer has so succeeded in presenting his plight to the public that he is not only specifically exempted from anti-trust laws, but remedial laws for his benefit have been passed and others sugegsted and discussed. He can by concerted action so reduce or change his crop acreage each year as to bring the volume of his product within the anticipated consumption. In our own industry no two or more of us may confer together with the purpose of curtailing or limiting future production."

"Among the serious symptoms," said Mr. Ord, "accompanying and contributing to the weakness of the industry, is the practice, of operators who are in need

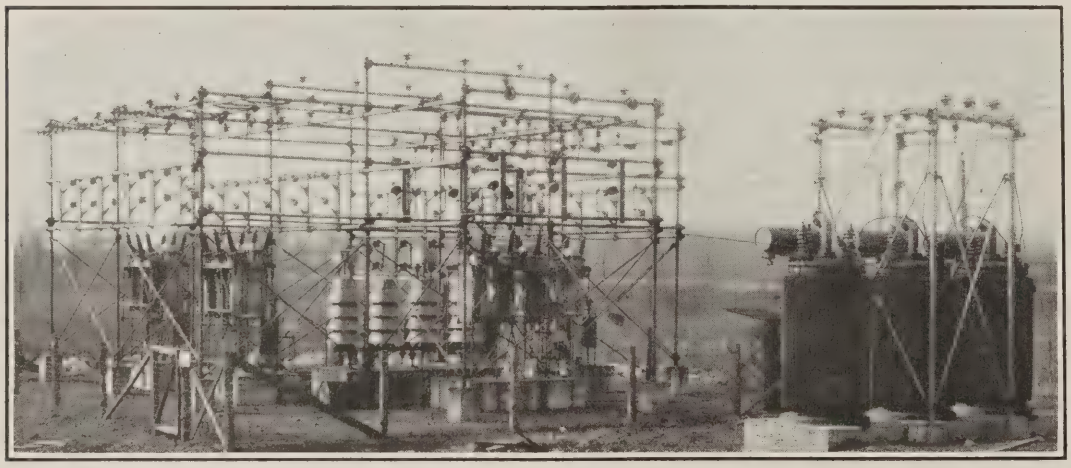


FIG. 5

**Old Ben's Outdoor Substation**

A 33,000-volt line from the power company's huge substation 800 ft. away delivers current to the coal company here for distribution to the mines. All of the coal company's power is measured on one meter at 33,000 volts. This gives the coal company the benefit of the diversity factor and, consequently, a comparatively high load factor.

of orders, of shipping coal before it has been sold. Information is lacking as to the exact extent of this practice. In some of the fields the associations do get information as to the unsold tonnage standing on the tracks of originating railroads in their own territory, but who has any information as to the unsold tonnage standing upon tracks in Chicago, Cincinnati or Detroit? Though definite information on the subject is lacking, it is a matter of common knowledge that in times of depression like the present a considerable volume of coal goes out unconsigned.

"This is not the worst of it. When ten such cars of coal arrive, let us say, at Chicago, demurrage charges soon begin to confront the operator. Not only does he reduce his price by degrees as the demurrage pressure increases, but he offers that coal to ten different brokers, each of whom proceeds to try to market it. The effect on the market is that by this simple process the ten cars have grown to one hundred.

**W. D. Ord**

President, Empire Coal & Coke Co., who assailed the practice of shipping coal on open consignment.

Mr. Ord presented a chart showing together the average daily stocks of coal on hand on the Lamberts Point, Newport News and Sewalls Point docks for each week during the year 1924 and the average weekly price of pool No. 1 smokeless coal on board vessels as quoted in *Coal Age*. To this were added lines showing the average daily price for the year and the average quantity of coal left standing on the piers daily. He showed that whenever the line representing average stocks crossed on its ascent the line of annual averages for that line the price declined; perhaps not that week but at least within the week following.

Mr. Ord asserted that a contract of sale should be a sale and should be made on such terms as to be irrevocable. He quoted an article by a purchaser of coal in which it was said that "The coal salesmen who come around trying to sell me are the least on their selling toes of all the many who infest my office" and that the coal salesmen try to sell wholly on price and not on merit and so are soon set bidding against each other.

This purchaser said that, owing to this tendency of coal salesmen he could easily make the coal salesman pay him money for buying his coal. The purchaser declared he had found a coal that would make him steam at a lower price than any other easily available but the salesman who sells him this coal lets him have it at the price being paid for inferior coals on the same market and pats himself on the back for his clever salesmanship.

"A large part of the total output" Mr. Ord said "comes from mines too small to maintain their own sales departments. Such mines frequently unite in groups and sell through some common agency, which may or may not be financially interested in the production. The evils of this system are largely due to the ignorance of the producer and to the prevalent unhealthy practice of basing the seller's compensation on the quantity of coal sold rather than on the price obtained. Moreover, if such an agency is conducted legally, the operators using the same agency cannot get together as a group to discuss the market and fix the selling price for their agent. Each operator must arrange individually with the common selling agent. Imagine the diversity of opinion among these operators as to the market, about which they have no information, the resulting embarrassment to the agent, and his difficulty in equitably distributing the business under such conditions.

"This situation in some instances is further complicated because of ownership by the agent of auxiliary facilities, boats, docks, etc., which represent heavy investments on his part and which must move tonnage to avoid ruinous overhead whether the operator makes any profit or not.

"At times of heavy demand for coal, buyers have been known to send representatives among coal operators offering inordinate prices in order to bribe them to divert to their uses coal already sold under contract to others. This reprehensible practice begot a situation that is expensive and intolerable to both operators and consumers. Many of these agents, trained in such unscrupulous methods, and finding the coal operator an easy mark, set up their own selling agencies. Some of them were without experience, connection, resources or stability, and many of these are being carried by the coal industry even today. I have in mind an instance where approximately 35,000,000 tons of coal are being sold through fifty-three different general agencies with a veritable army of sub-agents, etc. What business can possibly stand such extravagance as this?

"In conclusion may I submit the following recommendations:

"(1) That we discontinue the practice of shipping any unsold coal to any market;

"(2) That because wrong sales practices, in however small a part of the bituminous coal industry, harm the whole industry, and because for that reason it is to the interest of the larger producers to assist smaller producers in marketing their coal properly, the members of this Association give serious thought to the problem of reducing the number of sales agencies and developing a sane, profitable method of selling coal;

"(3) That in view of the recent Supreme Court decisions, to the effect that the collection and publication of market statistics about closed transactions is not in violation of the provisions of the Anti-Trust law, operators, through their Associations, inaugurate the practice of gathering and disseminating such statistical information as will give them the facts they need in wisely directing the operation of their plants and the marketing of their product;

"(4) That every proper effort be made to secure such modification of the Anti-Trust law as will permit the practice of co-operative joint selling of coal at least from each individual coal district."

In the discussion that followed it was said that the evils described by Mr. Ord had been in existence for over thirty-five years and had made the fortunes of the jobber. He had traded profitably in distress coal. In other words the coal scalper had made the profit. Why buy of the producer when he would market coal the jobber could sell for less?

# Union Fields Have Reached the Turning Point

## High Wages Have Them Against the Wall Says Observer—Cut to $5 a Day Would Largely Solve Their Problem for Unorganized Regions Cannot Go Lower than They Are Now

**By C. E. Lesher**
Assistant to the president, Pittsburgh Coal Co.,
Pittsburgh, Pa.

WHEN A TON of soft coal can be bought at the mines for $1.30 why pay more? All over the states of West Virginia and Kentucky, and in parts of Pennsylvania, mines are pouring forth thousands of cars of coal each day, eager for a market at prices ranging from $1.25 to $1.60 per ton; good coal for making steam, firing locomotives, melting iron or making coke. In the Northern fields, where the United Mine Workers are in power, the Jacksonville wage scale holds the operators to a cost for labor alone which equals or exceeds the selling prices of the Southern non-union coal.

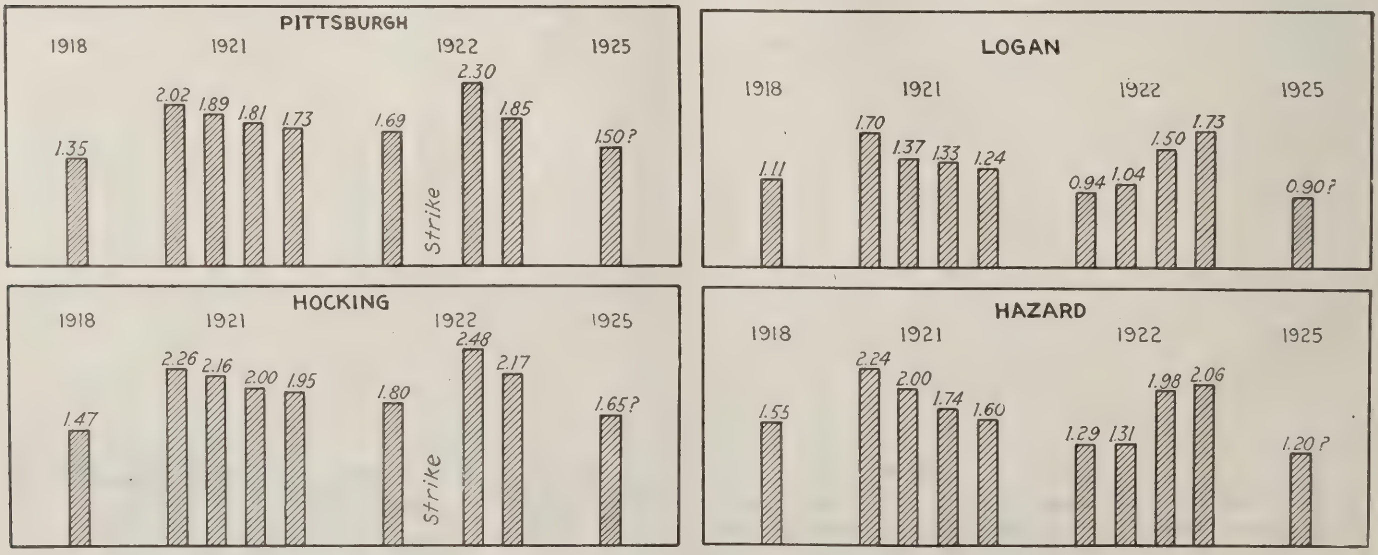
This in a word tells the story of the present difficult situation in which the union fields find themselves. Of these union fields Pittsburgh is hardest hit. The majority of the mines here are closed and non-union coal is pouring into our markets. The conditions that have prostrated the commercial operators and vitally affect the industrially owned or captive mines are not the result of any sudden or precipitate action. They are the outcome of a long series of related events. It is rather that the situation has reached a climax—a crisis, if you will. In the economic warfare that has driven in the market frontiers of Pittsburgh district coal a turning point has been reached. Pittsburgh has its back to the wall.

The war time demand for coal, the 1920 industrial boom and the coal shortage following the 1922 strike of nearly half a year all contributed to the expansion of the soft coal industry. The easy profits of those unusual periods enticed much new capital into the mining game and the recurring shoftages caused many large consumers, as steel companies and utilities, to open new large mines of their own. The high wages attracted thousands of men into the ranks of the coal mine workers.

A fuel hungry country took all the coal the railroads could move in the first few months after the 1922 strike. Every operator had a chance to produce and sell at a profit until finally by the middle of 1923 stock piles were replenished and demand and prices dropped. The decline that set in then followed through 1924.

Today and for a year past competition has ruled the soft coal business. The pace was set early in 1924 by the non-union operators. The price of soft coal dropped a dollar a ton almost as soon as the urgent demand of 1923 was satisfied. As the price dropped the non-union fields reduced wages and by thus cutting costs, were able to stay in the game. The Island Creek Coal Co. is the outstanding example of large scale non-union coal production. That company in 1923 produced 3,000,000 tons. By reducing wages and costs it was able to set a low price. Sales were nearly 5,000,000 tons in 1924 and have recently attained a monthly rate of 600,000 tons, or more than 7,000,000 tons per year. This is expansion with a vengeance.

While the union miners were on strike through nearly half of 1922, the non-union fields, eager and willing to meet the urgent demand of industry for coal, succeeded so well in expanding their capacity that they reached a weekly output of nearly 6,000,000 tons, hampered though they were by car shortage and with a portion of the non-union territory on strike. The expansion thus under way has proceeded so that today these non-union operations, mainly in the South, may easily produce 7,000,000 tons of soft coal a week.



**Comparison of Labor Costs in Two Union and Two Non-Union Highly Competitive Fields**

Except for boosts in wages in 1922 following the strike settlement in the union regions, the labor costs per ton in the Logan and Hazard fields have steadily diminished below union wages to 1925 levels of 90c. and $1.20. This illustrates the wage advantage the non-union fields have always had.

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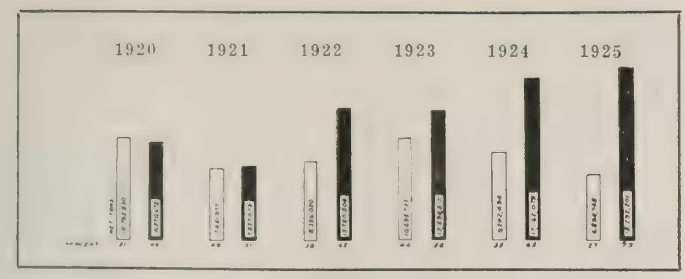
From a paper delivered on June 16 before the Engineers' Society of Western Pennsylvania.



**Non-Unionism Prevails in Appalachian Region**

This chart traces the flow of coal from Appalachian districts by railroad to destinations between Erie, Pa., and Milwaukee, Wis., on the north, and the Ohio River and St. Louis, Mo., on the south. It includes revenue coal only. The figures are for three-month periods, Jan. 1 to March 31, 1920 to 1925. The white blocks in each pair represent union coal and the black blocks non-union coal.

Whereas, in the general strike of 1919, the union closed down 71 per cent of the bituminous coal mine production, leaving less than 30 per cent in operation as non-union, and cut production from more than 12,000,000 tons to less than 4,000,000 tons per week, to such an extent has the United Mine Workers lost ground and non-union mine capacity been increased, that today the unorganized fields can produce, not 30 per cent of the required soft coal for this country, but more than 70 per cent.

Indeed, measured not in capacity but in production, the figures are even more striking. In May, 1923, 47 per cent of the soft coal produced was non-union, in May, 1924, 54 per cent was non-union, and in May, 1925, the lower-priced coal from the unorganized fields represented 70 per cent of the total output of the country. Throughout 1924 the union producers sought to retain their trade; they produced coal at union wages and, selling it at prices set by the non-union producers, took substantial losses. There is very little consuming territory that the non-union mines cannot reach at freight rates but slightly higher than from the nearby union coals.

The bituminous coal industry is overdeveloped. It has had rapid and wide fluctuations in production. But the iron and steel industry, the rubber, automobile and machine tool industries, to mention but a few, are overdeveloped; they suffer from cyclic variations in output; they are subject to booms and depressions as is coal.

Viewing the bituminous coal industry as a whole—taking into consideration the many fields in the United States—it is well said that there can be no stability and no profits until the capacity is deflated; until thousands of operators and mines and hundreds of thousands of mine workers are eliminated. It would be a most satisfactory condition were there but mines and mine workers sufficient to produce say 10,000,000 tons of coal each week, and then that the demand could be so regulated that 10,000,000 tons would be produced each week throughout the year. That indeed would be ideal for thus capital and labor would both be regularly and completely employed.

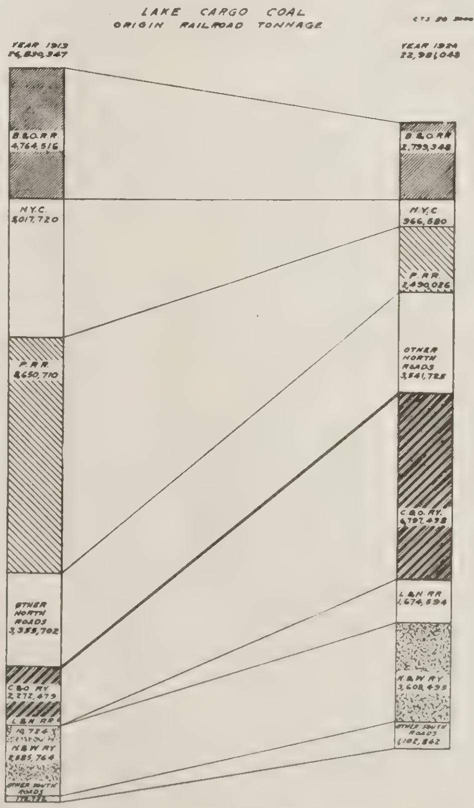
The anthracite industry has approximated that happy state, but only after a quarter century of struggle comparable to that now taking place in the bituminous coal industry and not until the entire undeveloped resource had been taken into ownership by the producing companies. How idle it is to anticipate such a solution in the soft coal fields, vast as they are and widespread. There are now too many tons of coal ready to be produced and constantly offered for any but the very favored few to realize a profit in the operation.

Yes, the bituminous coal industry is overdeveloped; it must be deflated but it cannot be deflated to the extent or in the manner our great idealist in Indianapolis hopes. What is involved in wiping out overdevelopment? How is deflation of coal mine capacity to be accomplished? The reverse of inflation, of course. Instead of adding mines and jobs for mine workers, it means subtracting mines and jobs for mine workers.

Closing a mine, discharging the men, shutting off air and stopping pumps does not, however, permanently subtract a mine from the list, for the mine may be reopened. Complete abandonment, destruction of the facilitiy for production and writing off the capital invested is the only real method of deflation.

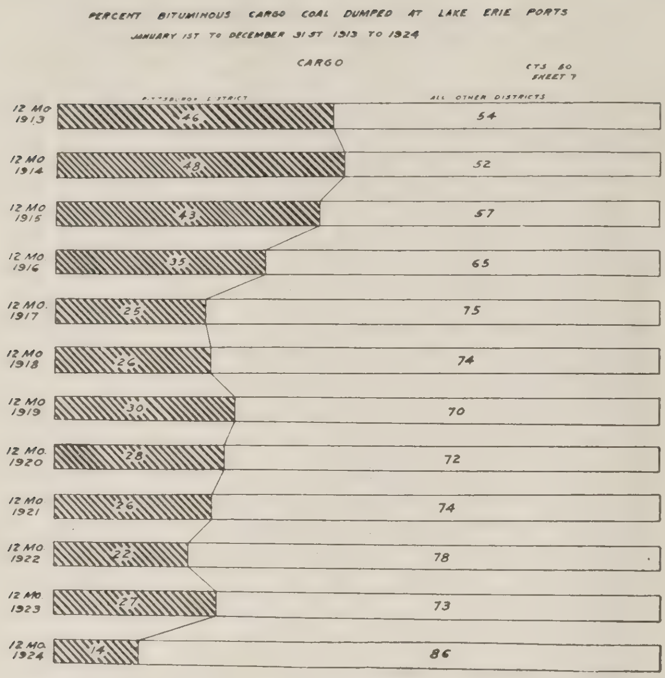
No reasonable, thinking coal man refuses to admit the logic of this. All know that some, many in fact, must be forced out through sheer inability to compete. That is American business. But the competition for business, the struggle of the fittest to survive must be governed by rules of the game that will equalize the opportunity. Other things (such as quality of coal) being equal, it is cost of production and freight rates to consumers that fix the limits of competition. There is a fair tribunal before which the coal operator may take his questions of freight rates. There are definite ways, certain well defined procedures that mark the settlements of freight rate controversies. This tribunal, the Interstate Commerce Commission, has constantly before it the complaints of coal operators.

With respect to the other largest item in cost of put-



**Coal Traffic of Railroads to the Lakes**

The carriers serving mines in non-union fields have made substantial gains in tonnage of coal as between 1919 and 1924. On the other hand the three major roads hauling from union fields in the East have had a slump. The Baltimore & Ohio R.R., since April 1, 1925, has been retrieving much of the business because of the growth of non-union tonnage from northern West Virginia.



**Decline of Lake Coal from Pittsburgh District, 1913-1924**

Over this 12-year perior there has been a gradual falling off of coal from western Pennsylvania mines to Lake Erie ports. This loss of business, as between extremes, amounts to 34 per cent. Thus far in 1925, except for the coal shipped from the Steel Corporation mines, the tonnage originating in the Pittsburgh district is practically negligible.

ting coal to the consumer, the labor cost of mining, there is no such fair tribunal. In the non-union mines the wage is set by the price of coal, limited only on the bottom of the scale by living costs. In the union fields the wage is set by contract with one organization, the International United Mine Workers of America.

Within the non-union areas the process of elimination of the unfit, the deflation of the coal industry is presumably proceeding apace. Some are falling by the wayside, but on the whole, since the non-union fields with substantially lower costs are getting the major portion of the going business, they are in a stronger position than the union fields. Ability to compete, that is in costs of production, put the union fields in a class by themselves. The union fields as entities are being eliminated.

We thus come to the crux of the whole problem. We recognize the fact of overdevelopment; we know the only method by which that overdevelopment can be reduced to such a reasonable point that those surviving may have hope of profitable operation of their mines but we find that by reason of a fixed, inelastic, high wage scale in the union fields, these fields are marked for elimination by reason of that very fact. Let us now examine some of the evidence.

Perhaps the figures for the Pittsburgh district will bring the subject nearer home. Commercial operators, members of the Pittsburgh Coal Producers' Association, produced in January, February, March and April of 1923, 5,460,000 tons; in the same four months of 1924, 4,383,000 tons; and in the same period of 1925, 3,650,000 tons. The decrease this year below 1923 was 1,810,000 tons or 33 per cent. The drop from last year was 733,000 tons or 17 per cent. In May of this year production by these companies was 335,483 tons compared with 878,000 tons in May of 1924 and 1,620,000 tons in May of 1923.

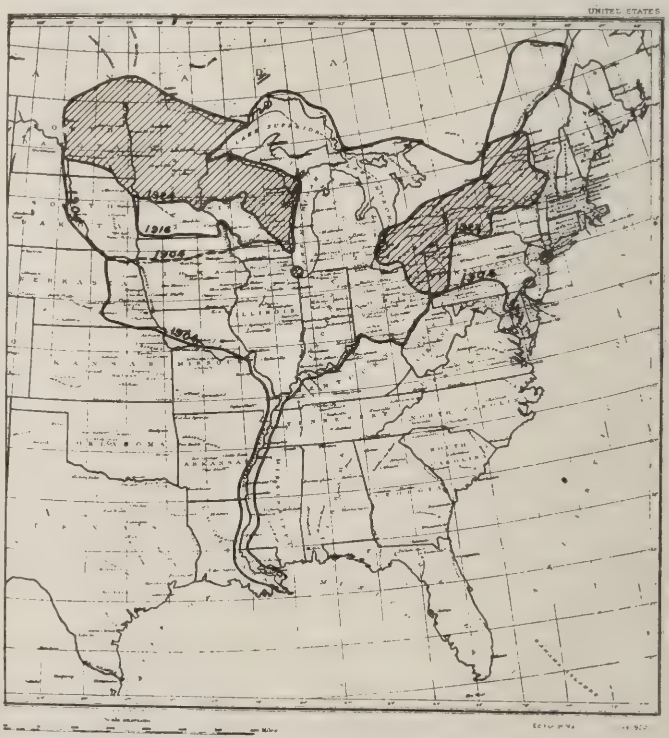
To help correct this situation the union operators would like to have the miners agree to a revision of the wage scale. It must be clear, from what has preceded, that if this district had a lower cost it could sell more coal; with the $5 basic wage of the November, 1917 wage scale, this district could secure its share of the going trade, which is not by any means inconsequential.

The stock argument of those who oppose such a revision is that it would be of no avail. It is contended first that there is no market for coal at any price, and second, that if the miners on the high scale should accept a reduction to the November, 1917, level, the operators in the non-union fields would cut their rates still lower and thus nullify any advantage of a cut here.

If that were substantially true it would be a pertinent argument. If the other fields could follow down any reductions in the union fields then it would be a hopeless matter for this field. That is not the case, however. A few there are among the non-union producers who have not cut to the bone, but they are few and far between.

Remember that since the present active competition began early in 1924, the non-union operators have been fighting among themselves for the business—not only for their own trade but for the union operators' normal trade. This fight has been fast and furious. They have already gone the limit in cutting wages and prices. The competition among themselves has long since resulted in wage scales representing rock bottom levels. Only by keeping their mines in full operation six days a week, have they been able to hold labor at those low rates.

The non-union wage situation is sensitive. Recall the history of last winter in the Connellsville region. Independents had cut wages in the summer of 1924 but the Steel Corporation had not. In the winter there was a flurry in demand for labor. Up went the wages of the



**Shrinkage of Pittsburgh District Markets**

Twenty years ago Pittsburgh seam Youghiogheny gas coal was the widest known standard, high-volatile coal in the United States. It was marketed by the million of tons down the Mississippi Valley to New Orleans. It was used in St. Louis gas plants. It was sold through the Midwest and Northwest and throughout the East. It shared the New England market with Irwin basin gas coal from the same Pittsburgh seam. But its frontiers have been driven steadily back. The line shown here for 1924 is not a solidly held line. Non-union coal is filtering through in every route.

independents to be reduced again in a few months after the flurry was over.

Competition and the survival of the fittest throughout the soft coal industry can be resumed when the union fields can meet the wage competition of the non-union fields, not until then, and a cut to the wage level of November, 1917, will do the trick.

It is argued that combinations among the operators, the banding together of many smaller union operations with few large corporations is the solution for the union fields. Adequately financed, such large companies may be able to weather the depression to better advantage than smaller concerns, but they cannot produce coal cheaper. Those who look to combination as a solution are dreaming of strength to put the price up. And how can they do that with the disparity in labor costs with the South? How, for instance can a combination of independents in the Pittsburgh district increase the price of coal? And how can it otherwise make a profit against non-union competition?

Again it is argued that the coal operators should modernize their mining practices; that if the coal producers would use loading machinery they could cut costs without cutting wages. It is hardly necessary to advise mining engineers of the progress that is being made in that direction or of the practical difficulties that beset every installation of loading machinery or face conveyors. Time and money will mechanize coal mining, but don't forget that the non-union fields can be and are as active in that direction, in fact more active, than the union fields. The non-union operator has no union to fight when he installs labor-saving machinery.

When a business concern finds itself unable to sell its goods, when the market price drops and a huge inventory remains, that concern either cuts the price and stays in the market, or it goes bankrupt. The union coal industry—operators and miners—are in that condition now. The union theorizes about the situation. The operators are dealing with it in a practical way. The operators tried alone to handle the situation in 1924. They failed. The union refuses to co-operate this year.

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# Should Anthracite Miners Ask Higher Wages?

## Their Pay Rose 192 per Cent in 10 Years Without Decreases Shown in All Other Industries, Says the National Industrial Conference Board After Survey

WITH THE PRESENT wage contract between the anthracite mine operators and the United Mine Workers of America expiring on Aug. 31, this year, considerable interest attaches to a study of wages in the anthracite field made by the National Industrial Conference Board, 247 Park Ave., New York.

If the mine workers insist upon further pay increases on expiration of the existing contract, which was arrived at in 1923 after a five months' strike in 1922, they will do so in face of the fact that their wages have risen considerably more during the past ten years than those of workers in the manufacturing industries, the railroads or the public utilities.

Anthracite mine workers' average hourly earnings, according to the Conference Board's analysis, from June, 1914, until December, 1924, have risen 192 per cent; hourly wages in twenty-five basic manufacturing industries have increased during the same period only 129 per cent; hourly earnings of workers on Class I railroads, 141 per cent; those of workers in illuminating gas plants, 111 per cent, and in electric light and power establishments, 121 per cent.

The wage study covers 140 collieries employing 96,226 wage earners, a group including approximately 62 per cent of the total number of workers in the industry. It is the latest of a series of surveys of anthracite mining wages, the first of which covered wages as of June, 1914, followed by other studies of anthracite wages as of October, 1920, March, June and October, 1921, and of July and December, 1923.

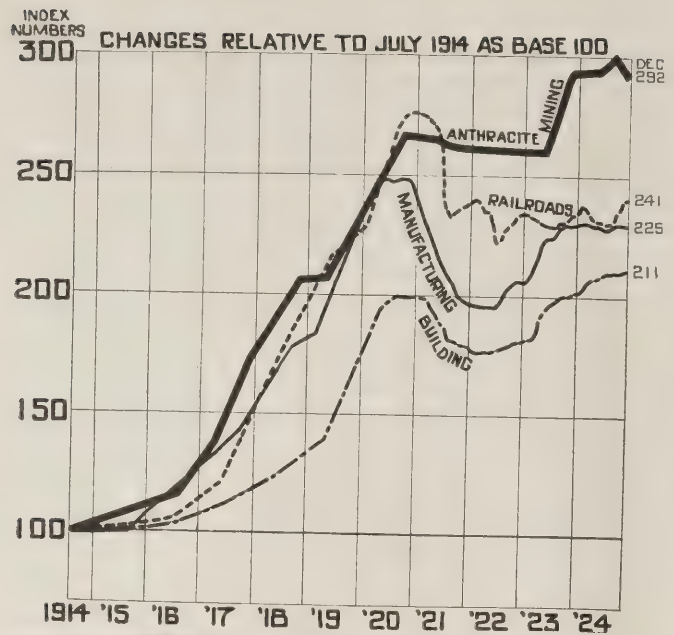
**Table I—Average Hourly Earnings—Typical Labor Groups All Wage Earners**

| Period | Anthracite |  | Manufacturing |  | Railroads (a) |  | Illuminating Gas (a) |  | Electric Light and Power (a) |  |
|---|---|---|---|---|---|---|---|---|---|---|
|  | Actual | Index Numbers | Actual | Index Numbers | Actual | Index Numbers | Actual | Index Numbers | Actual | Index Numbers |
| June, 1914 | $0.284 | 100 | $0.245 | 100 | $0.254 | 100 | $0.270 | 100 | $0.278 | 100 |
| October, 1920 | 0.758 | 267 | 0.611 | 249 | 0.702 | 276 | 0.580 | 215 | 0.566 | 204 |
| March, 1921 | 0.756 | 266 | 0.549 | 224 | 0.697 | 274 | 0.568 | 210 | 0.558 | 201 |
| June, 1921 | 0.747 | 263 | 0.521 | 213 | 0.597 | 235 | 0.545 | 202 | 0.546 | 196 |
| October, 1921 | 0.744 | 262 | 0.487 | 199 | 0.595 | 234 | 0.520 | 193 | 0.539 | 194 |
| July, 1923 | 0.754 | 265 | 0.546 | 223 | 0.580 | 228 | ....(b) | ... | ....(b) | ... |
| December, 1923 | 0.832 | 293 | 0.559 | 228 | 0.595 | 234 | .... | ... | .... | ... |
| December, 1924 | 0.829 | 292 | 0.561 | 229 | 0.611 | 241 | 0.569 | 211 | 0.615 | 221 |

(a) In some cases figures for the exact month indicated are not available and those for the nearest month have been used.
(b) Public Utility figures for 1923 not available.

**Table II—Index Numbers, Average Hourly Earnings in Anthracite Mining, June, 1914-100**

| Period Last Half of | All Wage Earners (Less Contract Miners' Laborers) | All Wage Earners (Less Contract Miners and Miners' Laborers) | Inside Labor |  |  |  |  | Outside Labor |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | All Inside (Less Contract Miners' Laborers) | Common Labor | Semi-Skilled Labor | Skilled Labor | Contract Miners | All Outside | Common Labor | Semi-Skilled Labor | Skilled Labor |
| June, 1914 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Oct., 1920 | 267 | 265 | 259 | 270 | 267 | 241 | 270 | 284 | 289 | 262 | 246 |
| March, 1921 | 266 | 266 | 265 | 271 | 267 | 245 | 268 | 284 | 287 | 264 | 246 |
| June, 1921 | 263 | 267 | 261 | 271 | 269 | 249 | 260 | 284 | 289 | 262 | 246 |
| Oct., 1921 | 262 | 266 | 259 | 271 | 267 | 246 | 258 | 284 | 289 | 263 | 246 |
| July, 1923 | 265 | 270 | 264 | 277 | 276 | 257 | 261 | 283 | 290 | 253 | 247 |
| Dec., 1923 | 293 | 298 | 291 | 305 | 307 | 281 | 288 | 312 | 318 | 288 | 270 |
| Dec., 1924 | 292 | 291 | 291 | 298 | 292 | 272 | 294 | 309 | 315 | 285 | 265 |



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**Hourly Wages in Four Industrial Groups**

This illustrates the increase of wages in anthracite mining as compared with fluctuations in railroading, manufacturing and building in the United States since July, 1914.

While other industrial wages decreased somewhat since the peak year, 1920, it is significant that wages in the anthracite mines show practically no recessions, increasing steadily from pre-war days, when the average hourly wage was 28.4c. to December, 1924—the month upon which the present study is based—when the hourly earnings per worker averaged 82.9c. Hourly earnings of contract miners, who, however, make up by far the largest single group, showed an even greater increase, reaching $1.20 in December, 1924, a total net gain of 194 per cent over June, 1914.

With the exception of contract miners, a slight decrease was suffered by anthracite workers between December, 1923, and December, 1924, the composite figure for all anthracite wage earners other than contract miners' laborers dropping from 83.2c. to 82.9c. per hour.

The average daily earnings, or earnings "per start," of contract miners do not show as large an increase for the ten-year period since pre-war days, owing to the shortened working hours. However, the anthracite mine workers, who in June, 1914, drew an average of $3.46 per day, when the day averaged 9 hr., now draw an average of $9.11 for a day averaging 7.6 hr., representing a gain of 163 per cent in earnings per start. Average earnings per start from December, 1923, to December, 1924, increased from $9.05 to $9.11.

The increase in "real" earnings, that is of wages in terms of purchasing power, owing to the increase in cost of living, of course, is somewhat less than the increase in money wages. However, average "real" hourly earnings of all anthracite mine workers in December, 1924, show an increase of 76 per cent over those of pre-war days, as against an increase of 45 per cent in real hourly earnings of railroad workers, and a 38 per cent increase in real hourly earnings of wage earners in manufacturing industries.

Real earnings per start (or day) of contract miners were 58 per cent higher in December, 1924, than in June, 1914.

In a way, the results of the different surveys referred to are not strictly comparable since they are not based throughout upon returns from identical operating units. To compensate for this, the figures are weighted.

The weighting was on the following basis: It was assumed that because of the broad coverage of the first study, the totals in that study represented the normal proportion of each class of worker in the average operating company. This proportion was obtained not as of one month, but the average of the five periods covered was taken, in order to allow for any seasonal differences which might exist. Consequently, in arriving at the four composite averages, (1) all wage earners, less contract miners' laborers; (2) all wage earners, less contract miners and miners' laborers; (3) all inside, less contract miners' laborers; (4) all outside labor, a weight was given to the earnings of each class of labor included in each group, equal to the representation of that group as ascertained by the method described.

This prevented an unduly large proportion of certain types of labor in the companies reporting for any one of the surveys from carrying too much weight in arriving at composite figures for the industry or group.

**Table III—Average Hourly Earnings in Anthracite Coal Mining—All Wage Earners and Classified Groups, June, 1914, to December, 1924**

| | | | Inside Labor | | | | | Outside Labor | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Period Last Half of | All Wage Earners (Less Contract Miners' Laborers) | All Wage Earners (Less Contract Miners and Miners' Laborers) | All Inside (Less Contract Miners' Laborers) | Common Labor | Semi-Skilled Labor | Skilled Labor | Contract Miners | All Outside | Common Labor | Semi-Skilled Labor | Skilled Labor |
| June, 1914 | $0.284 | $0.225 | $0.321 | $0.220 | $0.232 | $0.275 | $0.410 | $0.200 | $0.183 | $0.220 | $0.265 |
| Oct., 1920 | 0.758 | 0.596 | 0.833 | 0.594 | 0.619 | 0.664 | 1.106 | 0.567 | 0.528 | 0.576 | 0.652 |
| March, 1921 | 0.756 | 0.598 | 0.851 | 0.596 | 0.620 | 0.674 | 1.097 | 0.567 | 0.525 | 0.580 | 0.652 |
| June, 1921 | 0.747 | 0.600 | 0.838 | 0.596 | 0.625 | 0.685 | 1.065 | 0.567 | 0.528 | 0.576 | 0.652 |
| Oct., 1921 | 0.744 | 0.599 | 0.833 | 0.596 | 0.620 | 0.677 | 1.058 | 0.568 | 0.528 | 0.579 | 0.653 |
| July, 1923 | 0.754 | 0.608 | 0.849 | 0.609 | 0.640 | 0.707 | 1.070 | 0.565 | 0.531 | 0.557 | 0.654 |
| Dec., 1923 | 0.832 | 0.671 | 0.935 | 0.670 | 0.713 | 0.773 | 1.179 | 0.524 | 0.582 | 0.633 | 0.716 |
| Dec., 1924 | 0.829 | 0.655 | 0.935 | 0.655 | 0.678 | 0.747 | 1.204 | 0.617 | 0.577 | 0.628 | 0.701 |

Average hourly earnings of contract miners' laborers, Dec., 1924 = $0.914.

Prior to the present study, contract miners' laborers were not included in the tabulations. So many companies reported data for this group in the present survey that the average hourly earnings of the group were computed, but because of their absence from earlier studies they could not be included in the composite averages for December, 1924. Otherwise figures for that month would not be comparable with those for earlier periods. Consequently, the hourly earnings of contract miners' laborers for December, 1924, are shown independently.

Contract miners are the most important group of anthracite labor and in their case the earnings per start have also been computed. This appears to be a more satisfactory method of arriving at a measure of actual earnings than to attempt to compute average weekly earnings, since there is considerable controversy over the best method of arriving at an accurate figure for weekly earnings in this industry. This is due to the frequent changes in personnel between mines so that although a man may have been employed almost continuously during a pay period, he may have appeared on two or more payrolls, and it is manifestly impossible to trace each man through the various payrolls to arrive at his actual earnings for the period. In the few cases where the hours of the contract miners were not given, the contract miners' starts were multiplied by 7.6 to obtain the actual hours. In some instances contract miners' starts were not given and in such cases the contract miners' hours were divided by 7.6 to obtain an estimated figure on contract miners' starts. The figure 7.6 was used because according to the latest available study of the anthracite industry by the United States Bureau of Labor Statistics, contract miners averaged 7.6 hr. per start or per day worked.

# Graphic Charts Enable Mine Heads and Higher Ups to Watch Every Factor in Coal Costs

### Mining Needs Intelligent System of Checking Items as Total Cost Is Not a Reliable Criterion — Graphs Make Comparison Easy and Disclose Exact 'Sore Spots'

**By W. L. Affelder**[*]
Pittsburgh, Pa.

**W. L. Affelder**

SELDOM, if ever, has any industry been in a state that required as *intelligent* cost reduction as the coal industry demands at the present time. The word "intelligent" requires special emphasis, because cost reductions in this industry are too frequently made without proper regard for the resultant condition of the property and are often effected without adequate knowledge concerning what particular elements constituting the total cost are at fault. In this discussion, it is my intention to confine myself almost entirely to that portion of the cost of production covered by payroll labor.

It might be well to state that inasmuch as I am not an accountant, but am in active charge of the operating details of twenty-three bituminous coal mines, located in six Pennsylvania counties, this subject will be treated from an operating, rather than an accounting standpoint.

Too many operating officials fail to look beyond their *total labor cost.* If a mine produces the same tonnage in two cost periods, and in the latter of the two does so at a decline of say 5c. per ton, the satisfaction occasioned by this accomplishment too frequently prevents that minute degree of cost analysis which a corresponding increase would have occasioned. Such reductions in total labor cost may have included gratifying decreases in some of the constituent items and entirely unwarranted increases in others, which, on account of the resultant aggregate having been lowered, were overlooked.

Inasmuch as each of our mines submits a semi-monthly distribution of payroll, along lines suggested several years ago by the National Coal Association, on sheets made up as shown in Fig. 1, data are readily available from which to tabulate semi-monthly labor costs under the captions of "Mining," "Yardage & Deadwork," "Timbering," "Drainage," "Ventilation," "Haulage & Hoisting," "Tipple," "Preparation," "Railroad Car Loading & Yard Expense," "Structural Maintenance & Repairs," "Equipment Maintenance & Repairs," "Sundry Labor," "Superintendence," "Mine Office," and "Power Plant."

The figures constituting these fifteen sub-divisions, as well as the tonnage and total costs, for 23 mines, were so numerous and confusing that it was found impossible to appreciate their value properly during a semi-monthly period alone, to say nothing of being able to benefit by comparing them with previous costs, under similar conditions as to outputs and wage rates. It was, decided, therefore, at the beginning of the year 1924 to plot all semi-monthly labor costs on graphic charts especially designed to serve for a period of three years. These charts are 12¾ by 22 in. in dimensions, with the horizontal and vertical spacings ¼ and ⅛ in. respectively. Outputs are plotted 1,000 tons to the space, total labor costs 5c. to the space, and the various sub-divisions 1c. to the space. The charts are ordinarily "white prints" made in our own blue print room.

At mines where explosives are furnished free and where an adjustment in the mining rate is made to offset their price, an item of "Free Explosives" cost is also shown, and is included in the "Total Labor Cost." Under the "Haulage & Hoisting" sub-division, "Animal & Motor Haulage" is shown separately, as well as being included under "Haulage & Hoisting."

## CHARTS KEPT UP TO DATE

As all figures used on the charts had to be prepared even for the inefficient method of cost interpretation already in use, little additional work and no extra expense was incurred by the adoption of the charts. It goes without saying that much of the value of any comparative cost system depends upon the promptness with which the necessary data are available. Charts, therefore, are extended as soon as possible after the middle and end of each month.

In order to make this discussion practical, I will confine myself almost entirely to certain analytical discussions of payroll costs of some of our mines, using actual reproductions of our cost charts with only the names of the mines and the total cost scales eliminated. Actual letters passing between our operating officials will be used to illustrate the manner in which costs can

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[*] Assistant to the President, Hillman Coal & Coke Co.

readily be interpreted, and, if necessary, corrected. Certain vertical lines on these charts have been made heaiver than others, thus rendering it easier to follow the discussion. Mines will be designated by number instead of by name.

Fig. 2 is a reproduction of the cost charts of "Mine No. 2." On March 11, 1925, the assistant general superintendent wrote to the superintendent of this operation as follows:

"I have before me the graphic cost charts for your mine for the period ending Feb. 28.

"I note that your production for the period ending Feb. 28 was approximately 4,000 tons under the production for the period ending Feb. 15. With this reduction in tonnage, you were able to hold your Total Labor Cost at approximately the same figure as for the period ending Feb. 15.

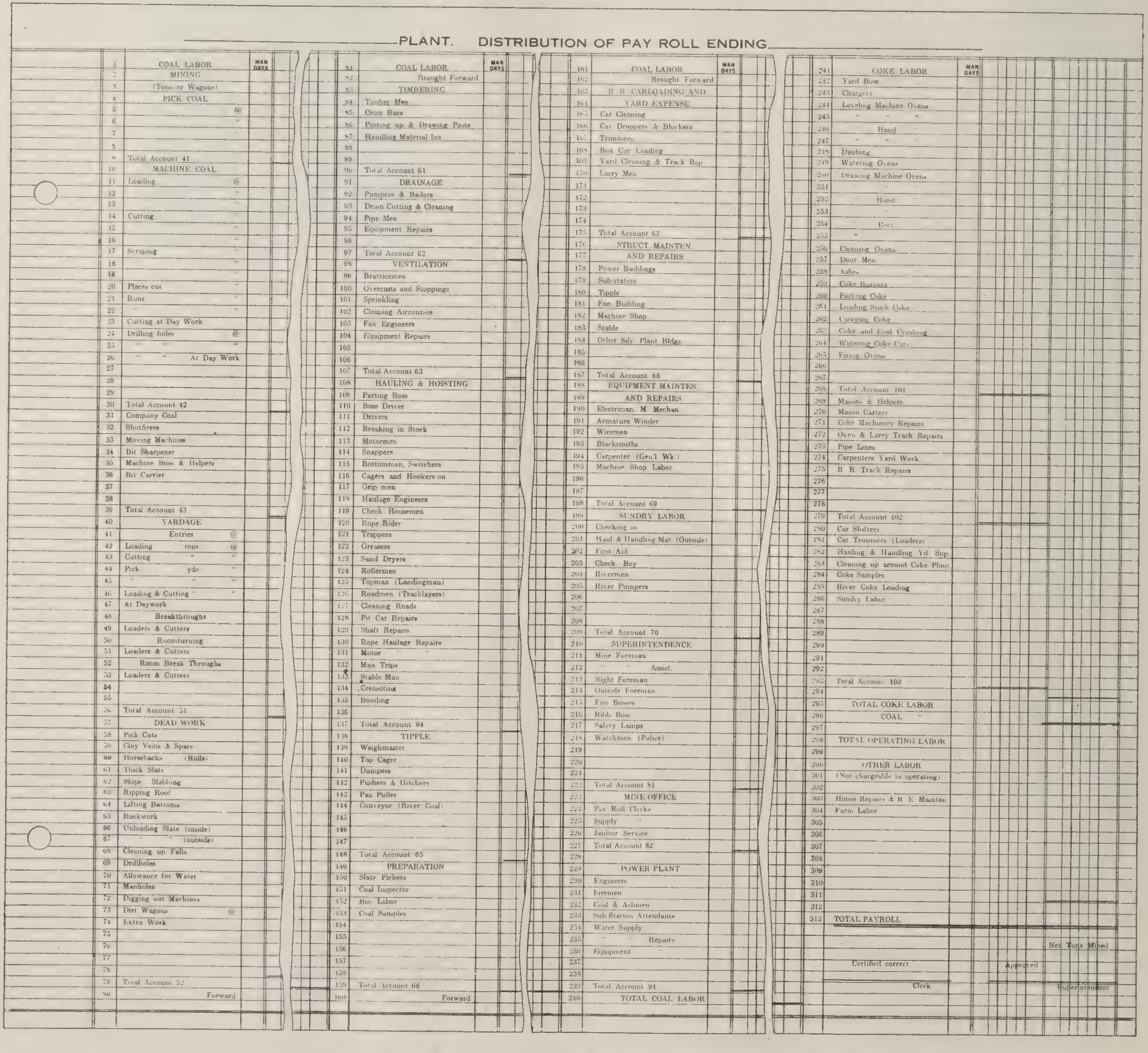
"Your cost, however, is still considerably higher than it was during the months of June, July, August, and September, 1924, when the production was much under that for the period ending Feb. 28 of this year.

"Yardage & Deadwork cost for the period ending Feb. 28 shows a decrease of approximately 2c. per ton from that of the period ending Feb. 15. Timbering, Drainage, and Ventilation have shown practically no change this year.

"Haulage & Hoisting costs for the period ending Feb. 28 show a slight increase over the period ending Feb. 15. This particular division of your costs has increased slightly over 6c. per ton since the first half of January of this year, and should receive vigorous attention. Costs must be carefully watched and reductions made where possible."

On April 2, 1925, he wrote the superintendent as follows:

"The graphic cost charts for the period ending March 15, 1925, show that with an increased production of approximtely 1,200 tons over the previous period, you were not able to make any reduction in your labor cost, but show rather an increase of 1c. per ton.



PLANT. DISTRIBUTION OF PAY ROLL ENDING

| | | |
|---|---|---|
| 1 | COAL LABOR | MAN DAYS |
| 2 | MINING | |
| 3 | (Tons or Wagons) | |
| 4 | PICK COAL | |
| 5 | @ | |
| 6 | " | |
| 7 | " | |
| 8 | | |
| 9 | Total Account 41 | |
| 10 | MACHINE COAL | |
| 11 | Loading @ | |
| 12 | " | |
| 13 | " | |
| 14 | Cutting " | |
| 15 | " | |
| 16 | " | |
| 17 | Scraping " | |
| 18 | " | |
| 19 | " | |
| 20 | Places cut " | |
| 21 | Runs " | |
| 22 | " " | |
| 23 | Cutting at Day Work | |
| 24 | Drilling holes @ | |
| 25 | " " " | |
| 26 | " " At Day Work | |
| 27 | | |
| 28 | | |
| 29 | | |
| 30 | Total Account 42 | |
| 31 | Company Coal | |
| 32 | Shotfirers | |
| 33 | Moving Machines | |
| 34 | Bit Sharpener | |
| 35 | Machine Boss & Helpers | |
| 36 | Bit Carrier | |
| 37 | | |
| 38 | | |
| 39 | Total Account 43 | |
| 40 | YARDAGE | |
| 41 | Entries @ | |
| 42 | Loading tons @ | |
| 43 | Cutting " " | |
| 44 | Pick yds. " | |
| 45 | " " " | |
| 46 | Loading & Cutting " " | |
| 47 | At Daywork | |
| 48 | Breakthroughs | |
| 49 | Loaders & Cutters | |
| 50 | Roomturning | |
| 51 | Loaders & Cutters | |
| 52 | Room Break Throughs | |
| 53 | Loaders & Cutters | |
| 54 | | |
| 55 | | |
| 56 | Total Account 51 | |
| 57 | DEAD WORK | |
| 58 | Pick Cuts | |
| 59 | Clay Veins & Spars | |
| 60 | Horsebacks (Rolls) | |
| 61 | Thick Slate | |
| 62 | Skips Slabbing | |
| 63 | Ripping Roof | |
| 64 | Lifting Bottoms | |
| 65 | Rockwork | |
| 66 | Unloading Slate (inside) | |
| 67 | " " (outside) | |
| 68 | Cleaning up Falls | |
| 69 | Drillholes | |
| 70 | Allowance for Water | |
| 71 | Manholes | |
| 72 | Digging out Machines | |
| 73 | Dirt Wagons @ | |
| 74 | Extra Work | |
| 75 | | |
| 76 | | |
| 77 | | |
| 78 | | |
| 79 | Total Account 52 | |
| 80 | Forward | |

| | | |
|---|---|---|
| 81 | COAL LABOR | MAN DAYS |
| 82 | Brought Forward | |
| 83 | TIMBERING | |
| 84 | Timber Men | |
| 85 | Cross Bars | |
| 86 | Posting up & Drawing Posts | |
| 87 | Handling Material Ins | |
| 88 | | |
| 89 | | |
| 90 | Total Account 61 | |
| 91 | DRAINAGE | |
| 92 | Pumpers & Bailers | |
| 93 | Drain Cutting & Cleaning | |
| 94 | Pipe Men | |
| 95 | Equipment Repairs | |
| 96 | | |
| 97 | Total Account 62 | |
| 98 | VENTILATION | |
| 99 | Bratticemen | |
| 100 | Overcasts and Stoppings | |
| 101 | Sprinkling | |
| 102 | Cleaning Aircourses | |
| 103 | Fan Engineers | |
| 104 | Equipment Repairs | |
| 105 | | |
| 106 | | |
| 107 | Total Account 63 | |
| 108 | HAULING & HOISTING | |
| 109 | Parting Boss | |
| 110 | Boss Driver | |
| 111 | Drivers | |
| 112 | Breaking in Stock | |
| 113 | Motormen | |
| 114 | Snappers | |
| 115 | Bottommen, Switchers | |
| 116 | Cagers and Hookers on | |
| 117 | Grip men | |
| 118 | Haulage Engineers | |
| 119 | Check Housemen | |
| 120 | Rope Rider | |
| 121 | Trappers | |
| 122 | Greasers | |
| 123 | Sand Dryers | |
| 124 | Rollermen | |
| 125 | Topman (Landingman) | |
| 126 | Roadmen (Tracklayers) | |
| 127 | Cleaning Roads | |
| 128 | Pit Car Repairs | |
| 129 | Shaft Repairs | |
| 130 | Rope Haulage Repairs | |
| 131 | Motor " " | |
| 132 | Man Trips | |
| 133 | Stable Man | |
| 134 | Creosoting | |
| 135 | Bonding | |
| 136 | | |
| 137 | Total Account 64 | |
| 138 | TIPPLE | |
| 139 | Weighmaster | |
| 140 | Top Cager | |
| 141 | Dumpers | |
| 142 | Pushers & Hitchers | |
| 143 | Pan Puller | |
| 144 | Conveyor (River Coal) | |
| 145 | | |
| 146 | | |
| 147 | | |
| 148 | Total Account 65 | |
| 149 | PREPARATION | |
| 150 | Slate Pickers | |
| 151 | Coal Inspector | |
| 152 | Bin Labor | |
| 153 | Coal Samples | |
| 154 | | |
| 155 | | |
| 156 | | |
| 157 | | |
| 158 | | |
| 159 | Total Account 66 | |
| 160 | Forward | |

| | | |
|---|---|---|
| 161 | COAL LABOR | MAN DAYS |
| 162 | Brought Forward | |
| 163 | R. R. CARLOADING AND | |
| 164 | YARD EXPENSE | |
| 165 | Car Cleaning | |
| 166 | Car Droppers & Blockers | |
| 167 | Trimmers | |
| 168 | Box Car Loading | |
| 169 | Yard Cleaning & Track Rep | |
| 170 | Larry Men | |
| 171 | | |
| 172 | | |
| 173 | | |
| 174 | | |
| 175 | Total Account 67 | |
| 176 | STRUCT. MAINTEN. | |
| 177 | AND REPAIRS | |
| 178 | Power Buildings | |
| 179 | Sub-station | |
| 180 | Tipple | |
| 181 | Fan Building | |
| 182 | Machine Shop | |
| 183 | Stable | |
| 184 | Other Sdy. Plant Bldgs. | |
| 185 | | |
| 186 | | |
| 187 | Total Account 68 | |
| 188 | EQUIPMENT MAINTEN. | |
| 189 | AND REPAIRS | |
| 190 | Electrician, M. Mechan | |
| 191 | Armature Winder | |
| 192 | Wiremen | |
| 193 | Blacksmiths | |
| 194 | Carpenter (Gen'l Wk.) | |
| 195 | Machine Shop Labor | |
| 196 | | |
| 197 | | |
| 198 | Total Account 69 | |
| 199 | SUNDRY LABOR | |
| 200 | Checking in | |
| 201 | Haul. & Handling Mat (Outside) | |
| 202 | First Aid | |
| 203 | Check Boy | |
| 204 | Rivermen | |
| 205 | River Pumpers | |
| 206 | | |
| 207 | | |
| 208 | | |
| 209 | Total Account 70 | |
| 210 | SUPERINTENDENCE | |
| 211 | Mine Foreman | |
| 212 | " " Assist. | |
| 213 | Night Foreman | |
| 214 | Outside Foreman | |
| 215 | Fire Bosses | |
| 216 | Ribb Boss | |
| 217 | Safety Lamps | |
| 218 | Watchmen (Police) | |
| 219 | | |
| 220 | | |
| 221 | | |
| 222 | Total Account 81 | |
| 223 | MINE OFFICE | |
| 224 | Pay Roll Clerks | |
| 225 | Supply " | |
| 226 | Janitor Service | |
| 227 | Total Account 82 | |
| 228 | | |
| 229 | POWER PLANT | |
| 230 | Engineers | |
| 231 | Firemen | |
| 232 | Coal & Ashmen | |
| 233 | Sub Station Attendants | |
| 234 | Water Supply | |
| 235 | " " Repairs | |
| 236 | Equipment " | |
| 237 | | |
| 238 | | |
| 239 | Total Account 91 | |
| 240 | TOTAL COAL LABOR | |

| | | |
|---|---|---|
| 241 | COKE LABOR | MAN DAYS |
| 242 | Yard Boss | |
| 243 | Chargers | |
| 244 | Leveling Machine Ovens | |
| 245 | " " " | |
| 246 | " Hand " | |
| 247 | " " " | |
| 248 | Daubing | |
| 249 | Watering Ovens | |
| 250 | Drawing Machine Ovens | |
| 251 | " " " | |
| 252 | " Hand " | |
| 253 | " " | |
| 254 | " Rect " | |
| 255 | " " " | |
| 256 | Cleaning Ovens | |
| 257 | Door Men | |
| 258 | Ashes | |
| 259 | Coke Burners | |
| 260 | Forking Coke | |
| 261 | Loading Stock Coke | |
| 262 | Carrying Coke | |
| 263 | Coke and Coal Crushing | |
| 264 | Watering Coke Cars | |
| 265 | Firing Ovens | |
| 266 | | |
| 267 | | |
| 268 | Total Account 101 | |
| 269 | Masons & Helpers | |
| 270 | Mason Carters | |
| 271 | Coke Machinery Repairs | |
| 272 | Oven & Larry Track Repairs | |
| 273 | Pipe Lines | |
| 274 | Carpenters Yard Work | |
| 275 | R. R. Track Repairs | |
| 276 | | |
| 277 | | |
| 278 | | |
| 279 | Total Account 102 | |
| 280 | Car Shifters | |
| 281 | Car Trimmers (Loaders) | |
| 282 | Hauling & Handling Yd. Sup. | |
| 283 | Cleaning up around Coke Plant | |
| 284 | Coke Samples | |
| 285 | River Coke Loading | |
| 286 | Sundry Labor | |
| 287 | | |
| 288 | | |
| 289 | | |
| 290 | | |
| 291 | | |
| 292 | | |
| 293 | Total Account 103 | |
| 294 | | |
| 295 | TOTAL COKE LABOR | |
| 296 | " COAL " | |
| 297 | | |
| 298 | TOTAL OPERATING LABOR | |
| 299 | | |
| 300 | OTHER LABOR | |
| 301 | (Not chargeable to operating) | |
| 302 | | |
| 303 | House Repairs & R. E. Mainten. | |
| 304 | Farm Labor | |
| 305 | | |
| 306 | | |
| 307 | | |
| 308 | | |
| 309 | | |
| 310 | | |
| 311 | | |
| 312 | | |
| 313 | TOTAL PAYROLL | |

Net Tons Mined

Certified correct

Clerk

Approved

Superintendent

**Fig. 1—Form Used in Making Semi-Monthly Distribution of Pay Roll**

Fifteen subdivisions of the expense of coal production are here shown. These furnish abundant data for plotting the curves that show at a glance just how the various items rise or fall. Tendencies or trends thus are discernible immediately and faults may be corrected before they gain momentum

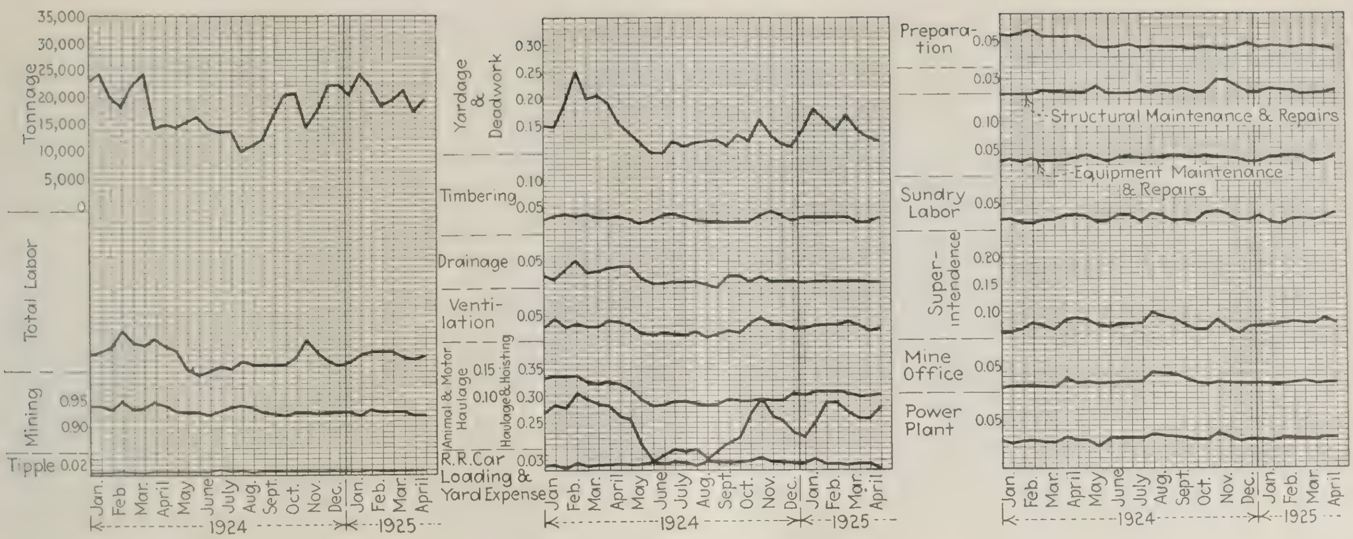


**Fig. 2—Costs at Mine No. 2**

These charts enable the assistant general superintendent, as brought out in the correspondence in this article, to place his finger at once on the exact items that showed unwarranted increases in costs.

"A reduction of approximately 2c. per ton in your Haulage & Hoisting cost was more than offset by an increase of 3c. per ton in your Yardage & Deadwork cost.

"Please watch your costs carefully and make every possible reduction."

On May 9 I wrote to the general superintendent and the assistant general superintendent as follows:

"It is disappointing to note that the labor cost at Mine No. 2 in the second half of April was $0.020 higher than in the first half of April in spite of the fact that the tonnage increased 14 per cent. It is true that although the tonnage was the same in the last half of April as in the first half of March, 1925, and in the first half of February, 1924, the labor cost was $0.060 less than in the first half of March, and $0.110 less than in the first half of February, but this does not seem to be any justification for the increase as shown between the two halves of April.

"Although decreases occurred in a number of the sub-divisions, I wish to call your special attention to the following increases: Timbering $0.008, Ventilation $0.006, Haulage & Hoisting $0.020, Equipment Maintenance & Repairs $0.006, and Sundry Labor $0.008. Please investigate these increases."

"Increases are especially acute in Yardage & Deadwork, Timbering, Drainage, and Haulage & Hoisting. This is one of the few mines which shows a very marked increase in cost since the advance in wages, as compared with the cost under the same scale of wages early in 1924."

Attention is especially called to the fact that in spite of a marked decrease in tonnage in the four semi-monthly periods which preceded the next wage scale reduction, a reduction in labor cost of 15 cents was accomplished between the first half of January and the first half of March.

Fig. 3 is a reproduction of the cost charts of Mine No. 5. Here wages were reduced to the 1917 scale on May 27, 1924, the 1920 scale was restored on Dec. 16, 1924, and the 1917 scale re-established on March 16, 1925. Charts are exceedingly valuable in comparing costs under such fluctuations in wage scales. A discussion of the costs of this mine are especially interesting because replies to letters calling attention to increases are submitted. Early in February, 1925, I wrote to the operating officials of the district in which this mine is located as follows:

"Mine No. 5's cost for the second half of January does not compare favorably with the first half of May, on the same scale of wages, as the increase in cost for exactly the same tonnage is $0.060.

"I wish to call your attention especially to an increase in Timbering cost from $0.095 to $0.125, in Mining cost from $0.617 to $0.646, (probably due to a drop of nine points in the wagon), and in Haulage & Hoisting cost from $0.312 to $0.409, part of which, at least, probably is due to the haulage extension work now under way."

The assistant general superintendent replied with the following letter:

"Replying to your memorandum regarding Mine No. 5, I beg to state that I have gone into the matter in detail with the superintendent.

"We compared the costs during the first half of May with those in the second half of January, and found that in Timbering the increase was due entirely to the employment of additional timbermen, made necessary by the intensive work that was done in C Flat.

"Mining costs increased from $5,836.95 to $6,375.44, largely on account of the increase in the amount of pick coal.

"Haulage & Hoisting increased from $2,946.76 to $4,036.74, on account of an increase in drivers from $922.97 to $1,114.57, plus $58.16 for men employed in breaking in stock. The use of so much new stock resulted in a decrease in efficiency of both drivers and horses. There was an increase in the cost of snappers from $7.55 in May to $85.87 in January, due to the fact that last May the boss driver was helping out with the work of the snappers, whereas in January he was not able to do that work.

"Cleaning Roads increased from $32.75 to $128.67.

"Haulage Repairs increased from $27.20 to $1,024.45. The new haulage road was accountable for $852 of this increase. This new haulage road will soon be completed, and as the day force has been reduced and the weight of the wagon increased, the costs in the immediate future should be considerably better than those that were mentioned in your memorandum."

It is needless to state that the preparation of the foregoing reply entailed such a thorough investigation

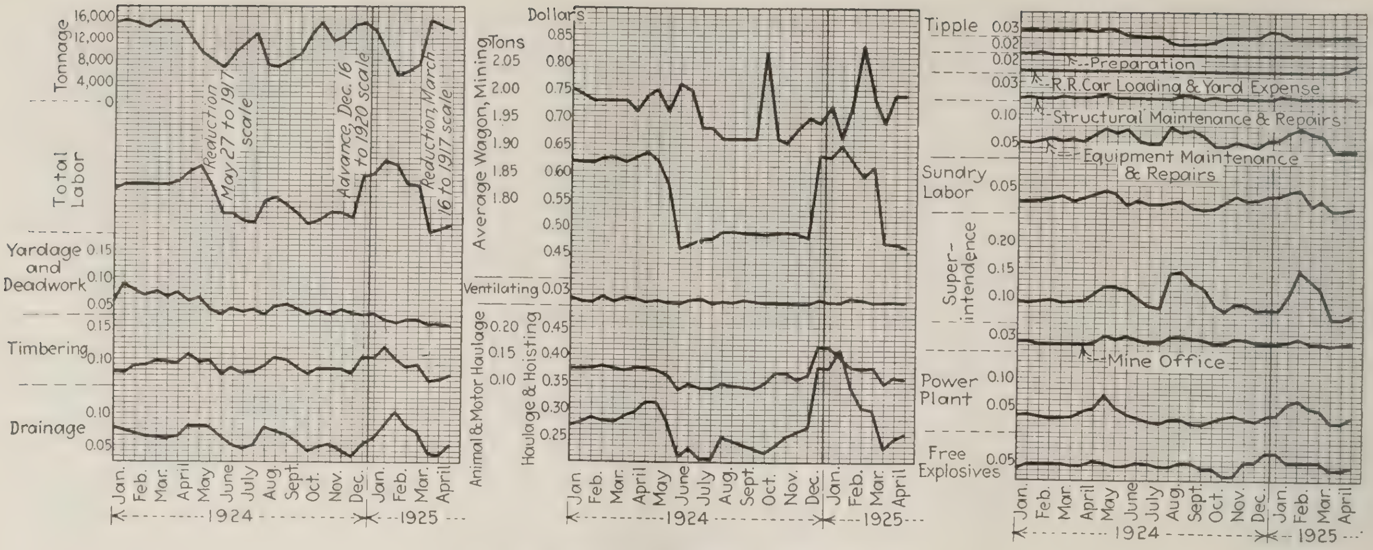


Fig. 3—Fluctuating Wage Scales Charted

Even though the scale of wages changed several times in a few months, yet costs under the different rates are entirely comparable. Note in the accompanying correspondence how quickly an increase of 6c. in total cost was traced to its two chief constituent elements of mining and timbering. In self defence the superintendent had to seek the reasons for these increases and when found it required but little time for him to have them properly adjusted.

of the cost at this mine from many angles, that the eyes of both the assistant general superintendent and the superintendent were opened to possible reductions in expense. That the investigation bore fruit is evident from the fact that, although the tonnages in the remaining three semi-monthly periods under the then existing wage scale were considerably less than in the last half of January, there was a continuous reduction in the total labor cost, aggregating 23c. Not a single sub-division mentioned in my letter failed to respond well to the corrective treatment to which it was subjected.

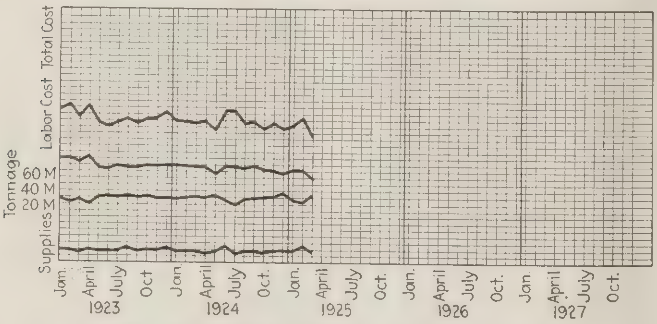


Fig. 4—Five-Year Monthly Cost Chart

This is intended for an entirely different purpose from the previous graphs. Although it may be used for other purposes, it is particularly useful in estimating what price must be obtained in order to make a profit when production is at any certain rate.

In spite of the consistent reduction in Total Labor Cost, I found it necessary in the latter part of April to write as follows:

"Mine No. 5 in the first half of April had practically the same tonnage as in the first half of December and in the last half of October, but it is interesting to note that the total labor cost in the first half of April was $0.110 less than in the first half of December, and $0.080 less than in the last half of October.

"The Haulage & Hoisting sub-division, however, is $0.011 above what it was in the last half of October. It seems to me that this former figure should be duplicated."

The reply to this letter read as follows:

"In the first half of April, Haulage & Hoisting cost, $3,567.71, compared with $3,823.59 in the first half of December and $3,425.10 in the second half of October. A large part of the increase in April as compared with October is accounted for by the fact that Motor Haulage Repairs increased from $14 to $528.88, due to the construction of the new haulage road to the North headings. Other sub-divisions of the cost are more in keeping with what might have been expected, although Pit Car Repairs increased from $116.10 to $200.75, and Drivers from $1,095.07 to $1,159.47."

Even though the principal item of increase, namely, the construction of an authorized haulage extension, was an entirely legitimate expense, the investigation disclosed an increase in expense for Animal Haulage, which is now well on its way toward correction.

A more recent letter regarding the same plant, dated May 9, 1925, reads:

"Although Mine No. 5 had practically the same production in the last half of April as in the first half of December, the labor cost dropped $0.070 per ton. In view of this drop, how do you account for the fact that the Drainage cost increased $0.020?"

This letter emphasizes my earlier statement that even with favorable reductions in Total Labor Costs, unfavorable increases in certain sub-divisions can only be detected by proper means of comparison and interpretation.

I might continue with a burdensome number of actual illustrations of the method of cost analyses under consideration, but I feel that sufficient examples have already been given regarding payroll costs. The impression should not be gained that this system entails a great multiplicity of letters. On the contrary, weaknesses are detected so readily and so specifically that correspondence is reduced to an absolute minimum. Most of the investigations made necessary by the apparent irregularities in costs are taken up by the operating officials directly with the superintendents on their numerous visits to the plants.

An entirely different type of graphic cost chart, designed to cover a period of five years, in monthly intervals and showing Supplies, Labor, Total Cost (including all overhead expenses) and Tonnage, can be made to serve many useful purposes. These charts are made 10 by 18 in., with ⅛ in. vertical and ¼ in. horizontal spacings. Fig. 4 shows a reproduction of such a chart.

An inspection of this chart reveals, among other things, that the total cost for July, 1924, for a production of 19,000 tons, was about 40c. per ton higher than in March, 1925, when the production was approximately 33,000 tons. These charts are of great value in conferences between the operating department and the sales department when the question comes up, as it frequently does, as to what selling price must be approached with a mine operating at a certain tonnage. On the theory that "what man has done, man can do," the operating department is able to predict with a fair degree of accuracy, where the dividing line between profitable and unprofitable business lies.

There are many other ways in which graphic charts can be used to advantage by operating officials as an aid in controlling, through proper interpretation, their costs. The method of application will necessarily differ somewhat with the individual problems of various companies, but the construction and use of graphic charts is simple enough to enable any operating official worthy of the name, to obtain surprising benefits from them.

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# Combination Loader Reduces Breakage at the Tipple

### Arrangement Provides for Putting Coal Into Either Box or Flatcar—Improves Preparation in Highly Competitive Field

**By Charles M. Schloss**
Denver, Colo.

In the Rocky Mountain region competition is keen and as a result coal preparation is exacting. The plant of the Sunnyside Coal Mining Co., Strong, Colo., was considered a fairly efficient preparator, but difficulty was experienced in loading the lump product. Separation into the various sizes was made on a horizontal screen, open-top cars were loaded by means of a curved, hinged, telescoping chute on a comparatively slight inclination and closed cars were filled by a steep chute delivering to a box-car loader. The open-car equipment was set on approximately the critical angle for the material handled and as a result the coal sometimes required "bucking." The box-car chute, on the other hand, was so steep that the lumps attained high velocity in their descent and struck the side of the box-car loader with such force that many of them were shattered, thus nullifying the effect of the screening that previously had been administered.

After careful consideration by officials of the company it was decided to remedy these evils. Accordingly, a loading boom was installed. This device, which is the invention of Glenn A. Knox, superintendent of the Gunn Quealy Coal Co., is intended to load both open-top and box cars on the same track. It much resembles an ordinary boom except that it is mounted on a universal joint at the screen end and suspended from a trolley at the delivery end. This arrangement permits not only a raising or lowering of the delivery end but a swinging of the entire boom from a position parallel to the loading track to one extending diagonally across it.

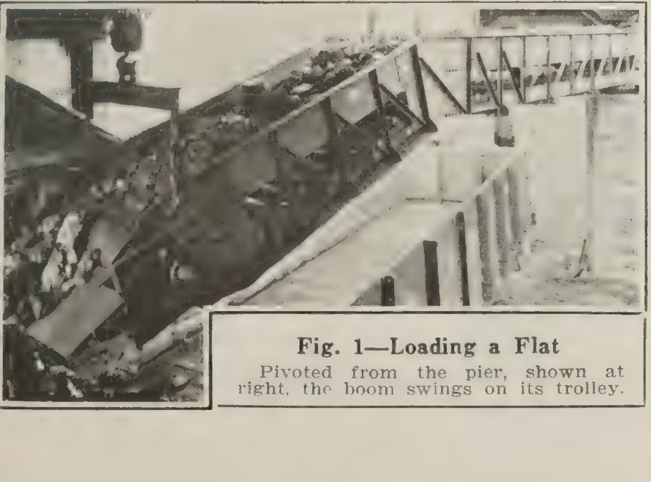


**Fig. 1—Loading a Flat**

Pivoted from the pier, shown at right, the boom swings on its trolley.

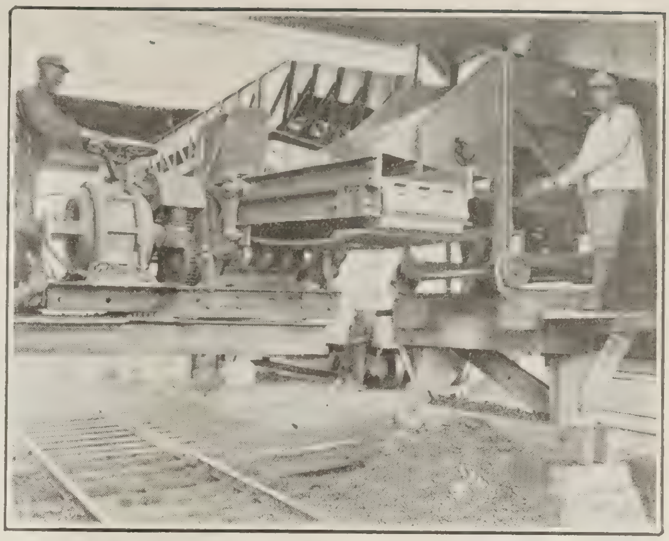


**Fig. 2—In Position to Load a Box Car**

When a closed car is to be filled the box-car loader is pushed through the car door in the usual way. The boom is swung to a position parallel to the lump track discharging to the short transverse conveyor. This latter is pushed forward on its rails until it will deliver to the box car loader which is pedestalled on the opposite side of the car. Note the small coal on the ground. This drops through a narrow opening between the transverse conveyor belt and its delivery plate. This opening thus frees the large coal from small pieces that may have ridden the lumps across the screen. Supt. R. T. Bell, boss of the mine at Strong, Colo., where this installation was made, stands at the right.

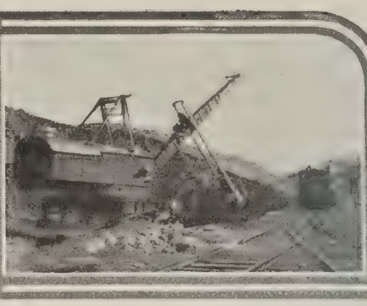
The Sunnyside installation consists of a Knox boom 36 in. wide and 37 ft. 6 in. long between centers. This is supported at its delivery end by a 4-ton hoist on an I-beam trolley. A right-angle chute attached to the end of the main screen delivers the coal to the boom with a minimum drop.

### Method of Loading Box Cars

When loading box cars the boom is swung to a position parallel to the track and delivers to a short transverse conveyor which extends into the car, there discharging its burden to the box-car loader. The transverse conveyor is supported on wheels and may be moved forward or back by the operation of a hand crank.

As is well known, passing coal over a screen does not give perfect sizing, as some small pieces will invariably "ride" the lumps and be delivered with them. At Strong, measures have been taken to surmount this difficulty. The plate on the discharge end of the transverse conveyor is placed with its edge about 1 in. from the apron where it rounds the head sprockets. Any small material accompanying the lumps falls through this opening into a chute and is delivered onto the ground outside the car. A test showed that three tons of fines were thus removed from the lump in the course of a day's run, the capacity of the mine being 600 tons. An elevator and bin are being installed to take care of this material.

# News Of the Industry



## Lewis Threatens Nationwide Strike To Enforce Jacksonville Agreement; Will Refuse Cut in Hard-Coal Wages

Scranton, Penna., June 30.—A national suspension of coal mining to bring about the enforcement of the Jacksonville agreement of 1924 in the bituminous field was threatened today by John L. Lewis, international president of the United Mine Workers, in his first address to the Tri-District Anthracite Miners' Convention in this city.

The International president enumerated three instances in which this three-year working contract was alleged to have been broken and scathingly condemned several of the nation's leaders of industry, who he declared were responsible for the abrogation of the contract. These were Andrew W. Mellon, Secretary of the Treasury and part owner of the Pittsburgh Coal Co., Col. C. S. Watson, former Senator, and John D. Rockefeller, Jr., of the Consolidation Coal Co., and Charles M. Schwab, president of the Bethlehem Steel Corporation, which controls the Bethlehem Mines Corporation. The three companies mentioned were charged by Lewis with "scrapping" the Jacksonville agreement, which he likened to Germany's treatment of the Belgian treaty. This agreement, which was signed by the union officials and operators in February, 1924, covered a three-year period.

The union chief declared that the Bethlehem, Consolidation and Pittsburgh companies have not only cancelled their agreement but have employed non-union workers to operate their mines. After reviewing the conditions Lewis declared: "If this situation continues it may be necessary at a later date to authorize a national shutdown of the mines of the country while the government, operators and miners discuss the question of the enforcement of the Jacksonville agreement."

This declaraton brought the convention to its feet in applause. The union leader in the course of his address made it clear that the anthracite workers would be firm in their refusal to accept any wage reduction. He discussed reports in the press to the effect that the anthracite operators would demand a 17 to 20 per cent reduction and declared: "Let me say now to the anthracite operators that the United Mine Workers of the hard-coal region will not under any circumstances accept a reduction of 17 or 20 per cent or of 1 per cent."

Further indication of the accepted belief that the anthracite mine workers, whose representatives assembled at the convention, will demand an increase in wages above the rates provided for in the present contract was manifested in a statement issued by Secretary-Treasurer Thomas Kennedy previous to the opening session. "I can say that sentiment is unalterably opposed to any backward step and is equally in favor of progress whenever and wherever possible," was Mr. Kennedy's statement to the press.

Following the opening convention formalities Chris. J. Golden, president of District 9, was elected temporary chairman of the convention. He was succeeded by International President John L. Lewis. Mr. Lewis was not present at the opening session.

The convention was addressed on Monday by Mr. Golden, Mayor John Durkan and a representative of a New York State labor college. A credential committee, composed of district union secretaries, was appointed, in conformance to custom. The business of the convention, that of formulating wage and working condition demands, will not be completed before Friday of this week, it is indicated. The convention will hear many speeches and motions and, as in the past, promptly forget them.

The scale committee, which will consist of the presidents, vice-presidents and secretary-treasurers of the three anthracite districts, and international officers, will be formally named in a day or two and it will prepare and present to the delegates the demands to be submitted to the operators. These demands will include a 15 to 20 per cent wage increase, a long-term contract and the "check-off." They will be met by counter demands from the operators for a decrease in wages of 10 or 15 per cent.

The negotiating parties will meet in Atlantic City early next week, probably Wednesday. It is generally understood that, in spite of demands to the contrary, the miners will be satisfied with a renewal of the present agreement; they will, however, make the "check-off" a prominent issue. On this phase of the negotiations the operators will manifest a united opposition.

### *Strike Settlement Urged By Empire Steel Corp.*

The British Empire Steel Corporation has submitted to James Murdock, federal Minister of Labor, a proposal for the settlement of the Cape Breton coal strike. The terms include a reduction of the 1924 wage scale by approximately 10 per cent and the abolition of the check-off system. The company states that it is ready to enter into a contract with the United Mine Workers on the understanding that no corporation official shall be required to meet an officer of the district board who is a Communist, a member of the Workers Party, or is known to profess Communistic principles and that none of the men who have been guilty of lawlessness will hereafter be employed by them in any capacity.

This proposal was submitted to the officials of District 26, U. M. W., and laid before the locals for consideration. Up to June 23, ten locals had voted to reject the proposal. At New Waterford the document was publicly burned. The New Waterford power plant, which was damaged during the fight between the police and the strikers on June 11, is again partly in operation, but it will be some time before it can operate at its normal capacity.

## Colorado Miners Still Work For Existing Scale

Miners in the northern Colorado fields will remain at work under the existing scale of wages until a definite decision is made by the Colorado State Industrial Commission. A cut in the day wages from $8.25 to $5.50 and in the pay of loaders of 10 to 15c. a ton recently was proposed by the companies, but definite action will not be taken until the case is reviewed by the commission.

It was reported that the mines would close following hearings on the new wage scale by the State Industrial Commission, but the companies state that if the mines are closed it will be due to a falling off of business and not to changes in the wage scale.

The northern Colorado coal fields include Boulder, Frederick, Erie, Lafayette, Louisville and Dacona, and approximately 2,000 miners are employed in this territory.

## Mining Men Urge Repeal of Hoch-Smith Resolution

Repeal of the Hoch-Smith resolution, passed at the last session of Congress, was demanded by representatives of the coal and metal mining industries in a meeting held at the Hotel La Salle, Chicago, June 23. About 40 men attended the meeting, which was called by James F. Callbreath, executive secretary, American Mining Congress, and agreed that the resolution condemned was an impediment to the efficient administration of the Transportation Act of 1920.

The Hoch-Smith resolution has been a storm center since its passage last January and many directly conflicting views as to its meaning have been offered. Apparently its intent is to have the Interstate Commerce Commission give full weight to the principle of what the traffic will bear and to extend special consideration to the rates on agricultural products.

In opening the meeting, Mr. Callbreath expressed the fear that the general inquiry begun under the resolution, *Rate Structure Investigation*, I. C. C. Docket No. 17,000, might result in increasing the rates on products of the mines. The resolution, he declared, asserted nothing new, but merely questioned whether the commission, in the exercise of its authority, was following the underlying principles of the organic law from which it derived its powers.

D. C. Yeats, Homestake Mining Co., said that the commission, upon learning that Colorado and New Mexico wanted to place their coal in the Dakotas, made such a move possible by increasing the rate on Wyoming coal. D. F. Hurd, secretary, Pittsburgh Vein Operators' Association; Jonas Waffle, traffic manager, Indiana Bituminous Coal Operators' Association, and C. J. Goodyear, commissioner, Pittsburgh Coal Producers' Association, all stated their desire to refrain from action till the purposes of the Interstate Commerce Commission were made plain.

After discussion the meeting passed the resolution urging Congress to repeal the Hoch-Smith resolution in the interests of efficient transportation, sound business and industrial development and that the proper administration of the Transportation Act be left to the Interstate Commerce Commission.

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## Virginian Pier Starts Work

The new $3,000,000 coal pier of the Virginian Ry. at Sewells Point, Va., was formally opened by C. H. Hix, president of the Virginian, before about 200 spectators, June 2. The pier loaded 9,000 tons of coal in the American steamer Sewalls Point, for Boston, for demonstration purposes.

The new pier, regarded as the most modern in the world, has an hourly dumping capacity of 7,200 tons. It is operated by electricity throughout, electric trimmers eliminating much hand labor and speeding the service to ships. Two car dumpers are operated simultaneously, loading two ships at one time. The new pier is not being operated regularly, but is ready for use.

**Martin G. Bolt**

Martin Bolt, 54, of Springfield, Ill., state director of the Department of Mines and Minerals of Illinois, died June 23, after three weeks' illness following an operation. He began working in the mines at Oglesby, Ill., at the age of 12. For two years he was secretary-treasurer of the Ladd Local Union, United Mine Workers, and was later elected president of the local. He also was secretary-treasurer of the subdistrict union for two years. He became secretary of the Mining Board in April, 1907, under Governor Deneen, and remained in the department until his death. He was appointed director of the Department of Mines and Minerals Dec. 1, 1923, and was reappointed by Governor Small, the appointment being confirmed by the Senate only a few days ago.

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## B. & O. Revenues Last Year Hurt by Coal Slump

The Baltimore & Ohio Railroad Co. reports total railway operating revenues for May, 1925, of $18,687,410, compared with $18,360,021 for May, 1924; operating expenses of $14,248,007, against $13,838,697, and net railway operating income of $3,184,866, compared with $2,389,509 the year before. The accumulation for the first five months of this year shows total railway revenues of $90,901,961, compared with $93,557,897 the previous year; operating expenses of $72,567,206, compared with $75,373,847 in 1924, and net railway operating income of $12,379,808, compared with $12,624,811.

The company's report for 1924 states that "With the exception of products of agriculture, which showed a slight increase, the decrease in traffic was general. Especially notable was the large decrease in bituminous coal, which is the largest single item of traffic handled by the company. The explanation for this decrease, however, lies in the fact that the bituminous coal industry in the Northern bituminous coal fields has been handicapped in the Eastern markets by the lower mining costs prevailing in the Southern Pocahontas, New River and other fields. This condition was partly offset by the company handling a larger proportion of coal traffic from connecting lines and finding a market for it on or via its lines. Notwithstanding the reduction in coal traffic, the revenues of the company were generally sustained owing to increased commercial and industrial activities in the territory served by its lines."

## Say Mines in Kansas Merger Are Overvalued

New figures on the valuation of the properties of nineteen coal companies in the Kansas-Missouri field, as a necessary step before a sale or merger of the holdings can be effected, were ordered prepared, at a meeting of the interested companies in Pittsburg, Kan., Tuesday, June 23.

W. C. Shank, prominent Pittsburg (Kan.) coal man, was assigned to make the new appraisement, with the power to choose assistants as he sees fit. Valuations already prepared, it was agreed, are too high in most instances, comparison of figures showing some to be out of all proportion to others.

As soon as the reappraisement is completed, another meeting will be called by Ira Clemens, Pittsburg coal operator, whose efforts have had much to do with bringing the scheme for a pooling of interests to a head and who is slated for president of the new company, to be known as the Basin Stripping Corporation.

From this second meeting is expected to come final action. Mr. Clemens said he was unable to state whether the plan finally will terminate in a merger, with all the companies retaining their interests under one management, or whether the original project of outright purchase by a single corporation would be carried out.

"Our object now is to get down to a definite working basis," Mr. Clemens said. "We cannot do that until we have the revaluation figures before us."

It is possible, he said, that the properties will be bought outright if the valuation figures are pared down to where they will appeal to Graham-Parsons & Co., of New York, proposed purchasing agents.

Mr. Clemens explained that although options to buy the holdings of the nineteen companies expire July 1, virtually all the companies have expressed willingness to extend the time of the options, if necessary. The first valuation figures were about 35 per cent too high, as reckoned by Leslie, Banks & Co., New York accountants, he said. Carefully prepared data show that the proposed merger would save 27c. a ton in the overhead expense of producing coal and would have much to do with restoring the Kansas coal market. First announcement concerning the consolidation was made in Chicago, June 18, following a series of conferences.

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Class I railroads from Jan. 1 this year to June 1 placed in service 70,949 freight cars, according to the Car Service Division of the American Railway Association. This was an increase of 12,394 cars over the number installed during the corresponding period last year. Of the total number installed from Jan. 1 to June 1, this year, 25,117 were coal cars, or 6,295 more than during the same period in 1924. During the month of May alone, freight cars installed totaled 13,023, which included 4,313 coal cars. Freight cars on order on June 1 totaled 36,515, compared with 61,256 on June 1 last year.

## Gould Asks Co-operation To Increase Strength of National Coal Association

In addressing the New River Coal Operators' Association at Mount Hope, W. Va., Saturday night, June 27, Morton L. Gould, Indianapolis, made his first public utterance since his election, June 19, to the presidency of the National Coal Association. Mr. Gould sounded the keynote of his administration in these words:

"You and I know that frequently most auspicious occasions are not of our own design. They just happen—at the right time, at the right place and with the right people. Truly, it seems to me that this meeting is such an occasion. If it is within my power to rise to this occasion, my administration as the president of the National Coal Association will surely have been launched upon a sea of service with prevailing winds of certain promise that we shall reach our port.

"A fact always to be remembered concerning fundamental principles is that we are all in the same boat, which means that if an association of the far West, for instance, rocks the boat, the interests of West Virginia and other sections are jeopardized. If one association isn't keeping in stroke or isn't putting its very best prowess and technique behind every turn of the oars, 'the whole crew' suffers, in more or less degree.

"None of us, if we want to get anywhere, can 'paddle our own canoe' when it comes to national work. We all have our own local interests, but, if we attempted to operate on a national scale through the canoe method, we would soon be capsized.

"I trust this is not a mixed metaphor and that through this interpretation of a general truth I may give to the bituminous operators of the United States the real reason of by abiding conviction of the vital need for universal co-operation as regards all problems of nation-wide scope.

"Because this is the way I feel, I am here to extend offer of co-operation and make pledge of support. You, along with others, have asked me to be the captain of the crew and hence am I not justified in confidence that the New River operators, the operators of other sections of your state and those of other states will always keep in stroke?

"You appreciate the extent of the preliminary work involved in the formulation of a program looking toward the collection and dissemination of trade information. Work along this line is already under way in our Washington office and very shortly a meeting of a special committee will be called to whip preliminary plans into final form.

"Let me call to your attention the optimism of Robert K. Cassatt that this industry is headed for better times, and his assertion that the stronger we build the National, through increased membership and through deeper realization of the responsibilities of membership, the sooner will we come into our own. I can visualize the day when *every* bituminous operator will give financial support to the belief which all operators *now* undoubtedly share, namely, that the growth and the influence of the National have a *direct* bearing on the welfare of *each* operator. In the next twelve months I am going to induce as many people as I possibly can to translate belief into membership. I conceive this to be the duty of the president of this association. It won't be long, however, before this association will be all-embracing, and when that time comes the efforts of all can be devoted almost entirely to the definition and the conduct of constructive programs.

"Help me, will you, in every way you can to advance this effort? Lend me a hand in your own territory so we may recruit to maximum. Support me to the greatest extent in the National so our work may be productive of such substantial results as to win for this industry the place in the sun to which it is entitled. And ever remember that I do not chant empty words when I declare your interests are my interests and my time is as at your service."

## *Improvements on C. & O. To Cost $20,000,000*

The Chesapeake & Ohio Ry. plans expansion and development in Virginia and West Virginia and elsewhere, involving a total expenditure of $20,000,000. In addition the road is planning the construction of a new line of fifty-five miles from Stonecoal to Gilbert, W. Va., which will link up two important branches of the system and will open up new territory in the coal fields. One of the principal improvements, now actually under way, is the construction of a large freight terminal at Clifton Forge, Va. This will comprise a large receiving yard as well as a classification and forwarding yard for eastbound traffic.

Other items in the program include construction of a third track near Russell, Ky., and the construction of a large coaling station at that place.

## Russian Coal Output Gaining

Official figures of coal production in the Soviet Union in the first quarter of the current fiscal year ending Oct. 1 next, as received by the Russian Information Bureau in Washington from Moscow, show an increase of 7.4 per cent over the gross production for the corresponding period last year. The comparative figures of output are as follows, in millions of poods*:

| | 1st Quarter 1924-25 | 1st Quarter 1923-24 |
|---|---|---|
| Don Coal Basin .... | 154.5 | 135.4 |
| Moscow Coal Fields | 8.0 | 13.6 |
| Urals .............. | 20.0 | 17.3 |
| Siberia ............ | 18.0 | 20.4 |
| Total ............ | 200.5 | 186.7 |

*About sixty poods equals one ton.

The coal shipped from the mines during the quarter totaled 168,400,000 poods as compared with 116,900,000 poods in the same quarter last year.

## Indiana Coal Men to Fight Boost in Short-Haul Rates

Coal operators and Chamber of Commerce officials of Evansville, Ind., have joined hands in initiating a fight on the proposed 25 per cent increase in short-haul freight rates in Indiana and neighboring states.

At a meeting of leading operators of the southern Indiana district and the transportation committee of the Evansville Chamber of Commerce held in Evansville June 16, resolutions condemning the proposed increase were adopted and Leslie LaCroix, traffic manager of the Chamber of Commerce, was commissioned to present the matter at the rate hearing held before the Interstate Commission Commission at Indianapolis June 29. Authorization also was given LaCroix and a committee of coal operators and consumers to co-operate with other organizations throughout the state to defeat any increase in short-haul rates.

Those chosen to officially represent the coal interests of the state at the Indianapolis hearing are LaCroix, R. I. Pierce, traffic manager of the Terre Haute Chamber of Commerce; Jonas Waffle, Terre Haute, representing the Indiana Bituminous Coal Operators Association; R. B. Coapstick, traffic manager of the Indiana State Chamber of Commerce, and A. B. Cronk, Indianapolis, attorney for the Indiana Public Service Commission.

LaCroix was accompanied to Indianapolis by two southern Indiana operators, Walter Korff and E. J. Myerhoff, both of Evansville.

The proposed rates per ton are:

| | Cents |
|---|---|
| One to twenty miles................ | 75 |
| Twenty to thirty miles............. | 80 |
| Thirty to fifty miles.............. | 95 |
| The present rates per ton are: | |
| One to ten miles................... | 55 |
| Ten to thirty miles................ | 59 |
| Thirty to fifty miles.............. | 80 |

## Railroad Fuel Cost Lower

The cost of coal used by Class 1 railroads in locomotives in transportation train service during last April decreased from the average for the month before, according to figures prepared by the Bureau of Coal Economics of the National Coal Association from monthly reports to the Interstate Commerce Commission. The average cost per net ton for such coal for the entire country was $2.79; for the Eastern district, $2.85; for the Southern district, $2.34, and for the Western district, $3.09.

In comparison with March there is a decrease in these averages of 3c. per ton in the entire country; 1c. in the Eastern district; 7c. in the Southern district and 2c. in the Western district. These averages, however, when compared with those of April, 1924, show much larger differences. Thus for the United States as a whole there was a drop in the average of 40c. per net ton; in the Eastern district, 43c.; in the Southern district, 50c., and in the Western district, 22c. The term "cost," as used in connection with these figures, represents the invoice price paid by the railroads for the coal at the mine, plus freight charges paid, if any.

# Expansion of Statistics by N.C.A. Commands Widespread Attention; Weak Support from Union Fields

**By Paul Wooton**

Washington Correspondent of *Coal Age*

That prospects for thoroughgoing bituminous coal statistics never were brighter is the opinion of the staff of the National Coal Association and others who attended the convention in Chicago. The resolution concerning statistics hardly seems to convey the enthusiasm for the revival of statistical work that was indicated by the expressions of the individual coal operators in attendance. It reflects the thought of a conservative committee which believes in being slow and sure.

It will be recalled that the resolution adopted recited that the legality of collecting and disseminating trade information had been established by recent decisions of the Supreme Court and that a plan for the association's future statistical activities should be worked out by a committee and submitted to the Board of Directors. The executive secretary lost no time in choosing for this committee a list of operators especially familiar with the statistical needs of the industry. Some days must elapse before acceptances can be received and the announcement made. Some delay in getting the statistical work going will be occasioned because the Board of Directors will not meet until October.

There is little doubt, in view of the sentiment in evidence at Chicago, that the committee will advise the continuance of the statistical program which was just getting under way in 1920, when its progress was interrupted by the first of the trade statistics decisions. Some expansion of that program is probable but the policy will be to encourage the local associations, where needed, to strengthen their statistical work. From these various sources the National will recruit such figures as may be of countrywide interest.

The presence at the convention of C. P. White, of the coal division of the Department of Commerce, is an indication that the resources of the department can be counted upon for application to this program in so far as they are desired by the association. There already have been indications that the industry is desirous that the government continue the collection of production figures, an activity now likely to be conducted under Mr. White's direction in the Department of Commerce.

The convention served to emphasize strikingly that the National is not receiving the support from the union fields that it has reason to expect. Despite the fact that the preponderance of its support long has come from the non-union areas there has been no departure from the custom of awarding half of the offices and committee places to representatives of the union districts. This balance of control never has been disturbed and at this convention the association went to union territory for its president. In the selection of Morton L. Gould for that office the association chose a man who has been engaged uninterruptedly in the production of coal for thirty years. The scale of his operations has not been large, which means that he has kept in intimate contact with all the problems of production—experience frequently denied the presidents of larger companies.

No president of the National Coal Association has contributed more to organization than did the retiring president, S. Pemberton Hutchinson. Plans are in the making which will enable the association to continue to have the advantage of his active service.

There were encouraging membership additions at the convention and others have come in since. The large nonmember attendance at Chicago is thought to indicate the probability that further acquisitions may be expected.

Those in attendance liked the way in which the program was made up within the industry and the opportunities that were offered for discussion of the topics presented. There was general agreement that the program was one of the most successful ever staged by the association.

### Thirty-nine Organizations Present

The complete list of local associations and individual companies answering the roll call at the convention was: Alabama Fuel Association, Coal Operators' Association of Thick Vein Freeport Seam of Pennsylvania, Harlan County Coal Operators' Association, Hazard Coal Operators' Exchange, Indiana Bituminous Coal Operators' Association, Indiana Coal Producers' Association, Kanawha Coal Operators' Association, Logan Coal Operators' Association, New River Coal Operators' Association, Northeast Kentucky Coal Association, Northern West Virginia Coal Operators' Association, Operators' Association of Williamson Field, Pittsburgh Vein Operators' Association, Pocahontas Operators' Association, Somerset County Coal Operators' Association, Southern Appalachian Coal Operators' Association, Southern Wyoming Coal Operators' Association, Southwestern Interstate Coal Operators' Association, Tri-State Coal Stripping Association, Virginia Coal Operators' Association, Washington Coal Producers' Association, West Kentucky Coal Bureau, Winding Gulf Operators' Association; Chicago, Wilmington & Franklin Coal Co., Colorado & Utah Coal Co., J. K. Dering Coal Co., Doubleday Coal Co., Elk River Coal & Lumber Co., Gulf Smokeless Coal Co., Hillman Coal & Coke Co., Madeira, Hill Coal Mining Co., Miami Coal Co., Mt. Savage George's Creek Coal Co.; Rockhill Coal & Iron Co., Roundup Coal Mining Co., Sheridan-Wyoming Coal Co., Edward Soppitt & Sons, Spring Valley Coal Co. and Westmoreland Coal Co.

© Harris & Ewing

**Harry L. Gandy**

Re-elected executive secretary of the National Coal Association at its annual meeting, held at the Edgewater Beach Hotel, Chicago, June 17-19.

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## I. C. C. Receives Few Ideas for General Rate Revision

Few suggestions, and none of them from any large organization, have been received by the Interstate Commerce Commission in response to its request for ideas as to how it should proceed with the study of the freight rate structure and make readjustments, as it is instructed to do under the Hoch-Smith resolution adopted by the last Congress.

Indications are that most of the interested parties, including the Commission, are at a loss to interpret the resolution. It was opposed, before adoption, by the Commission and vigorously opposed by the National Industrial Traffic League, which represents the large majority of shipping interests of the country, the latter's opposition being based on the ground that the resolution was an entering wedge for political rate-making.

The Traffic League has made no suggestions, thus far, to the Commission. Neither have the carriers. The National Coal Association, which is deeply interested in rate readjustments, has adopted a policy of watchful waiting. There is a widespread feeling that an effort will be made when Congress meets again to repeal or amend the resolution.

The resolution declares that "it is hereby declared to be the true policy in rate making to be pursued by the Interstate Commerce Commission in adjusting freight rates, that the conditions which at any given time prevail in our several industries should be considered in so far as it is legally possible to do so, to the end that commodities may freely move." Many observers believe that to make flexible rates, such as this would appear to mean, would be impossible. The resolution further instructs the Commission to make a study of the entire rate structure to determine various matters and in readjustments to give "due regard" among other factors to comparative market values.

## Finds Miners' Homes Below American Standards

The women of coal miners' families, their employment status, employment opportunities, and home and community environment are the subject of a report just issued by the Women's Bureau of the U. S. Department of Labor. This report, which is an analysis of data collected by the U. S. Coal Commission, reveals that with the exception of lighting facilities, which were fairly good in miners' homes, this was generally speaking not only *not* the case but that the home and community resources in both company-owned and independent mining towns were too often far below what are termed American standards.

Especially conspicuous was the lack of adequate water facilities. Over eighty thousand dwellings in 811 communities were covered in the investigation. Of these little more than one-fifth had running water, about 3 per cent had a bathtub or shower, and less than 0.4 per cent inside flush toilets.

While the anthracite region was far in the lead in the number of dwellings equipped with running water, "running water in the house," the report points out, usually meant one faucet in the kitchen, and the prevailing rates for additional faucets were so high as to penalize in an illogical and unnecessary way the use of labor-saving devices. For instance, the miner's wife might carry all the water she needed from the faucet to the stove, the tub, or the sink, but if she used the same amount of water, drawing it through another faucet, or through a hose attached to the kitchen faucet, additional charge would be made.

The sewerage system in the great bulk of the mining communities was totally inadequate, company-owned bituminous camps showing the worst record in this respect, with only 4 per cent of them having complete systems.

In the matter of community resources, outstanding facts shown by the investigation were that the majority of miners' wives and daughters were living in regions strikingly devoid of facilities which are necessary in the recreation and improvement for women — public parks, reading rooms, libraries, rest rooms and girls' clubs—and that most of the institutions that are considered as playing an important part in American community life usually were lacking in mining camps distant from towns and were absent also from many of the independent communities.

In a communication addressed June 25 to James J. Davis, Secretary of Labor, by Harry L. Gandy, executive secretary, National Coal Association, the statement is made that the report is solely designed to prejudice public opinion against coal operators.

"It is quite possible, as the Department of Labor notes, that in some coal mining communities, there is a shortage of 'public parks, reading rooms, libraries, rest rooms and girls' clubs.' However, actual comparison of living conditions in coal mining communities, on the one hand, with living conditions in agricultural or industrial communities, on the other hand, favors the homes of coal miners and reflects credit on the personal efforts of coal operators to promote the well-being of the miners.

"Let me call your attention to the following statement made two months ago by the Acting Director of the U. S. Bureau of Mines on the occasion of the issuance of an order eliminating the term 'mining camp' from the lexicon of the Bureau: 'The Bureau believes the term "mining camp" gives the public an entirely incorrect impression of conditions prevailing at points where coal is mined; in other words, that it is not a true picture, inasmuch as established communities, complete and attractive homes, with excellent educational facilities and fine sanitary conditions are to be found where coal is mined. The coal operators of this country are to be complimented for the real interest and personal concern which they evidence in the physical, intellectual and moral welfare of the miners and their families.' "

**Big Men of the National Coal Association Convention**

At the left is Gov. D. R. Crissinger of the Federal Reserve Board; in the center Harry L. Gandy, executive secretary of the association, and at the right Gen. Herbert M. Lord, director of the budget. The two government officials were prominent on the program.

## Shipping Board Bids Are Low

Bids opened at New York on June 23 and June 24 by the U. S. Shipping Board for furnishing and delivering coal to vessels in New York harbor are considered low for the quality required. The coal called for must be guaranteed by the bidder to be equal to or better in analysis than the following: Maximum volatile, 23 per cent; minimum fixed carbon, 69 per cent; maximum ash, 8 per cent; maximum sulphur 1.5 per cent; minimum B.t.u., 14,450 dry coal. The coal must contain at least 30 per cent lump.

Bids for supplying the "George Washington" with 3,500 gross tons were as follows:—W. A. Marshall & Co., $5.93 t.i.b.; Seiler Coal Co., $6.30 t.i.b.; W. H. B. Haff, $6.11 t.i.b.; Russell Norton, $5.99 t.i.b. On a net ton basis f.o.b. mine the bids ranged, approximately, from $1.92 to $2.27 per ton.

On 1,200 gross tons for the freighter "Anaconda" the following bids were received: W. A. Marshall & Co., $5.76 t.i.b.; Imperial Coal Corp., $5.47 t.i.b.; W. H. B. Haff, $5.92 t.i.b.; Seiler Coal Co., $5.93 t.i.b. On a net ton basis the range is approximately $1.65 to $2.05 f.o.b. mine.

## Strikers Burn Mine Works And Blow Up Ferry

Violence again broke out June 26 in the Pomeroy Bend (Ohio) coal fields, where union miners have been on strike more than a year and where several coal companies recently resumed operations under the 1917 scale. The outer workings of one of the mines was burned, a river ferry and an automobile were dynamited and lesser disturbances took place.

Fifty deputies were put on guard at the mining properties last Saturday and Judge Miller made permanent the temporary injunction against picketing of the mines by union workers.

The burning of the outer workings of Mine No. 17 of the Pittsburgh Coal Co., near Racine, formerly known as the Thomas Mine, occurred in the early morning hours. The destruction was complete, forcing indefinite suspension of work and causing damage estimated at $50,000. About 150 miners were employed at the shaft.

A few hours previously the ferryboat on which most of the miners employed at the shaft are transported across the Ohio from their homes in West Virginia was dynamited and sunk.

Common Pleas Judge A. P. Miller last week granted a temporary restraining order against picketing of three mines of the Pittsburgh Coal Co. and one mine, No. 7, of the Stalter Essex Coal Co., which have been operating in the Pomeroy field under the 1917 scale. This action followed many threats of violence on the part of union miners and was the culmination of a number of acts of violence. Among these was the blowing up of a launch which transferred miners across the Ohio River and the burning of the tipple at Mine No. 5 of the Stalter Essex Coal Co. Judge Miller had received a letter threatening that in case of an injunction his home would be dynamited. The order named Lee Hall, president, and G. W. Savage, secretary of Ohio District No. 6 of the United Mine Workers, as well as Rich Campbell, local president; William Fennell, A. N. Bengel, Robert Marshall and about 200 miners in the Pomeroy field.

# United Mine Workers Plan Extension Of West Virginia Strike Area in Campaign to Unionize Entire State

Is the Baltimore agreement a pact between the United Mine Workers and the Northern West Virginia Coal Operators' Association or is it a joker? Is the agreement still in effect if the officers signed for the association and not for individual companies? Is there an existing agreement, if the members withdrew from the association to clear their legal skirts and the association peters out of existence quietly with the union miners holding the bag? Have the United Mine Workers lived up to their gentlemen's agreement to completely organize northern West Virginia, and if they haven't made good why is any part of the agreement binding, although this phase of the question was never reduced to writing?

These and many other questions are being raised as a result of the labor controversy which started last week as to who actually signed the Baltimore agreement and who did not. The argument was started by the United Mine Workers when the organization printed a page advertisement in Morgantown, Fairmont and Clarksburg, with sections of the contract. The advertisement asks the pertinent question, "shall the coal operators treat contracts with the United Mine Workers of America as mere scraps of paper?" Then the charge is made that the following concerns abrogated their contract: Consolidation, Hutchinson, Fairmont & Cleveland, Edna Gas, Brown, Blockey-Pittsburgh, Dawson, Rosehill, Fairmont Big Vein, Fairmont-Chicago, Pittsmont, the Virginia & Pittsburgh Coal & Coke Co., Bethelehem Mines Corporation, Clark Coal & Coke Co., Jamison Coal & Coke Co. and Soper-Mitchell Coal Co.

An attack has been leveled at Frank R. Lyon, vice-president of the Consolidation Coal Co., in the advertisement, for a statement he made that the miners of the company have petitioned to return to work.

### Clark Denies Contract Break

According to John A. Clark, Jr., president of the Northern West Virginia Coal Operators' Association, "the men who signed that agreement were coal operators, but they were not at the meeting to represent their companies. They were there as the scale committee of the Northern West Virginia Coal Operators' Association. They signed the agreement as members of that committee and not as representatives of their companies. Consequently, what Mr. Bittner designates as 'abrogation of contract' was merely dropping of those various companies from the operators' association. The agreement was not signed between the United Mine Workers and the coal companies. It was an agreement between the association and the union. It was binding only as long as the operators stayed in the association and as long as the miners remained members of the union."

This opinion, however, is at variance with the statement issued by Van A. Bittner, chief international representative of the United Mine Workers, who comments as follows:

"Of the twenty-four men representing the United Mine Workers who signed the Baltimore agreement, only one was a representative of the international union and that was Percy Tetlow. The other twenty-three were officers of District No. 17, West Virginia, and members of the scale committee who worked in various mines in northern West Virginia.

"Mr. Clark says relative to his signing the Baltimore agreement, 'My act was in the manner of a notary public. I affixed my name to the document which showed that an agreement on wages had been reached between the United Mine Workers and the Northern West Virginia Coal Operators' Asociation. The agreement was signed by the scale committee of the association and by myself as president of the association.'

"This statement made by the president of the Northern West Virginia Coal Operators' Association proves to every fair-minded man in our country that Mr. Clark's company and the other coal companies mentioned have certainly abrogated their agreement with the United Mine Workers. Since Mr. Clark in his statement fully substantiates the position of the United Mine Workers, I have nothing more to say except that the fight in northern West Virginia will be continued indefinitely."

### Non-Union Output Climbs

Non-union coal production in the 12½ counties of northern West Virginia totaled 5,045 cars in the first four days of last week. On an average 155 mines worked daily. A new daily production peak of 1,267 cars of non-union coal was established June 23. With open-shop mines producing 653 cars a new daily coal loading record was attained along the Monongah Division, B. & O., June 22. While non-union tonnage was holding firm last week the daily union loading was of a downward trend; 835 cars of coal was produced by union mines in the first four days of last week. Ten mines were working on a union basis.

Extension of the organization of the United Mine Workers into southern West Virginia is being seriously considered and according to reports preliminary arrangements were made for the proposed organization campaign at a meeting held in Charleston early last week. Further plans were made at a conference held in Philadelphia on Monday, June 29, attended by International President John L. Lewis, International Vice-President Philip Murray and International Secretary and Treasurer Thomas Kennedy, as well as W. A. Glasgow, chief counsel for the union, and attorneys Henry Warrum, T. C. Townsend and Earl E. Houck.

Definite plans were considered at the meeting for the issuance of a general strike call of all the non-union miners in the entire State of West Virginia.

### *Edmonton Miners Strike*

Coal miners of the Edmonton district in Canada voted on June 28 to strike on July 1. Their contract with the operators expired on the night of June 30. In some of the other districts of western Canada the men have accepted reductions in wages.

Especial attention will be given to the prosecution of the strike in Logan County. Just when this strike order will be issued was not definitely determined. That is a matter that will be left entirely in the hands of International President John L. Lewis.

A great number of miners in northern West Virginia who are working in non-union mines have informed the officers of the organization that just as soon as they receive a pay they will again join the ranks of the strikers. The conference in Philadelphia was intended to mark the beginning of the greatest drive the United Mine Workers has ever made to thoroughly organize the entire State of West Virginia.

The South Penn Coal Co., in the Scott's Run section, resumed operation under the Baltimore agreement last week, according to reports.

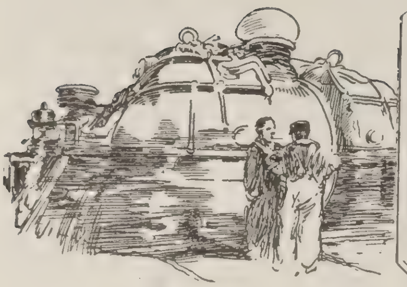
Toward the close of last week the Consolidation Coal Co. was producing 3.500 net tons of coal a day at the mines it was working, which include Owings, Columbia, Pinnickinnick, Carolina and Gypsy.

Ten thousand miners of eastern Ohio, Pennsylvania and the Panhandle section of West Virginia attended a large rally held at Bellaire Ball Park, at Bellaire, Ohio, Friday, June 26. The speakers were International Vice-President Philip Murray, Lee Hall, president, William Roy, vice-president, and G. W. Savage, secretary-treasurer of the Ohio miners. The meeting was held on the Ohio side of the river to escape injunctions, but was staged especially for the striking West Virginia miners.

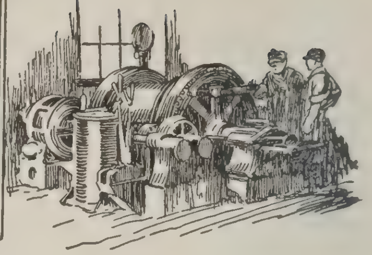
In federal court of northern West Virginia at Elkins, June 22, Federal Judge W. E. Baker withheld his decision on granting a temporary injunction to nineteen Panhandle coal companies against the United Mine Workers and continued in force for another 10-day period the temporary restraining order which he first issued June 2.

In a statement issued June 27 Van A. Bittner comments on the notice given by the Consolidation Coal Co. that it will evict union miners from its houses at Wyatt. Bittner says that the company threatens eviction suits unless the men return to work on the 1917 scale. "Coercion, intimidation and force are being used to compel the miners to sign petitions asking the company to reopen the mines," he adds, "notwithstanding the fact that the Consolidation Coal Co. has an agreement with the United Mine Workers."

Miners' mass meetings were held at Osage, Farmington, Rivesville and Kingmont on June 28, which were addressed by international representatives in the field.



# Practical Pointers For Electrical And Mechanical Men



## Small Welding Outfit for Bonding Also Makes Strong Air Line Joints

The use of electric welding equipment at some mines has only started but at others it is no longer limited to service inside the mine where tracks must be bonded. Modern repair shops find the electric welder particularly suitable for building up worn spots on machinery, making patches and securing bolts or nuts which might come loose in service.

Every once in a while one sees interesting examples which illustrate both the general utility of an electric welding outfit and the growing confidence placed in the kind of work it can do. Fig. 1 shows a picture of a T joint made out of sections of iron pipe. This T is in a 125-lb. compressed air line at the Bear Valley operation of the Williamstown colliery, owned by the Susquehanna Collieries Co., an anthracite producer.

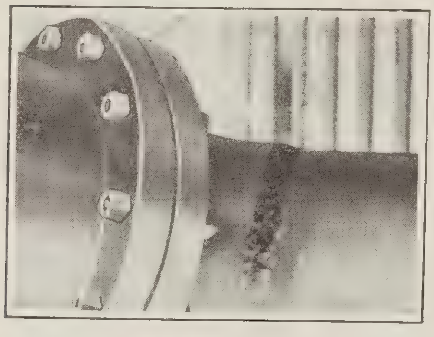


**Fig. 1—Home-Made T Connection**

This fitting was made by welding pieces of pipe with an electric track welding outfit.

**Fig. 2—No Reducer Necessary Here**

One piece of pipe was slipped into another and the joint made with an electric arc welding outfit.

This T stands between two large receiver tanks outside the compressor station. The main supply line thus is connected to both tanks which serve the air-driven equipment inside the mines.

Near the shaft where the air line passes into the mines it was necessary to use a smaller size pipe. Here again the electric welding outfit was used and a reducing flange was not necessary. The small pipe was entered into the large one and the joint securely welded as shown in Fig. 2.

When the line was put in service, tests were made on these joints by wiping them with oil. In this manner bubbles would indicate leaks. But there were no leaks and the joints have now been in service for several months.

Those who are not acquainted with the grade of work that can be done with a small welding outfit will no doubt be surprised to learn that both these jobs were accomplished with the usual type of welding outfit employed for applying rail bonds.

Fig. 3 shows this outfit in use at its regular job. Such a lightweight unit as this is easily transported. As men get a better knowledge of its general utility it comes into greater demand. E. J.

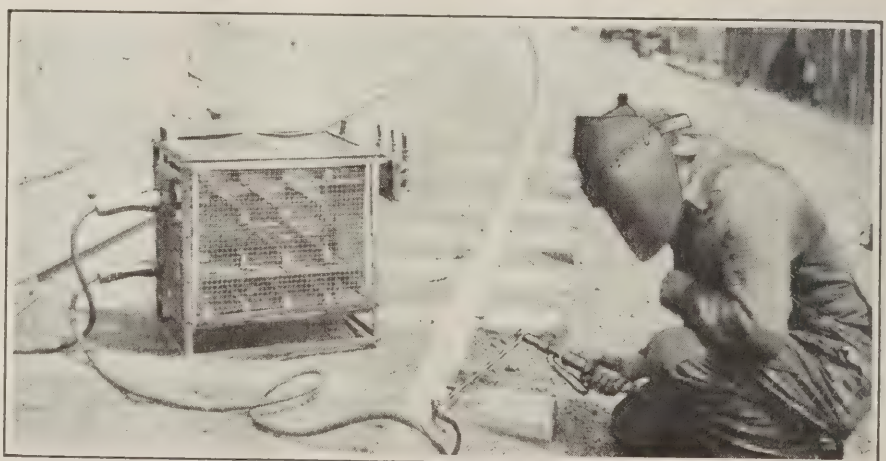


**Fig. 3—Electric Welding Machine Which Is Used to Make High Pressure Air Line Joints**

This isn't the only kind of work this outfit can perform. It is light and compact. The compressed air pipe joints used on a 125-lb. pressure line were made with this device. Sometimes it is used to apply bonds but frequently it is doing its bit repairing machine parts.

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## Illuminate Dangerous Spots

The fact that there are still plenty of opportunities to install electric lights around mine tipples is made evident by the accompanying illustration. This picture was taken in bright sunny weather from a point near the bottom of a coal tipple.

In the darkest part of the picture is a set of crushing rolls driven by means of a chain and sprockets. Unless properly guarded, such devices are dangerous. When a man steps from the sunlight to a position under this tipple it is almost impossible for him to see anything until his eyes adjust themselves to the shade.

There is a feeling at most mines that all outside lights should be turned off whenever there is any daylight. Consequently, lighting circuits are often designed with this idea in mind and no thought given to the arrangement of lamps. Often lights in dark corners, which should always be lighted during working

A Dangerous Place Is Often Made Safe by Light

Lights which should be turned on during bright sunny days, should not be placed on the same circuit as lamps which are needed only at night. Here is a spot that is dark even when the sun shines. Its lamps should be separately controlled from the mine yard circuit.

periods, are on the same circuit as mine yard lights. As a result, when the yard lights are turned off from a point controlling the whole circuit, the lights in the dark spots are out of service too. One small accident often costs more than a large number of lights. It pays to lay out circuits so that lights in dangerous spots can be turned on whenever they are needed.

## Drum-Controller Trouble Can Do Big Damage

Several days ago one of our mechanics called me up and inquired if I would help him out of a little trouble that he was having with a slip-ring motor controller operating a small mine hoist. The controller was of the hand-operated, rheostat type, with external grids. The motor was a 50 hp. wound-rotor machine with a 550-volt stator winding. The controller handled two wires of the three-phase circuit and thus was reversible. The break was in air, the frame of the controller was cast iron and the cover was sheet steel. The finger board was on the left side facing the cover.

The mechanic had dismantled the controller and filed all the segments and contact fingers. While it was disassembled, I tested the motor and control wiring and also the drum segments for shorts, open and grounds. The lead-sheathed cable leading to the controller from an oil circuit breaker was also tested. Everything showed "clear" with a 50,000-ohm magneto.

The controller was then assembled and the hoist engineer put the controller handle on what was presumably the first point. There followed a flash and a loud report similar to that caused by a "dead short" on a circuit carrying a large amperage. After seeing the action of the controller in operation we tested again with similar results. All circuits tested "clear."

I then made a careful examination of the controller and found that there were no adjusting screws in a number of the contact fingers and that the star-wheel pawl spring had been disconnected. The star-wheel pawl spring was fastened and adjusted but there were no finger adjusting screws, so we robbed the grid contact fingers and put them on the primary fingers. Of course this is allowable only in an emergency. Then the primary contacts were carefully adjusted. The switch was closed and the controller drum was set on one point. The hoist engine started smoothly and the contacts did not flash at all.

This trouble, which was simple, could have become a serious one and hard to locate, as I know of a number of controllers that are operating without any adjusting screws on the contact fingers. The fact that this particular controller handled heavy currents and broke in air, coupled with the fact that an arc travels upward, caused an arcing, short circuit across the primary contacts which burned the lid and wooden finger board of the controller. Another reason for the arcing was that the engineer could not locate the first point of the drum with any certainty, probably because of the absence of the star wheel, and he unknowingly caused slight arcing that started the main trouble.

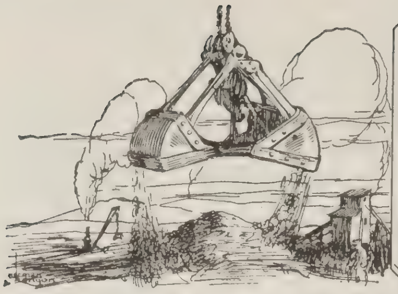
Careless maintenance of drum controllers and other switching devices has burned up more motors than any other one cause. The average electrician will solder all joints inside the motor and all lead wiring outside the motor and to the controller but will leave the controller with burned and pitted contacts and segments. This is almost equivalent to making an open circuit. Still he expects the controller to give perfect satisfaction. The controller operator often fails to oil the drum shaft until it is hard to turn and then, instead of oiling it, he will disconnect the star wheel spring, excusing himself by saying that it was so tight that he could not turn the controller handle.

GRADY H. EMERSON.

Acmar, Ala.

Electric Repair Shop Has Manufacturing Facilities

Efficient operation depends upon good machinery. This shop is equipped so that expert repairs can be done quickly. Thus the useful life of apparatus is greatly increased.



## Production And the Market

# Bituminous Coal Market Still Sluggish; Hard Coal in Summer Lull

Despite the belief of most authorities that consumption of bituminous coal has been well in excess of production since about the middle of February there is no sign of a dearth. On the contrary, soft coal continues to go begging just as it has been doing in recent months. Consumers seem to be indifferent to figures or arguments and continue to hold off purchases on the chance that prices will go still lower. The situation in the Midwest was further upset last week when over two hundred cars of smokeless arrived in Chicago on consignment. Prices have been slipping since and the bulk of it is still unsold.

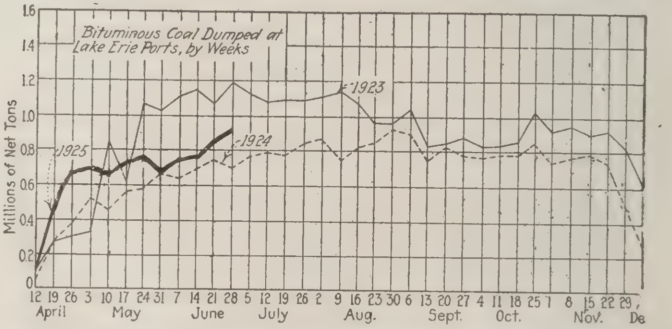
Western Kentucky suffers from overproduction and strip-mine competition, which have weakened prices. Favored with lake trade, some railroad contracts and scattered industrial demand, eastern Kentucky is busier and commands better prices. Business at the head of the lakes has run against a snag, consumers holding off for lower prices, which remain steady, however. Domestic business has fallen off in Utah, industrial demand being unchanged, though the outlook is somewhat brighter. The situation is somewhat better in Colorado, but in Kansas and the Southwest scarcely anything is moving.

### Cincinnati Trade Lacks Buoyancy

Buoyancy is lacking in the domestic market at Cincinnati, where chief interest centers in the lake movement. July circulars are being shaded, it is said, screenings being somewhat weaker. Southern Ohio holds its recent improvement in steam business, but eastern Ohio is very quiet. Pittsburgh fears the menace of Fairmont coal, which through recent declines can be brought in by rail at the price of the local product. Demand shows no pickup, however. Trade in New England and other Eastern markets is still flat.

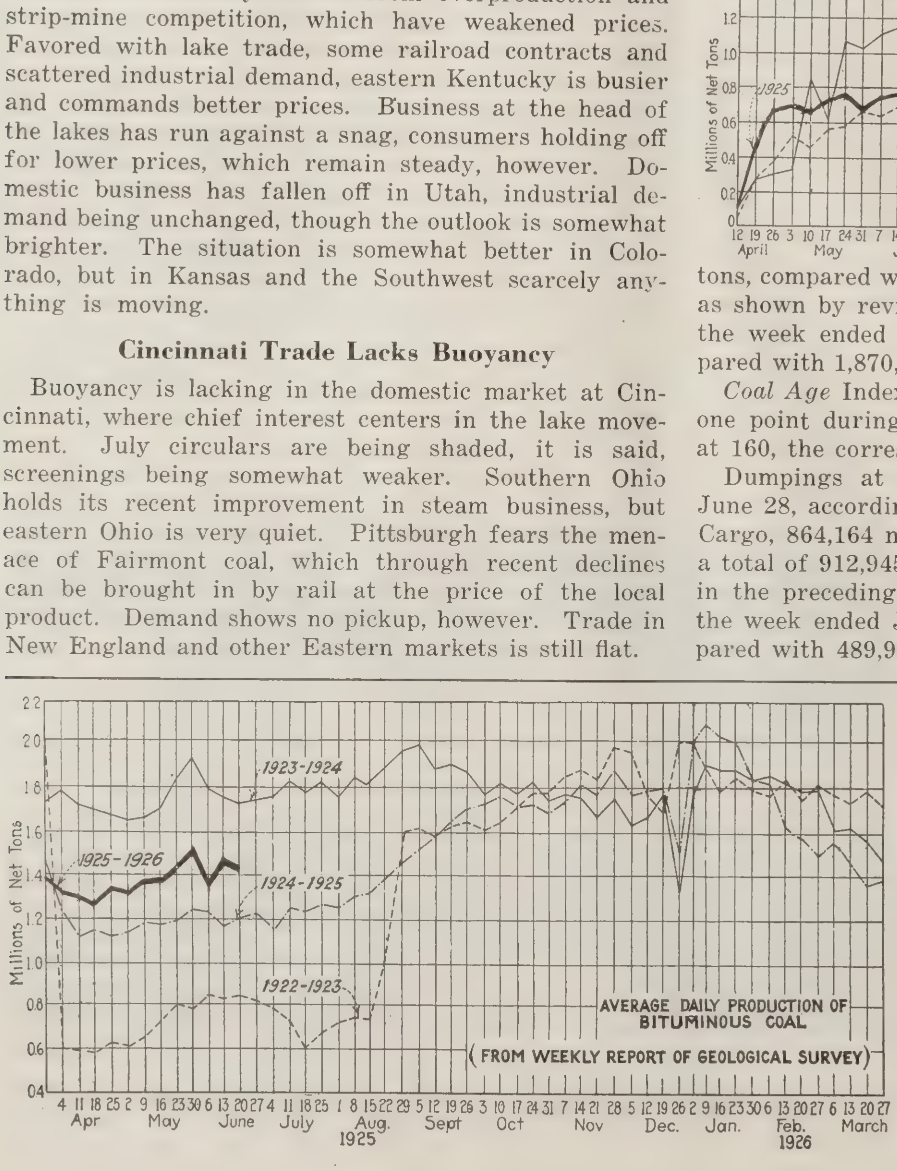
Trade in anthracite is marked by characteristic summer dullness, though it is probable that consumers will show more interest when news of the coming wage conferences spreads. Stove moves best, but independents are having trouble with chestnut. Egg is doing fairly well and pea is easy. Steam sizes, except barley, are hard to move. The companies are expected to add 10c. to the prices of the larger domestic sizes for July.

Bituminous coal output in the week ended June 20 is estimated by the Geological Survey at 8,434,000 net tons, compared with 8,621,000 tons in the previous week, as shown by revised figures. Anthracite production in the week ended June 20 was 1,788,000 net tons, compared with 1,870,000 tons in the preceding week.



*Coal Age* Index of spot prices of bituminous coal fell one point during the past week, standing on June 29 at 160, the corresponding price for which is $1.94.

Dumpings at Lake Erie ports in the week ended June 28, according to the Ore & Coal Exchange, were: Cargo, 864,164 net tons; steamship fuel, 48,781 tons—a total of 912,945 net tons, compared with 828,798 tons in the preceding week. Hampton Roads dumpings in the week ended June 25 totaled 447,290 net tons, compared with 489,944 tons in the previous week.



### Estimates of Production

(Net Tons)

| BITUMINOUS | 1924 | 1925 |
|---|---|---|
| June 6 | 7,615,000 | 8,375,000 |
| June 13 (*a*) | 7,385,000 | 8,621,000 |
| June 20 (*b*) | 7,434,000 | 8,434,000 |
| Daily average | 1,239,000 | 1,406,000 |
| Cal. yr. to date (*c*) | 222,164,000 | 223,148,000 |
| Daily av. to date | 1,533,000 | 1,537,000 |
| ANTHRACITE | | |
| June 6 | 1,846,000 | 1,674,000 |
| June 13 | 1,823,000 | 1,870,000 |
| June 20 | 1,823,000 | 1,788,000 |
| Cal. yr. to date (*c*) | 43,227,000 | 42,591,000 |
| COKE | | |
| June 13 (*a*) | 131,000 | 136,000 |
| June 20 (*b*) | 131,000 | 130,000 |
| Cal. yr. to date (*c*) | 5,879,000 | 5,103,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Trade Weakens Further

The Chicago coal market, instead of showing signs of improvement as the month draws to a close, has shown very definite evidences of weakness. Screenings from southern Illinois, central Illinois, Indiana and western Kentucky have slipped off from 5c. to 10c. a ton and more. The reason is found in that the industries have curtailed buying rather than any increase in production. The contract situation is still stagnant, with no signs of activity anywhere.

Operators are still oppressed by the thought that present price levels cannot net them much business in competition with non-union coals from western Kentucky, and that if they are to live reductions in the wage scale will have to take place. Those operators who still have the financial ability are concentrating operating energies on coal loaders and other means of producing cheaper fuel.

The domestic market continues to be uniformly unsatisfactory. The retail trade in Illinois, Iowa and Wisconsin refuses to be interested in coal at any price, confident that they can put off their fuel purchases for another month or two without the slightest possibility of an increase in cost. Whether or not they are right remains to be seen. The domestic situation in Chicago was badly upset last week and prices on smokeless mine-run were shot to pieces, owing to the fact that smokeless operators on the Virginian Ry. consigned two or three hundred cars of coal to Chicago. This coal arrived early in the week and today the bulk of it is still unsold, with prices slipping rapidly. It is anticipated that these operators will book a pretty heavy loss before the coal is out of the way.

The situation in southern Illinois shows no change. A few mines throughout Williamson and Franklin County are working from one to three days a week. Most of them are crushing coal for their steam contracts and not much domestic sizes are moving. Railroad tonnage continues light from the shaft mines although the strip mines seem to ship railroad coal and the bulk of the steam coal and some of them also are crushing mine-run. It is understood that the Missouri Pacific R.R. is arranging to put in some storage coal from mines on its line. There has been no change in prices.

In the Duquoin field conditions are much the same as they have been. Two mines are working and getting two and three days a week. No railroad tonnage is moving. In the Mt. Olive district there is practically nothing doing and the little coal that is produced is crushed to take care of screening contracts. Railroad tonnage in this district is light. The Standard field continues to work—a few mines here and there—a couple of days a week. There is little railroad coal moving out and a fair demand for steam sizes. Domestic sizes seem almost impossible to move. Prices are unchanged.

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | June 30 1924 | June 15 1925 | June 22 1925 | June 29 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.85 | $2.85 | $2.85 | $2.75@$3.00 |
| Smokeless mine run | Columbus | 2.20 | 1.85 | 1.85 | 1.75@ 2.00 |
| Smokeless screenings | Columbus | 1.30 | 1.30 | 1.30 | 1.25@ 1.40 |
| Smokeless lump | Chicago | 3.60 | 3.10 | 3.10 | 3.00@ 3.25 |
| Smokeless mine run | Chicago | 2.00 | 1.95 | 1.95 | *1.65@ 2.10* |
| Smokeless lump | Cincinnati | 3.85 | 2.85 | 2.85 | 2.75@ 3.00 |
| Smokeless mine run | Cincinnati | 1.80 | 1.85 | 1.85 | 1.75@ 2.00 |
| Smokeless screenings | Cincinnati | 1.10 | 1.25 | 1.20 | **1.20@ 1.30** |
| *Smokeless mine run | Boston | 4.30 | 4.25 | 4.25 | 4.15@ 4.40 |
| Clearfield mine run | Boston | 1.95 | 1.75 | 1.75 | **1.65@ 2.00** |
| Cambria mine run | Boston | 2.50 | 2.10 | 2.10 | *1.95@ 2.25* |
| Somerset mine run | Boston | 2.15 | 1.95 | 1.95 | *1.75@ 2.10* |
| Pool 1 (Navy Standard) | New York | 2.70 | 2.55 | 2.55 | **2.40@ 2.75** |
| Pool 1 (Navy Standard) | Philadelphia | 3.00 | 2.60 | 2.60 | 2.45@ 2.75 |
| Pool 1 (Navy Standard) | Baltimore | .... | 1.85 | 1.85 | 1.80@ 1.95 |
| Pool 9 (Super. Low Vol.) | New York | 2.20 | 2.00 | 2.00 | 1.85@ 2.15 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.20 | 2.00 | 2.00 | 1.85@ 2.20 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.85 | 1.75 | 1.75 | 1.65@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.85 | 1.85 | 1.85 | 1.75@ 2.00 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.85 | 1.70 | 1.70 | 1.60@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.65 | 1.60 | 1.60 | 1.55@ 1.65 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.55 | 1.55 | 1.45@ 1.70 |
| Pool 11 (Low Vol.) | Philadelphia | 1.50 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.40 | 1.40 | 1.35@ 1.45 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.50 | 1.50 | 1.40@ 1.60 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.55 | 1.50 | 1.50 | 1.45@ 1.60 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.45 | 1.45 | *1.30@ 1.45* |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.40 | 2.40 | 2.30@ 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.20 | 1.45 | 1.50 | 1.40@ 1.60 |
| Kanawha lump | Columbus | .... | 2.10 | 1.85 | 1.75@ 2.00 |
| Kanawha mine run | Columbus | .... | 1.40 | 1.40 | 1.35@ 1.50 |
| Kanawha screenings | Columbus | .... | 1.10 | 1.05 | 1.00@ 1.15 |
| W. Va. lump | Cincinnati | 2.25 | 2.10 | 2.30 | *2.00@ 2.25* |
| W. Va. gas mine run | Cincinnati | 1.40 | 1.45 | 1.50 | *1.40@ 1.60* |
| W. Va. steam mine run | Cincinnati | 1.40 | 1.40 | 1.40 | *1.25@ 1.40* |
| W. Va. screenings | Cincinnati | .85 | 1.10 | 1.15 | *1.00@ 1.25* |
| Hocking lump | Columbus | 2.45 | 2.15 | 2.15 | 2.00@ 2.35 |
| Hocking mine run | Columbus | 1.70 | 1.50 | 1.50 | 1.40@ 1.65 |
| Hocking screenings | Columbus | 1.35 | 1.30 | 1.30 | 1.20@ 1.40 |
| Pitts. No. 8 lump | Cleveland | 2.35 | 2.20 | 2.20 | 1.90@ 2.50 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.85 | 1.85 | 1.85@ 1.90 |
| Pitts. No. 8 screenings | Cleveland | 1.10 | 1.40 | 1.45 | *1.35@ 1.45* |

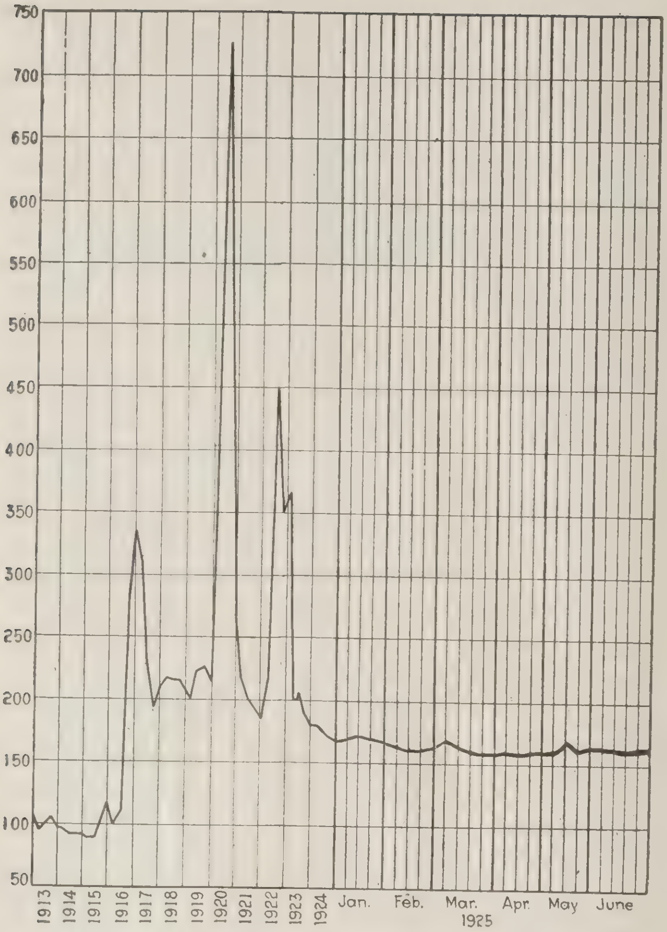
| Midwest | Market Quoted | June 30 1924 | June 15 1925 | June 22 1925 | June 29 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $2.75 | $2.60 | $2.60 | $2.50@$2.75 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.80 | 2.10 | 2.10 | *1.75@ 2.25* |
| Central, Ill. lump | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Central, Ill. mine run | Chicago | 2.10 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central, Ill. screenings | Chicago | 1.65 | 1.75 | 1.75 | 1.65@ 1.90 |
| Ind. 4th Vein lump | Chicago | 2.85 | 2.60 | 2.60 | 2.50@ 2.75 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.80 | 1.85 | 1.85 | *1.65@ 2.00* |
| Ind. 5th Vein lump | Chicago | 2.35 | 2.25 | 2.25 | 2.15@ 2.40 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.60 | 1.50 | 1.50 | 1.40@ 1.60 |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.25 | 2.25 | 2.25 |
| Mt. Olive screenings | St. Louis | 2.00 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.15 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.45 | 1.70 | 1.70 | 1.65@ 1.75 |
| West Ky. block‡ | Louisville | 2.00 | 1.50 | 1.50 | *1.25@ 1.50* |
| West Ky. mine run | Louisville | 1.60 | 1.15 | 1.25 | *1.00@ 1.25* |
| West Ky. screenings | Louisville | 1.25 | 1.15 | 1.05 | 1.00@ 1.15 |
| West Ky. block‡ | Chicago | 1.85 | 2.00 | 2.00 | 1.90@ 2.15 |
| West Ky. mine run | Chicago | 1.60 | 1.30 | 1.35 | 1.15@ 1.60 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.20 | 2.10 | 2.10 | *1.80@ 2.25* |
| Big Seam mine run | Birmingham | 2.10 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.20 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block‡ | Chicago | 2.10 | 2.25 | 2.25 | **2.30@ 2.65** |
| S. E. Ky. mine run | Chicago | 1.60 | 1.70 | 1.70 | 1.60@ 1.85 |
| S. E. Ky. block‡ | Louisville | 2.10 | 2.25 | 2.25 | *2.00@ 2.25* |
| S. E. Ky. mine run | Louisville | 1.55 | 1.50 | 1.55 | 1.35@ 1.75 |
| S. E. Ky. screenings | Louisville | .95 | 1.10 | 1.10 | 1.00@ 1.25 |
| S. E. Ky. block‡ | Cincinnati | 2.50 | 2.25 | 2.40 | *2.25@ 2.40* |
| S. E. Ky. mine run | Cincinnati | 1.45 | 1.45 | 1.55 | *1.25@ 1.75* |
| S. E. Ky. screenings | Cincinnati | .90 | 1.10 | 1.10 | 1.00@ 1.25 |
| Kansas lump | Kansas City | 4.50 | 4.00 | 4.00 | 4.00 |
| Kansas mine run | Kansas City | 3.50 | 3.00 | 2.85 | **3.00** |
| Kansas screenings | Kansas City | 2.50 | 2.60 | 2.60 | *2.50* |

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in **heavy type**, declines in *italics*.
‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | June 30, 1924 | | June 22, 1925 | | June 29, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ............ | $8.00@$8.85 | ............ | $8.10@$8.70 | ............ | $8.10@$8.70 |
| Broken | Philadelphia | 2.39 | ............ | 8.70@ 8.85 | ............ | 8.60 | ............ | 8.60 |
| Egg | New York | 2.34 | $8.75@$9.00 | 8.45@ 8.85 | $8.50@$8.75 | 8.45@ 8.70 | $8.50@$8.75 | 8.45@ 8.70 |
| Egg | Philadelphia | 2.39 | 8.80@ 9.60 | 8.80@ 8.85 | 8.70@ 9.30 | 8.50@ 8.70 | 8.70@ 9.30 | 8.50@ 8.70 |
| Egg | Chicago* | 5.06 | 7.86@ 8.00 | 7.83@ 7.90 | 7.86@ 8.50 | 7.44@ 8.18 | 7.86@ 8.50 | 7.44@ 8.18 |
| Stove | New York | 2.34 | 9.00@ 9.25 | 8.45@ 9.10 | 8.90@ 9.25 | 8.95@ 9.20 | *8.75@ 9.25* | 8.95@ 9.20 |
| Stove | Philadelphia | 2.39 | 9.15@ 9.80 | 8.85@ 9.00 | 9.30@ 9.65 | 8.95@ 9.10 | 9.30@ 9.65 | 8.95@ 9.10 |
| Stove | Chicago* | 5.06 | 8.17@ 8.30 | 8.13@ 8.23 | 8.22@ 8.70 | 7.92@ 8.10 | 8.22@ 8.70 | 7.92@ 8.10 |
| Chestnut | New York | 2.34 | 8.75@ 9.00 | 8.45@ 8.95 | 8.35@ 8.65 | 8.45@ 8.70 | *8.25@ 8.50* | 8.45@ 8.70 |
| Chestnut | Philadelphia | 2.39 | 8.85@ 9.70 | 8.80@ 8.85 | 8.70@ 9.55 | 8.60@ 8.70 | 8.70@ 9.55 | 8.60@ 8.70 |
| Chestnut | Chicago* | 5.06 | 8.00@ 8.13 | 8.08@ 8.13 | 8.14@ 8.35 | 7.69@ 8.00 | 8.14@ 8.35 | 7.69@ 8.00 |
| Pea | New York | 2.22 | 4.50@ 5.50 | 5.50@ 6.00 | 4.75@ 5.50 | 5.00@ 5.70 | 4.75@ 5.50 | 5.00@ 5.70 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | 5.50@ 5.75 | 5.00@ 5.40 | 5.50@ 5.75 | 5.00@ 5.40 |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 5.91 | 4.91@ 5.36 | 4.69@ 5.00 | 4.91@ 5.36 | 4.69@ 5.00 |
| Buckwheat No. 1 | New York | 2.22 | 2.00@ 2.75 | 3.00@ 3.15 | 2.00@ 2.40 | 2.50 | 2.00@ 2.40 | 2.50 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | 2.15@ 2.75 | 2.50 | 2.15@ 2.75 | 2.50 |
| Rice | New York | 2.22 | 1.50@ 2.15 | 2.25 | 1.75@ 2.00 | 2.00 | 1.75@ 2.00 | 2.00 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | 1.85@ 2.00 | 2.00 | 1.85@ 2.00 | 2.00 |
| Barley | New York | 2.22 | 1.00@ 1.50 | 1.50 | 1.40@ 1.50 | 1.50 | *1.35@ 1.50* | 1.50 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | 1.40@ 1.50 | 1.50 | 1.40@ 1.50 | 1.50 |
| Birdseye | New York | 2.22 | ............ | 1.60 | ............ | 1.60 | ............ | 1.60 |

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | June 29 | June 22 | June 15 | June 30 |
| Index | 160 | 161 | 160 | 166 |
| Weighted averaged price | $1.94 | $1.95 | $1.94 | $2.01 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke: 1913-1918," published by the Geological Survey and the War Industries Board.

Domestic movement of coal has not started in St. Louis. A little stuff is coming in, but it is not a factor in the local situation, with the exception of some apartment-house contract storage coal at below cost. Preparations are being made to put in school coal. Local wagonload steam is unusually quiet and carload steam is just active enough to keep the small amount of steam coal offered going. Country steam is quiet and country domestic active in spots. The Illinois business that is usually active about this time, seems to be going to east Kentucky coal entirely. In other parts of Illinois and Missouri the bulk of coal moving is from the western Kentucky field. No change in prices.

### West Kentucky Weak; Eastern Field Busy

Overproduction in western Kentucky and competition of strip-mine coal have caused further weakness. It is reported that $1.50 a ton represents the top of the market for best prepared coal and much is selling as low as $1.25, with some off-grade stuff reported as low as $1.10 a ton. Mine-run and screenings are reported at around $1@$1.25, with screenings stiffer as a result of lack of prepared orders.

Eastern Kentucky is in much better condition, with a range from $1 on screenings to $2.25 on 4-in. block, with just a little fine domestic block quoted at higher than $2.25, but without much movement. Eastern Kentucky is favored with lake business, some railroad contract business and scattered industrial movement, the mines being busier and getting a better price. Efforts to force June prices to $2.50 a ton on block were unsuccessful; the operator had to accept $2@$2.25 or leave his coal in the mine, as too many competitors were glad to accept the offered price.

Mine-run has been stronger than had been anticipated, gas and better grades bringing $1.35@$1.75. Egg and lump have been in very good demand at from $1.75 to as high as $2.10. Not much nut is produced, and this is selling at $1.50@$1.75, or at about the price of best mine-run.

### Northwest Trade Hits Snag

The coal trade is on the rocks again at the Head of the Lakes. Forty cargoes arrived at the local docks last week, of which five were hard coal, and fifteen are reported on the way from lower lake ports, but there is practically nothing going out from the docks at present. Buyers are holding back expecting a revision in prices and a general adoption of the 1917 wage scale before long.

On June 1 there was 2,848,892 tons of bituminous on the docks as against 3,118,722 at the same time last year. Of anthracite there was 436,354 tons as against 199,528 at this time last year.

Bituminous is not so plentiful as last year mainly because there was not a large stock on docks at the beginning of navigation, but hard coal is here because people will not buy, and what comes up remains here. The anthracite situation looks serious. There is no call for it at price levels now current. A big trade is expected in Pocahontas.

Prices of both hard and soft are steady, except that there is very little $7 Pocahontas left on the docks. Most of the docks are getting $7.50 for lump, stove, and egg at present.

At the Twin Cities soft coal is not moving to any extent. A quiet volume is moving for domestic and steam purposes, indicating no advance preparation of any tonnage. Steam buyers continue their waiting policy and seem likely to prolong it to the utmost. It is good as long as it lasts, and all the predictions of its downfall are but so many words—until something happens to either production or transportation.

The price schedule remains as it has been for some time, with little distress coal in the market most of the time and prices nominally as they have been; southern Illinois lump around $2.75; central illinois, $2.25; Indiana, $2.50; western Kentucky, $1.75; Hocking at the dock, $5.25, as before, and Youghiogheny, $5.75.

Summer dullness continues in the Milwaukee coal trade. Dock managers say that coal is going out very slowly just now, but they are looking for a rush of orders soon from dealers at interior points. During the past week cargo receipts totaled 95,600 tons—13,400 tons of anthracite and 82,200 tons of bituminous coal. This brings the total for the season thus far to 1,063,673 tons—305,855 tons of anthracite and 757,818 tons of bituminous coal.

### Prices Sag in West

Kansas shaft screenings, which for several weeks had been fairly firm at $2.75, have joined shovel screenings and crushed mine-run at $2.50. With the exception of some contract coal and a little for threshing, nothing is moving in the Southwest. There has been little storage, and no relief is expected from this source before late in July or in August. Operators and miners continue to dally with the subject of wage readjustments, but with little effect, except in Oklahoma, where all production is under the 1917 scale.

There has been little change in the situation in Colorado since last week. Some improvement is shown in consumption of slack by industries, but no betterment in the domestic trade for lump, nut and pea coal. Mines are operating about 2½ days per week, which accounts for the substantial decrease in output compared with a year ago.

Hot weather in Utah last week caused the domestic business to fall off considerably. Industrial demand for coal is about the same as it has been for the past two or three weeks, though the announcement that the Southern Pacific R.R. desired bids for 600,000 tons of mine-run annually is encouraging. It is thought that a bid of $2.50 per ton will be made. There is very little contracting at present outside of small ones, and storage orders are hanging fire. Prices remain as firm as ever and the labor situation is excellent.

### Buoyancy Missing at Cincinnati

Through its very lack of buoyancy and activity the domestic market is the most interesting of the Cincinnati list now. July prices on smokeless are going out on lump at $3, but it is an open secret that the spot market is more around $2.75 and good stuff can be had for that price, though this is the quotation on egg. High-volatile lump, after showing a disposition to seek an upward level, has fallen into lassitude. For a time in June it looked as if the market was \$2.25@\$2.50, but a fair quantity can be had now around \$2@\$2.25. Kentuckians are asking \$2.40 for July deliveries, but even their market on block sizes seems to be closer to \$2.25 than the new figures.

Most interest now attaches to the lake movement and with the steady grind on 2-in. and mine-run, some bolstering is necessary in filling out cargoes and for straight shipments by the lake people, who buy in the open market rather than on contract. Two-inch has a steady pull at \$1.65@\$1.75 with egg about 10c. higher. Steam mine-run while lagging a little still has a range of \$1.25@\$1.40 with the gas and byproduct bringing from 10c. to 20c. higher. Screenings have dropped a little. Too much "cats and dogs" on the market has caused a sagging lately but on other occasions there has been a rebound this season, so while lower grades can be picked up around \$1, generally speaking the spot market still remains \$1.10@\$1.15.

Retail business in Cincinnati is going into the new month without any advance in price. Smokeless lump is \$7.50; mine-run, \$5.75@\$6; bituminous lump, \$5.75@\$6.50; slack, \$4@\$4.25.

River business continues in fair shape with the stage running at a good depth. Most of the coal coming in is either for home or nearby delivery or for transshipment by rail. Stocking here has about reached its limit, unless there should be a tumble in prices in the next month that would make this course advantageous.

The slight improvement noticeable lately in steam circles in the Columbus trade still continues. Buying is more widespread although the greater bulk is spot business. Contracting is still in abeyance, as purchasing agents can fill their requirements on the open market for less money. There is still some distress coal on the market, but the tonnage has been reduced because shippers and producers are not sending out cargoes on consignment to such an extent as formerly. As reserves are being gradually reduced the tone is slightly improved and both producers and shippers believe that better things will develop soon.

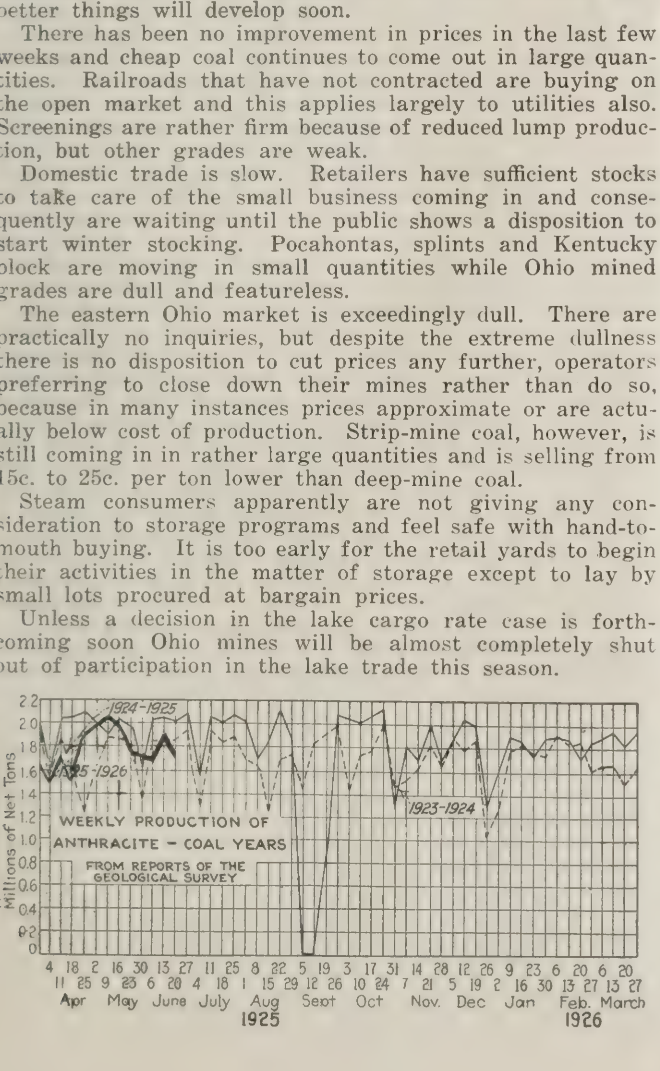
There has been no improvement in prices in the last few weeks and cheap coal continues to come out in large quantities. Railroads that have not contracted are buying on the open market and this applies largely to utilities also. Screenings are rather firm because of reduced lump production, but other grades are weak.

Domestic trade is slow. Retailers have sufficient stocks to take care of the small business coming in and consequently are waiting until the public shows a disposition to start winter stocking. Pocahontas, splints and Kentucky block are moving in small quantities while Ohio mined grades are dull and featureless.

The eastern Ohio market is exceedingly dull. There are practically no inquiries, but despite the extreme dullness there is no disposition to cut prices any further, operators preferring to close down their mines rather than do so, because in many instances prices approximate or are actually below cost of production. Strip-mine coal, however, is still coming in in rather large quantities and is selling from 15c. to 25c. per ton lower than deep-mine coal.

Steam consumers apparently are not giving any consideration to storage programs and feel safe with hand-to-mouth buying. It is too early for the retail yards to begin their activities in the matter of storage except to lay by small lots procured at bargain prices.

Unless a decision in the lake cargo rate case is forthcoming soon Ohio mines will be almost completely shut out of participation in the lake trade this season.



Output of eastern Ohio mines during week ended June 20 registered a decrease of 9,000 tons from the preceding week.

### Pittsburgh Sees New Menace

A new epoch in the Pittsburgh coal situation has been brought about by recent declines in Fairmont coal, a well-posted authority having figured that with rail shipment Fairmont coal can be brought to the city at the same delivered price as Pittsburgh coal.

Pittsburgh district production is only about 20 per cent of capacity. A good deal of it is coming in by river, and considerable is moved by truck.

A report was current last week, but cannot be verified, that a number of operators have had such success with plans that they count on opening quite a number of mines soon on an open-shop basis, with the scale of November, 1917. Market prices and demand show no change.

The Buffalo market continues quiet. Quotations are \$1.60@\$1.75 for Fairmont lump, \$1.40@\$1.50 for mine-run and \$1.25@\$1.40 for slack; \$2.25@\$2.50 for Youghiogheny gas lump, \$2@\$2.25 for Pittsburgh and No. 8 steam lump, \$1.30@\$1.50 for slack; \$1.75@\$2 for Allegheny Valley mine-run; Cambria County smokeless at curb, retail, \$6.

Uncertainty as to whether or not the agreement between the hard-coal operators and the miners will be renewed in September, and the possibility of a strike, is responsible for brisk buying on the part of Toronto householders. During the past two weeks a marked improvement has taken place in the hard-coal market, and this activity is expected to continue for some time. Supplies are coming in regularly, and no scarcity is anticipated in the near future. Prices are unchanged as follows: Anthracite, \$15; Welsh anthracite, \$16; coke, \$12; Pennsylvania smokeless, \$5.85; steam lump, \$6,40; slack, \$5.60.

### New England Market Weakens Further

If anything, the steam coal market in New England is more depressed than a week ago. Shippers are saying something about a better demand on the line and in the West with prices on prepared that compare with \$4.40 per gross ton, f.o.b. vessel at Hampton Roads for mine-run, but it is noticed that the same interests are keen to make spot sales of No. 1 Navy Standard Pocahontas and New River mine-run at \$4.25.

It is evident there is a good deal of whistling to keep up appearances, but the fact is that practically every agency takes its turn during each fortnight in having surplus coal at the piers that it is under pressure to move. So long as this condition prevails there will be few indications of firmness and fewer sales at the \$4.40 extreme price that any first grade coal can now command.

On cars Boston receipts continue light, a circumstance that favors rehandling factors with facilities of their own. Several sales of 500-ton and 1,000-ton lots in the past few days have been at \$5.35, and it is generally understood that one large buyer was obliged to pay this figure for delivery spread over three months, high-grade low-volatile mine-run being the coal that was sought for power-house use.

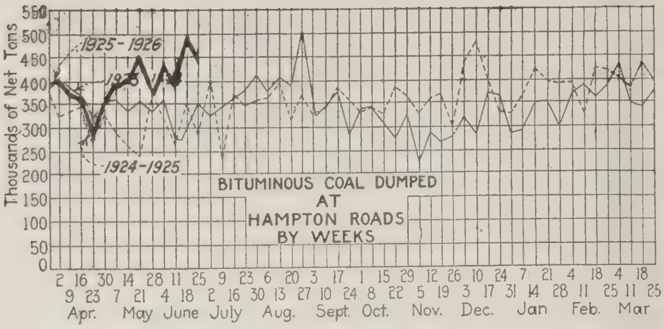
At Providence, R. I., about the same basis prevails, although a few factors are getting \$5.40@\$5.50 there for special coal that is guaranteed to be mine-run. So much nut-and-slack has been worked off this season that buyers are becoming insistent that they be supplied with what they have been accustomed to buy.

Owing to public statements made by state fuel officers since June 15 there has been better request at retail for anthracite, and this has had a favorable effect also upon consumers who the past year or so have used bituminous for ordinary household uses.

All-rail from central Pennsylvania the steam-coal traffic is in no wise improved. Shutdowns are spotted over a wide area, and no one is in position to say when or what the end will be.

### New York Trade Dull but Optimistic

The New York market for soft coal remains dull, buying is slow and where ten cars formerly was the minimum order, one car is now taken, with frequent requests that it be rushed. Consumers evidently are getting to the point where they will soon be forced to buy heavier, as inquiries are more numerous.



There is not much encouragement among the shippers although some optimism is found occasionally. Better buying is looked for by the end of July or early August.

The few bids received by the U. S. Shipping Board for bunker supplies do not indicate that the market is overcrowded, as the prices submitted are in keeping with open-market conditions.

Official records indicate that soft coal is on the upgrade, but it is difficult to discern this by observing the Philadelphia trade. The increase, however, is not such as to create any air of activity. Production of non-union coal has increased until it is doubtful if any considerable quantity of union coal is coming here.

Intimations are that once the anthracite proposition is settled trouble can be looked for from the union in the soft-coal region.

There was something of a stir in slack last week. Buying seemed to stop almost simultaneously from a number of large concerns usually interested. For a while shippers expected to have coal on their hands, but it was almost as quickly absorbed by other interests, without the least semblance of a break in prices, and now all buyers seem to be back in the market for as much as ever.

The Baltimore coal trade is beginning to wonder when the promised prosperity is to begin. Consumption is not up to the mark, and coal buying of every kind is on a hand-to-mouth basis. In the past month there has been no improvement in the situation either as to demand or prices. First-class coals are still obtainable in almost any quantity at prices so close to actual production cost that there is little in the business for anyone. The export situation fails to show the activity that marked the month of June in some other years, although there were two shipments last week.

The market at Birmingham is very quiet. Inquiry is light and bookings are pretty well restricted in the spot trade to a few cars for prompt shipment. There are few new contracts being made, most all agreements negotiated being renewals. Industrial demand is on about the same scale it has been for several weeks, with the exception that power companies are consuming an increasing amount as the dry weather continues to make the hydro-electric plants less efficient to meet power requirements. The Western Alabama Railroad bought about 48,000 tons of Mary Lee washed nut coal to be delivered through the next twelve months. Bunker trade is reported quiet and featureless.

Domestic conditions show very little improvement. High-grade coals are moving fairly satisfactorily on contracts, but there is some surplus available for the open market, which is being disposed of, but not without some effort.

Quotable prices on steam grades have not changed in the past week, and all domestic grades have maintained stable schedules with the exception of the cheaper qualities of lump and other sizes, which always sell off during dull periods. Big Seam lump can be bought for $1.80@$2.25 mines at present. The schedules on domestic coal will advance July 1, Carbon Hill lump going to $2.95; Cahaba, $3.85@$4.60; Black Creek, $4.10; Corona, $3.20; Montevallo seam, $4.35@$5.10 per net ton mines.

Production is running around 340,000 tons per week, mines operating on a basis to meet anticipated trade requirements to a more marked extent than before during periods of depression.

### Hard-Coal Business Disappoints

While the anthracite trade at New York is not totally flat there is no great activity. Coal is moving in fair shape but there is not the "pep" to the buying that dealers expected in view of the wage negotiations about to begin. It is expected, however, that the publicity attending the wage conferences will have a wholesome effect on consumers.

There is no delay in moving company coals but independent producers find it difficult at times to keep all sizes going. The greatest difficulty is with chestnut, which continues to pile up and at times causes distress. Retail dealers will not pay more than company prices unless in need of the size wanted.

It is expected that the line companies will add the usual 10c. per ton to their June prices for July, but no official announcement has been made.

Demand for coal at Philadelphia has declined further and the consumer seems to have eliminated himself entirely as a factor.

The operators have had difficulty in moving their production, even though it has been lessened by shortened working time. Some of the independents have tried to move blocks of prepared coal at a price concession, but have met with very little success, principally because most dealers are filled up.

Due to the change in sizes some dealers are figuring that the demand for pea is going to be very light and are utilizing some of the storage space usually taken by the small size, to accumulate a nut stock.

Steam sizes are still difficult to care for and considerable independent coal is selling off price. The call for barley is good, but it does not take up the production, and the other sizes are even slower than that. Large users have not begun to store up in case there is a suspension.

It is taken for granted that the companies will add the usual 10c. for July except on pea and smaller.

Baltimore hard-coal dealers find business slow—delayed because customers either have not the money to lay out for coal on storage or are unwilling to lay out money for such fuel. Retailers are still uncertain what July wholesale prices are to be, although it is likely that operators will increase prices 10c. per ton. It seems not at all unlikely that July retail prices will remain the same as they were for June.

The Buffalo anthracite trade is about as close to a standstill as it ever is. Dealers say that they have never sold so little during the open season as they are selling now and they look for a slow movement all summer. The lake trade is still moderate in volume. Shipments for the week were only 44,900 tons, of which 34,400 tons cleared for Duluth and Superior and 10,500 tons for Chicago. Lake freight rates continue at 55 to 60c. to Chicago and 40c. to Duluth and Superior.

Some of the docks here are running pretty slow as coal does not move readily from the upper lake docks.

### Inquiries Light for Connellsville Coke

The merchant furnace at Standish, N. Y., making low-phosphorus pig iron, has contracted for Connellsville coke for third quarter. All that is stated positively about the price is that it lay between $3 and $3.25. As particularly good coke is required there is no indication that standard furnace coke could not be bought at $3 for the quarter, this having been the price in several contracts. In fact, it is intimated that for July, and perhaps for July and August, $3 could be shaded a trifle. There is no test, however, as there is no inquiry in the market. Some recent inquiries have been withdrawn, as the inquirers have concluded not to run their furnaces.

The spot furnace coke market remains at $2.75@$2.85, being very narrow in point of turnover.

Standard foundry coke remains at $3.75@$4.25, with sales light, chiefly at close to the lower figure. Some 48-hour coke has been going for foundry use for weeks past at $3.50 or thereabouts.

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## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended June 13, 1925 | 987,196 | 157,559 |
| Previous week | 994,874 | 151,566 |
| Week ended June 14, 1924 | 902,592 | 138,240 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| June 14, 1925 | 313,494 | 117,496 | ....... | ......... |
| June 8, 1925 | 318,805 | 125,785 | ....... | ......... |
| June 14, 1924 | 362,961 | 169,133 | ....... | ......... |

# Foreign Market And Export News

## British Coal Market Marks Time Pending Wage Settlement

Business in the Welsh coal market has perked up a little since the Whitsun holidays, but is still very bad. There are now 5,000 fewer miners at work in Wales than three weeks ago and production is still in excess of demand. Coal salesmen are all out to prevent further pit stoppages but cannot get their wagons cleared. Anxiety regarding a national strike has somewhat abated, so that buyers are waiting for prices to drop further before placing orders; they also hope to take advantage of any revision in the wage agreement.

In the face of German competition there is no chance of prices rising any further and salesmen are making concessions to immediate buyers so as to clear their wagons, though no reductions are obtainable on later deliveries. Prices have dropped 3d. to 6d. and buyers are able to get a further 3d. to 6d. concession for immediate delivery.

Notices have been given at another pit to 350 men, though one of the Merthyr collieries is to be reopened, giving employment to 900 of the former 2,500 employees.

The Newcastle market is slightly better as far as inquiry is concerned, though there is no improvement in contracts actually placed. There is little inquiry for forward business, as buyers seem to be awaiting the outcome of the present wage trouble. Notices have been given to the men at four important collieries, at another, work is continued from day to day only, and at another the men have divided the work by working alternate weeks.

There are one or two contracts out for gas coals up to 8,000 tons at 19s. 4½d. per ton c.i.f., but otherwise there is no business.

Output by British collieries in the week ended June 13, a cable to *Coal Age* states, totaled 4,980,000 tons, compared with 3,000,000 tons in the previous week.

### French Coal Market Almost At Standstill

In the French coal market both industrial and home fuels have hardly any demand and stocks are accumulating at the mines. And clearances will not be quickened by the fact that traffic on the waterways is virtually at a standstill.

The question of salary is still pending. After having conferred several times with the public authorities, the North and Pas-de-Calais mine owners have decided to grant their men up to June 30, an increased rate of 20 per cent on the prime of high cost living (instead of 40 per cent up to May 15) conditionally on the immediate institution of a reduced freight tariff on the Nord, State and Orleans Railways, for the transport of coals to the west of France, and on the re-establishment of import licenses for German coals, in order to avert being swamped by German fuels.

From May 1 to 23, the Office des Houillères Sinistrées received from the Ruhr 407,800 tons of indemnity fuels, including 178,000 tons of coal, 207,700 tons of coke, 22,100 tons of lignite briquets, a daily average of 17,700 tons.

In the first ten days of June, the O.R.C.A. received from the Ruhr 87,353 tons of indemnity coke. The price is unchanged.

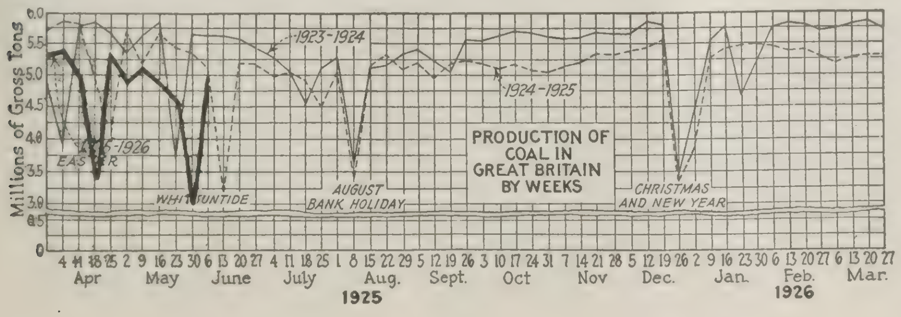
### Seasonal Dullness Prevails At Hampton Roads

The market at Hampton Roads was weak last week, with Canadian shipments falling down somewhat and other foreign business negligible. Bunker trade was temporarily slack, the bulk of shipping failing to call for coal.

Inquiries were rather dull and a seasonal slackness appeared to have settled on the trade. A fair supply of coal was on hand at the piers, and some cargoes were being offered below the market in distress.

### Belgian Demand Better

The general situation in the Belgian coal market shows no change, but there is some difficulty with regard to clearances. Demand, however, is slightly better, and as production in the Center and Charleroi Basin is much reduced stocks are being drawn upon. In the Liége region stocks remain very high. With the rise of sterling competition from the British side is less pressing.



### Export Clearances, Week Ended June 27, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Canada: | |
| Br. Str. Manchester Spinner, for Quebec | 7,179 |
| Br. Str. Hesione, for Montreal | 6,149 |
| Br. Str. Rose Castle, for Quebec | 10,553 |
| Br. Str. Philip T. Dodge, for Three Rivers | 6,712 |
| Br. Str. Daghild, for Quebec | 11,374 |
| For Nave Scotia: | |
| Br. Str. Kamouraska, for Sydney | 7,400 |
| Amer. Schr. Jean, for Yarmouth | 1,301 |
| Amer. Str. Hampden, for Halifax | 7,523 |
| Br. Str. Twickenham, for Sydney | 7,546 |
| For Newfoundland: | |
| Br. Schr. Jean McKay, for Grand Bank | 337 |
| Nor. Str. Thorgerd, for Humbermouth | 3,676 |
| For Brazil: | |
| Br. Str. Roquelle, for Rio de Janeiro | 5,400 |
| For France: | |
| Fr. Str. P. L. M. 22, for Rouen | 8,041 |
| Fr. Str. P. L. M. 27, for Rouen | 8,031 |
| Br. Str. Bankdale, for Marseilles | 5,004 |
| For British West Indies: | |
| Amer. Schr. Lieut. Sam Mengelm for Salt River | 1,161 |
| For Canal Zone: | |
| Amer. Schr. Achilles, for Cristobal | 12,058 |
| Amer. Barge Darien, for Cristobal | 7,276 |
| For West Africa: | |
| Ital. Str. Enrichetta, for Dakar | 7.251 |
| For French West Indies: | |
| Br. Str. Gibraltar, for Fort de France | 6,559 |
| For Italy: | |
| Ital. Str. Labor, for Genoa | 5,913 |
| Ital. Str. Concordia, for Porto Ferrajo | 9,533 |

FROM PHILADELPHIA

| | |
|---|---|
| For New Brunswick: | |
| Br. Schr. Nettie C., for St. Johns | —— |

FROM BALTIMORE

| | |
|---|---|
| For Canada: | |
| Nor. Str. Marie Nielsen, for Halifax | 2,061 |
| Br. Str. Penrose, for Levis | 5,913 |

### Hampton Roads Pier Situation

| N. & W. Piers, Lamberts Pt.: | June 18 | June 25 |
|---|---|---|
| Cars on hand | 1,498 | 1,388 |
| Tons on hand | 92,947 | 83,752 |
| Tons dumped for week | 169,755 | 126,653 |
| Tonnage waiting | 22,000 | 15,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 1,332 | 882 |
| Tons on hand | 93,500 | 52,250 |
| Tons dumped for week | 83,460 | 94,666 |
| Tonnage waiting | 8,657 | 4,728 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 3,108 | 3,187 |
| Tons on hand | 161,270 | 163,325 |
| Tons dumped for week | 184,235 | 178,047 |
| Tonnage waiting | 12,260 | 7,370 |

### Pier and Bunker Prices, Gross Tons

PIERS

| | June 20 | June 27† |
|---|---|---|
| Pool 1, New York | $5.40@$5.75 | $5.40@$5.75 |
| Pool 9, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 10, New York | 4.50@ 4.65 | *4.50@ 4.60* |
| Pool 11, New York | 4.50@ 4.65 | *4.25@ 4.50* |
| Pool 9, Philadelphia | 4.65@ 4.90 | 4.65@ 4.90 |
| Pool 10, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 11, Philadelphia | 4.25@ 4.30 | 4.25@ 4.30 |
| Pool 1, Hamp. Roads | 4.20@ 4.35 | *4.25* |
| Pool 2, Hamp. Roads | 4.10 | 4.10 |
| Pools 5-6-7, Hamp. Rds. | 4.00 | 4.00 |

BUNKERS

| | June 20 | June 27† |
|---|---|---|
| Pool 1, New York | $5.65@$6.00 | $5.65@$6.00 |
| Pool 9, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 10, New York | 4.75@ 4.90 | *4.75@ 4.85* |
| Pool 11, New York | 4.50@ 4.75 | 4.50@ 4.75 |
| Pool 9, Philadelphia | 4.80@ 5.05 | 4.80@ 5.05 |
| Pool 10, Philadelphia | 4.60@ 4.80 | 4.60@ 4.80 |
| Pool 11, Philadelphia | 4.45@ 4.65 | 4.45@ 4.65 |
| Pool 1, Hamp. Roads | 4.35 | *4.30* |
| Pool 2, Hamp. Roads | 4.20 | 4.20 |
| Pools 5-6-7, Hamp. Rds. | 4.10 | 4.10 |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | June 20 | June 27† |
|---|---|---|
| Admiralty, large | 25s.6d. | **25s.6d.@ 26s.** |
| Steam smalls | 15s. | 15s. |
| Newcastle: | | |
| Best steams | 16s.9d. | 16s.9d. |
| Best gas | 18s.3d. | 18s.@18s.6d. |
| Best bunkers | 16s.6d. | 16s.6d. |

†Advances over previous week shown in **heavy type**; decline in *italics*.

# News Items From Field and Trade

## ALABAMA

The Tennessee Coal, Iron & Railroad Co. has under consideration extensive improvements and betterments at its No. 8 colliery, near Fairfield, which will include the installation of a long conveyor belt for carrying the washed coal from the mine to the byproduct coke plant, and other modernization work, the details of which have not been announced.

The Deepwater Coal & Iron Co., with headquarters in Jasper, will begin the extensive development of its coal and ore properties in Jefferson, Walker and other counties in the mineral district at an early date, according to a recent statement by L. B. Musgrove, executive head of the corporation, which was organized several years ago with a capitalization of $15,000,000.

## ARKANSAS

The W. J. Francis Coal Co., Bates, has put on a night crew to fill its contract for coal with the Kansas City Southern R.R. The mine was closed for five years until recently.

More than 1,000 union coal miners marched June 26 from Ozark to Russellville, as a peaceable demonstration against any mine operations in the Arkansas fields except under the terms of the 1924 wage agreement. Four Arkansas mines in the Spadra field now are operating on an "open shop" basis. A similar demonstration last week was followed by one mine resigning the 1924 contract after announcing it would operate under the 1917 wage scale.

## COLORADO

The Moffat Coal Co., which has long been operating extensive bituminous coal mines near Oak Creek, is making preparations to start work in earnest upon the development of its anthracite property, known as the Crawford tract, in the Elkhead district, 22 miles northwest of Steamboat Springs, where preliminary work has been in progress for the past two years. The Moffat company will this summer establish an extensive camp and push development work, to have a mine open and ready to ship coal by the time the Moffat tunnel is completed next year.

## ILLINOIS

The Springfield District Coal Mining Co. has decreased its stock from $1,000,000 to $50,000.

Replacement of the tipple and surface plant will be completed about July 15 at Industrial Mine No. 18, Sesser. The plant, including all buildings, was totally destroyed by the tornado that passed over southern Illinois March 18.

The Spring Valley Coal Co., Spring Valley, has decreased its capital stock from $2,500,000 to $500,000.

The Majestic Mine, owned by the Equitable Coal & Coke Co., Duquoin, has closed down for repairs, including the retimbering of the main shaft.

The Buckley Coal Co. has closed a transaction with John Bontsche, Peoria, by which it will assume control of Mine A of the Citizens Coal Co., at Springfield, for a period of ten years. The mine, located just west of Springfield, has been closed down for some time, but will be reopened in a short time. The Buckley Coal Co., composed of George W. Schwaner, Edward H. Buckley and Carl H. Elshoff, also operates the Cantrall mine. The A mine of the Citizens' Coal Co., which has been taken over by the Buckley company, is generally considered one of the best equipped in the Springfield territory. It has an output of 2,000 tons daily. The company has entered into contracts and hopes to have the mine in operation practically all of the time.

Arthur Williams, Oswald Thomas and Robert Bartham have purchased a coal mine near St. Augustine, seven miles from Abingdon, which they will operate.

It is stated that the Bush Company contemplates the sinking of a new coal shaft on its land about six miles east of Zeigler.

The Assumption Coal & Mining Co., Assumption, has cleaned its mine and will begin to hoist coal within a few days. The company operates two mines at Pana, and one at Moweaqua, both of which are near Assumption.

## INDIANA

The Joan Coal Co. property, at Riley, has been deeded to M. E. Lowish, of Indianapolis, by J. W. Marby, president of the company. The coal property was deeded in an exchange of real estate.

The Keeley Coal Co. of Dugger, Ind., has filed a certificate of final dissolution with the Secretary of State.

J. B. Orr, coal operator, and Oren M. Ragsdale were appointed receivers for the Vandalia Coal Co. by Judge Mahlon E. Bash, June 19 in probate court. Bond was fixed at $25,000. The assets of the coal company comprise chiefly a number of coal mines near Sullivan valued at $5,000,000. The suit for receivership was brought by Alfred M. Ogle and Harold T. Dyer, stockholders in the company, who said that although the company was solvent, it was unable to operate and meet its obligations in the ordinary course of business.

The Big Four Coal Co., New Albany, has filed a preliminary certificate of dissolution.

A deal representing an investment of more than half a million dollars has just been completed by the United Electric Coal Co. It is said that the deal involves 2,500 acres of mineral land lying east of Farmersburg, in Jackson township, and 1,400 acres in the southern part of Vigo County. The purchasers contemplate the establishment of a large strip-mining enterprise. Nearly 1,200 acres of the coal land has been purchased in fee simple and on 1,300 acres the coal has been purchased outright, with option to buy the surface. One-half of the $500,000 represented in the deal will be expended for the coal, while the balance will be spent in equipping the large strip-mining plant on the new holdings.

## IOWA

The Riverville coal mine, near Albia, has been closed indefinitely, probably for the summer. Another mine, the Hocking, was closed April 1. The two mines employed 600 men. The Gold Goose mine has reduced output to one-fourth because of floods from recent rains.

James Mitchell, Knoxville, has been named a member of the board of examiners of mine inspectors of Iowa, succeeding the late John Caldwell.

## KANSAS

One hundred and two men on seventeen teams representing the largest mines in Kansas participated in the seventh annual state first-aid and mine-rescue meet, at Pittsburg, June 13. A team from No. 20 mine of the Western Coal & Mining Co., at Arma, with Captain Louis Trego at the helm, won first place with a perfect score of 100 per cent. Two teams tied for second honors, and the flip of a coin gave second place to the Jackson-Walker Coal & Mining Co.'s team, and third to the Dittman-Wachter Coal Co.'s entry. Both scored 99½ per cent. All but two of the teams scored more than 90 per cent, the lowest average being 84¾ by a team with only four weeks' training. The two teams placing highest will represent Kansas in the international mine safety meet at Springfield, Ill., in September.

## KENTUCKY

Announcement was made at Frankfort on June 18 that the Workmen's Compensation Board had increased the basic compensation insurance rates for underground coal mining to $4.57 instead of $3.75 and minimum $3.72 instead of $2.85.

The Thrifty Household Coal Buyers Association, Lexington, capital $10,000, has been chartered by W. McC. Johnston, D. C. Johnston and J. T. Johnston.

A. H. Stepp, formerly manager of the Louisville office of the Southern Coal Co., who was succeeded a few weeks ago by Emore Manning, has returned to his old home at Birmingham, Ala., where he plans to re-enter the coal business.

Under foreclosure action J. B. Torbett, former owner of the Phœnix Coal Mining Co., Drakesboro, recently took back the mining plant, the buyers failing to meet their notes. The property has since been sold to the Potter interests of Nashville, controllers of the Nashville Coal Co., who on June 10 started the plant operating on a nonunion basis. This plant was the only one that tried to operate on a union basis last year following the strike in western Kentucky. A few months of steady losses resulted in its being closed down. There isn't a union operated plant in the western Kentucky field today.

The Universal Coal Co., Owensboro, acquired the holdings of Jennings Coal Co., including about 200 acres of land, at Basket, the early part of June.

State Senator James R. Rash, of Madisonville, who is connected with the St. Bernard division of the West Kentucky Coal Co., has announced that he seeks re-election. While opposing coal tonnage taxation, Mr. Rash favors legalized betting on races and voted that way in the last Legislature. Unfortunately coal tonnage taxation and the question of legalized betting are being linked as the two big issues before the legislature.

The Consolidation Coal Co. recently filed suit against the Kentucky State Tax Commission, seeking an order to prevent the commission from increasing tax assessments for Letcher County beyond totals certified to by the County Board of Supervisors.

James R. Rash, prominent coal operator of Madisonville, former head of the St. Bernard Mining Co., now with the West Kentucky Coal Co., which absorbed the St. Bernard, has announced his candidacy on the Democratic ticket for re-election as state Senator from the Sixth District, composed of Hopkins and Christian counties.

One of the old Jewett, Bigelow & Brooks mines—the J-B Jellico Coal Co.—has been rehabilitated at Shafer, Ky., and is shipping coal again under the firm style of the Commodore Jellico Coal Co. J. T. Bradley, of Pineville, is in active charge and directing operations. New acreage adjoining has been acquired and the property will be put into first-class shape by Knoxville and Cincinnati bankers and coal men, who purchased it. New picking tables have been installed and other new equipment is to be added.

## MONTANA

Albert Gatley, superintendent of the Republic Coal Co., of Roundup, has been appointed by the state Industrial Accident Commission a member of the state board of coal mine inspectors. Mr. Gatley, whose term is for one year, was named in place of Thomas Good, who was unable to qualify because of illness.

## MINNESOTA

The State of Minnesota has just reorganized its bureaus and departments by which the purchasing will be handled through a single department. This will include coal for all state institutions.

**Plant No. 4 of the Coal Mining Co. of Liévin, France**

This illustration was made from a photograph taken as the plant neared completion. As the mines are essentially hand operated below ground, the power houses are not imposingly big structures even at large establishments.

## MISSOURI

William Mitchell, a coal operator of Huntsville, was elected president of the Missouri Mine Safety Association following a state first-aid meeting held at Moberly recently. Frank W. Fenix, of Joplin, state mine inspector, was named as vice-president, and George Happle, of Moberly, secretary. The first-aid team from Huntsville won first prize, and will represent Missouri in the national meet to be held in Springfield, Ill., Sept. 10, 11 and 12.

At a meeting in Kansas City, June 3, to discuss methods for saving fuel, officials of the Kansas City Southern Ry. revealed that the road spends $2,000,000 a year for fuel. This, it was said, constitutes 35 per cent of the total operating cost of the system.

## NEW YORK

Koppers Seaboard Coke Co., Inc., New York City, has filed a certificate in the office of the Secretary of State at Albany increasing its capital from $300,000 to $600,000.

## OHIO

The Cleveland office of the Philadelphia & Cleveland Coal Co., which was the main office of the concern, has been consolidated with the Columbus office, located on North Front St., as of July 1. A. C. Ingersoll, president of the company, has purchased a home in Columbus and will remove there. The company is a large distributing concern with offices at Cincinnati, Indianapolis, Huntington, W. Va., and Pittsburgh. The concern operates a large storage plant at Groveport, on the Hocking Valley, where about 100,000 tons of slack is in storage.

Petitioners in the involuntary bankruptcy proceedings against the Blanchard Zanesville Mining Co., which operates large mines north of Zanesville, have united in a request to the federal court that the receivership be lifted. C. M. Maxwell, who has been acting as receiver, has joined in the request. It is averred that the company is solvent and that it should be made free to carry out large fuel contracts with the Ohio Power Co., which operates a large plant at Philo, south of Zanesville.

Leonard Johnson, sales manager of the Lorain Coal & Dock Co., of Columbus, resigned that position June 1 to become associated with the C. W. Claslin Coal Co., of Boston, Mass. The Claslin company does a general wholesale coal business.

Since two addresses were made recently in Ohio by John L. Lewis, president of the United Mine Workers, coal operators in the southern Ohio field report a much more radical feeling among the miners of the state. For this reason the likelihood for a compromise on the Jacksonville scale, which might make it possible for operators in the southern Ohio field to open mines, is not as great now as formerly.

The Hocking Valley R.R. Co. has placed orders for coal for its 1925 requirements. Only Ohio mined coal is to be used. Several bidders asked for the award but the contract was let to smaller Ohio operations at $1.65 per ton, f.o.b. mines.

Noel L. Mahan, Western agent for the General Coal Co., is moving general Western headquarters of the company to Cincinnati. The Detroit office will still be maintained. Elmer Weirhake, who has been resident manager in Cincinnati, will become assistant general Western sales agent.

The Ohio & West Virginia Coal Co., a large jobbing house, with offices formerly located at 16 E. Broad St., (Columbus,) may be liquidated, according to a report. The company has not been active in business for over a year, when the offices were closed, and the way things stand now liquidation seems mighty favorable. David Armstrong, of Jackson, is head of the company.

Stanley Johnson, for the past six years assistant general manager of the Lorain Coal & Dock Co., has been named second vice-president to succeed his cousin, Leonard Johnson. Leonard has been serving in this capacity for five years, but recently severed his connections to take a position with the C. W. Claflin Co., a wholesale coal concern of Boston.

## OKLAHOMA

If something is not done about the non-union operation of the Crowe Coal Co. in the Henryetta field, union miners working under the 1924 scale for the same company in Kansas will be asked to call a strike, William Dalrymple, president of the district 21, United Mine Workers, says. It is rumored that a petition is being circulated asking Gov. M. E. Trapp to recall the troops, which, according to Chief of Police Stormont, still are on duty, although there is no indication of any trouble at the mines.

## PENNSYLVANIA

The Glen Alden Coal Co. is planning the establishment of a large coal-storage plant, the largest in northeastern Pennsylvania, near the Wyoming monument, Wyoming, it is reliably reported in Scranton. The company is said to be negotiating for the purchase of a farm located between Wyoming and Dickville for this purpose. The farm contains 50 acres and it is understood will change hands for the sum of $30,000. The Delaware, Lackawanna & Western R.R., the Glen Alden coal carrier, runs through the farm. According to reports the plant will have a capacity of 100,000 tons of coal and will consist of two sections.

The Coy mine of the Brush Creek Coal Mining Co., which has been leased by the Rochester & Pittsburgh Coal & Iron interests of the Jefferson & Indiana Coal Co., began operations on June 22 with more applicants for work than could be used.

The Connellsville Central Coke Co. is resuming operations at the Herbert plant after being idle for several months. There are 210 rectangular ovens at this plant.

The Temple Iron Co. will hold a meeting at Reading on Thursday, Sept. 3, to wind up its affairs. At one time it was commonly known as the "Hard Coal Trust," as its stockholders were the hard coal carrying railroads. The company has been inactive since 1914, when the U. S. Supreme Court declared it a monopoly.

Federal Judge Robert M. Gibson on June 23 denied the application of the United Mine Workers for an injunction to restrain the Jefferson & Indiana Coal Co. and Sheriff John M. Malcolm, of Indiana County, from interferring with union meetings near the company's mine in Indiana County.

William Geary has resigned as superintendent of the Sunshine plant of the Baton Coal & Coke Co., at Martin. Mr. McDowell, superintendent of the Linn plant, near Braznell, has been placed in charge of both plants.

The Pennsylvania Coal & Coke Co. reports May gross at $349,382, compared with $430,046 in the same month last year and deficit after all charges, except federal taxes, of $61,419 against a deficit of $49,540. For the five months of the year gross totaled $2,269,244, against $2,629,398 a year ago and deficit after charges $282,752, compared with $86,513.

The Ridgeview Coal Co., of which Jesse K. Johnston is president, has let contracts with the Link Belt Co. for one slack conveyor, one sand and slate conveyor for conveying coal from the mine to the tipple and for two mechanical loading machines, with a capacity of 500 tons daily. Charles E. Craig of Morgantown, W. Va., has accepted the position of supperintendent of the Ridgeview company and is now in complete charge of operations.

Officials of the Kingston Coal Co. have decided to sell a number of their houses to employees of the concern. The company owns more than 100 houses in Kingston and Edwardsville boroughs and some of their employees have been renting them for years. The homes are being sold at between $6,000 and $7,000. All are improved and on improved streets.

Workmen in the employ of the Philadelphia & Reading Coal & Iron Co. have started to raze the frame tower over the Bear Valley shaft. The tower was erected more than 25 years ago and is being torn down as a result of a recent discovery showing faulty construction. The tower will be replaced by one of steel construction. Four weeks will be required to complete the work.

The Penn-Lackawanna Coal Corporation, organized in April of this year, with executive offices at 35 Wall St., New York City, has taken over under long-time leases the 600-ton Simpson Breaker and the Lackawanna Mines, in the vicinity of Carbondale; the Tipperary Mines, located at Jermyn, and the Ansley Mines, located near Archbald. This corporation is now operating the Simpson Breaker, near Archbald, and the Lackawanna Mine. It also has plans for the erection of an additional breaker at or near the Ansley Mines and for extensive development of both the Ansley and Tipperary Mines. The officers of the corporation are: President, M. B. Courtright of Philadelphia; vice-president, Wm. J. Jegen; secretary and treasurer, J. F. Limbach, of Hoboken, N. J.

A new electric fan recently put in operation at No. 3 shaft of the Lehigh Coal & Navigation Co., in the Nesquehoning district, has a capacity of circulating 200,000 cu.ft. of air per minute.

**Coalwood, McDowell County, W. Va., Looking Up Snake Root**

This is part of the village attached to plant No. 252, Consolidation Coal Co., Pocahontas-New River division, a few miles over the hills from Gary and Welch, about 5 miles as the crow flies from each.

Steel work has been placed about the new device to protect it from being damaged by falls.

The State Mine Examining Board cannot legally grant a certificate of qualifications to a candidate for the office of mine inspector who has reached his fiftieth birthday, even though he possesses all the other qualifications required by the laws of Pennsylvania. This is the decision of Frank I. Gollmar, a Deputy Attorney General in an opinion to Joseph J. Walsh, State Secretary of Mines, just made public. The opinion cites the laws bearing upon the question which was asked by the mining department head.

Coal mining in the Pigeon Creek Valley, Washington County, where 10 large mines are located, virtually came to a standstill June 25 when the Bethlehem Mines Corp., a subsidiary of the Bethlehem Steel Corp., closed its Marianna and Ellsworth properties. Notices posted said the closing was because of the high production cost. Normally each mine employed about 750 men. For the last few months the mines had been working about three days a week. Eight other mines in this district closed down some time ago.

Continuation of the commissions of the following mine inspectors was announced June 25 by Governor Pinchot: Anthracite—P. J. Moore, Carbondale; L. M. Evans and D. T. Williams, Scranton; Augustus McDade, Taylor; E. C. Curtis, John B. Corgan and T. J. Williams, Kingston; D. T. Davis, Wilkes-Barre; Frank Kettle, Nanticoke; D. J. Roderick and J. J. Stickler, Hazleton; M. J. Brennan, Pottsville; P. C. Fenton, Mahanoy City; William Reid, Centralia; B. I. Evans, Mt. Carmel; P. F. Friel, Shamokin, and Charles J. Price, Lykens. Bituminous—John F. Bell, Dravosburg; C. P. Byrne, Charleroi; P. J. Callaghan, Bridgeville; F. W. Cunningham, Somerset; Nicholas Evans, Johnstown; Edward E. Girod; Masontown; W. H. Howarth, Bridgeville; William Langan, DuBois; Thomas S. Lowther, Indiana; Alexander McCanch, Monongahela; Thomas A. Mather, Tyrone; John I. Pratt, Pittsburgh; C. B. Ross, Latrobe; Thomas B. Williams, Johnstown, and David Young, Freeport.

## TENNESSEE

The twelfth annual field day and miners first-aid contest will take place Sept. 26 at the East Tennessee Fair at Knoxville, under the auspices of the Southern Appalachian Coal Operators' Association, Tennessee Mine Inspectors, Knoxville Chamber of Commerce, U. S. Bureau of Mines and the East Tennessee Fair Association. Valuable prizes will be given the winning teams and there will be a banquet and entertainment for the contesting teams in the evening. R. E. Howe, secretary of the Southern Appalachian Operators Association will have charge of the general arrangements. J. M. Webb of the U. S. Bureau of Mines, will help to train the teams. The contest will be judged by Knoxville physicians. Dr. Kyle Copenhaver, formerly chief surgeon for the American Zinc Co., will be chairman of the judges.

The Signal Mountain Portland Cement Co., of which John L. Senior, James Building, Chattanooga, Tenn., is president, is reported to be about to establish a coke and byproducts plant.

## UTAH

The State Securities Commission has cancelled the stock application of the Two-Ton Smokeless Fuel Co., of Salt Lake City, on motion of the applicant. The proposal was to sell 7,715 shares of common stock at $10 a share.

Coal production in Utah in May totaled 251,874 tons. In May last year 260,586 tons was produced in the state. In April of this year 288,536 tons of coal were produced.

The Consolidated Coal Co., of Salt Lake City, has received a permit from the State Securities Commission to offer for sale 50,000 shares of its stock at $1 par value. The company's property is located in Salina Canyon, Utah. The property has a large shaft 265 ft. deep and about 280 ft. of tunnel extending to the seam to be mined.

On June 17 John Taylor, mine foreman for the United States Fuel Co. at Hiawatha, was appointed an assistant state coal mine inspector. He will work in conjunction with John Crawford, who has been Utah coal mining inspector for several years past. The additional inspector was made necessary by the recent withdrawal of part of the inspection assistance rendered the state by the U. S. Bureau of Mines.

## WEST VIRGINIA

The recent death of Frank P. Harman, of Washington, president of the Turkey Gap Coal Co., necessitated a special meeting of the board of directors at Bluefield on June 17 at which the following officers were elected: James A. McQuail, president and general manager; Oscar M. Deyerle, vice-president; William H. McQuail, Jr., secretary and treasurer. Members of the board of directors are: James Booker Clark, of Baltimore; Clinton DeWitt, Jr., Lynchburg; E. McD. Harmon, Burch; William H. McQuail, Jr., Pottsville, Pa.; James D. Tate, Chilhowie, Va.; Oscar M. Deyerle, Bluefield; Charles K. Robertson, Shamokin, Pa.; James A. McQuail, Lott; Henry M. Sackett, Lynchburg, Va. The company is a West Virginia corporation with a capital of $1,000,000 and a substantial acreage of unmined coal. The company operates six collieries, the Wenonah mines Nos. 1, 2 and 3 and the Modoc, Josephine and Joanna mines with an annual production of from 500,000 to 600,000 tons of Pocahontas No. 3 seam coal.

The Maidsville Coal Co., began operations during the third week of June at the old North American Coal Co., mine at Maidsville, recently purchased at public sale. The property at Maidsville was sold on May 23 to satisfy outstanding debts, the Fiedler Coal & Coke Co., of Morgantown, which held a trust lien against the property, purchasing it for $13,000.

The annual examination for mine foremen and firebosses is to be held by the Department of Mines beginning at 9 o'clock a. m. at the following places and on the dates mentioned: Morgantown, West Virginia University, Mechanical Hall, July 20; Central Junior High School at Charleston, July 27; High School Building, Beckley, July 30; School building at Welch, Aug. 3; High School building at Logan, Aug. 6, and High School Building at Wheeling, Aug. 10.

During the latter part of last week the work of rock-dusting mine No. 41 of the Bethlehem Mines Corporation, near Barrackville, where the explosion occurred March 17, was under way. Early this week the work of rock-dusting the twin plant, Dakota, will be started.

The Thurmond Consolidated Coal Co., was recently organized with a capital stock of $1,500,000, the headquarters being at Logan. This company represents a consolidation of several coal companies in which Walter R. Thurmond and others are interested, all operating in the Logan field.

C. F. Huff, of Greensburg, Pa., has leased the Jerry Run Coal Co. mines, comprising about 63 acres of Pittsburgh coal in the southwestern part of Taylor County, the lease to run for a period of 10 years. According to the best information obtainable the lessee will start operations in a short time, giving employment to about 60 non-union miners.

The Coal Operators Sales Agency has obtained quarters in the recently completed building of the Union Bank & Trust Co. in Huntington. F. W. Schoew is president of the company.

Veazey No. 2 mine, at Robson, on the Virginian Ry., has resumed operations. At the Glen Jean mine, owned by the same company, electric pumps are being installed, and as soon as that work is completed operations will be resumed.

In the Marion County Circuit Court at Fairmont recently the Fairmont & Cleveland Coal Co., which has one of the largest coal mines in northern West Virginia in Parker Run, at Rivesville, was awarded 107 of the company houses, which it will receive possession of July 29. Two houses were awarded in the Dakota mining town to the Bethlehem Mines Corporation in eviction suits.

The total authorized capital stock of the Amelia Coal Co., has been increased from $25,000 to $50,000. These companies have reduced their capital stock: The Deep Hollow Coal Co., from $10,000 to $5,000; Glennova Coal Co., from $50,000 to $5,000; Chesapeake Coal Co., from $1,000,000 to $500,000.

The following West Virginia coal companies have surrendered their charters and discontinued business: The Western Coal Co., M. M. Tyree Coal Co., and the Norwood Coal Co.

There is a shortage of mine labor and miners in the Winding Gulf district, despite the fact that 17 out of 74 mines in that district have shut down, according to an announcement by George Wolfe, secretary of the Winding Gulf Operators' Association.

### WYOMING

The Kemmerer Coal Co. is to install more machinery in its Sublet mines, which will employ about thirty more men. The new machinery, which includes a conveyor, is expected to arrive early in July.

### ALASKA

Anthracite deposits on Chickaloon Ridge, reported last year by the U. S. Geological Survey, will be investigated by the Bureau of Mines. Several permits already have been taken out in the district. It is planned to test the coal on an Alaska railroad locomotive, and if found satisfactory, the product will be mined and shipped in large quantities.

### WASHINGTON, D. C.

Through discontinuance of work and reassignment of duties 23 positions in the Geological Survey have been abolished during the current fiscal year. The annual salaries of these positions amounted to $41,500, and as the work has been discontinued or absorbed among the other employees this represents a yearly reduction in the overhead expenses of the bureau.

The U. S. Civil Service Commission announces an open competitive examination for associate cadastral engineer (qualified in mining engineering) to fill a vacancy in the General Land Office, Department of the Interior, with headquarters at Denver, Colo., and vacancies occurring throughout the United States in positions requiring similar qualifications. The entrance salary is $3,000 a year. The duties of the position are the correlation of surface and subsurface operations under coal, oil and gas leases; the establishment, retracement and relocation of survey lines and corners; the plotting and mapping of the work performed; the making of surface and subsurface surveys of mineral claims and leasing units, and the workings in connection with the supervision of operations, output and royalties. Receipt of applications will close Aug. 4. Full information and application blanks may be obtained from the U. S. Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. Civil Service examiners at the post office or custom house in any city.

### CANADA

Disaffected miners, working in the Drumheller and Wayne coal fields of Alberta, on June 20, decided by a vote of 684 to 132 on the formation of a new local union entirely separate from the United Mine Workers. The total number of miners at present working in the field is approximately 1,800, the majority of the men abstaining from voting at the request of the U. M. W. officials.

Because freight rates have now fallen within the province of the Board of Railway Commissioners, the Canadian National Rys. has withdrawn from the verbal agreement made with the Alberta Government to move 25,000 tons of coal from Drumheller, Alta., to Ontario points at an experimental figure of $7 per ton. The railroad's move is believed to have been dictated by the fear that, if the experiment proved that coal could be moved at between $3 and $4 less than the existing tariff of $11.40, the entire position of the National Rys. in regard to Western freights might be in jeopardy.

Governmental assistance for domestic production of coke from coal mined in Canada is to be provided in a bill prepared by Minister of the Interior Stewart. Not exceeding 3 per cent of the cost of the plants would be advanced by the government.

## Traffic

The New York Public Service Commission has approved new rates of the Delaware, Lackawanna & Western R.R. on coke, coke breeze, coke dust and coke screenings, carloads, minimum weight in open cars 50,000 lb. (except that when car is loaded to full visible or cubical capacity, actual weight will apply, but not less than 35,000 lb.) and in box or stock cars 40,000 lb. rates per net ton from Harriet, to New York, Chicago & St. Louis stations: Angola, Dunkirk, Farnham, Irving, Sheridan and Silver Creek, $1.26 (reduction, 25c.); Ripley and State Line, $1.51 (reduction, 25c.), effective July 24. Also of the New York Central East from North Tonawanda to Harriet, 70c. (reduction, 43c.) per net ton, effective June 22, 1925.

A reduction of 42c. a ton on coal freight rates between Springfield, Ill., and Bloomington, Ill., and a reduction of 27c. a ton on coal between Lincoln, Ill., and Bloomington, Ill., has been ordered by the Illinois Commerce Commission. Present rates between Springfield and Bloomington are $1.42 a ton and between Lincoln and Bloomington $1.18 a ton. The commission directs that the rate from Springfield shall be $1 a ton and from Lincoln shall be 91c. a ton.

## Association Activities

Incidental to the annual meeting of the National Coal Association held at Chicago last week, the **West Virginia Coal Association** held its annual meeting at the same time, at which all the old officers were re-elected, as follows: J. G. Bradley, of Dundon, president of the Elk River Coal & Lumber Co., president; G. H. Caperton, of Charleston, vice-president; Walter H. Cunningham, of Huntington, secretary; C. C. Dickinson, of Charleston, treasurer. Representative coal men from all sections of the state were present at the meeting. Several hours were devoted to a discussion of problems affecting West Virginia operators.

The thirteenth annual outing of the **Cincinnati Coal Exchange** drew a record crowd June 16. More than one hundred sat down to the dinner at the North Cincinnati Gym Club's grounds at Bass Island. As usual, the baseball game attracted most of the attention and for the first time in three years the team represented by men in the low volatile trade, captained by Ed Harper, walked off with the trophy. Harry Jungens pitched for the victors and Ross caught. The High-Volatile battery was Davidson and Justice, pitchers, and Loeb, catcher. The presentation of the trophy was made by Harold W. Coates, Sunday editor of The *Commercial Tribune*. This year there was a long list of athletic events. The three-legged race went to Gerding and Gormlay, who also won the second event, a pick-a-back race. The 100-yard dash was won by Elmer Wierhake, manager of the General Coal Co., while the same event for aged racers went to Fred Heitzman, of the Caster, Curran & Bullitt forces. The team captained by Jack Humphrey won the tug-of-war and H. B. Justice won the shotput. Ernie Howe, a former president of the Coal Exchange, and Jim Reilly, former president of the Chamber of Commerce, were the judges. The Chairman of the Entertainment Committee was Julius B. Ratterman.

At the annual meeting of the **Colorado and New Mexico Coal Operators' Association**, held June 17 at Denver, Colo., the following officers were elected: F. R. Wood, president; H. F. Nash, vice-president; F. O. Sandstrom, secretary, treasurer and traffic manager. The following were appointed directors for the ensuing year: W. D. Brennan, Frank Bulkley, L. A. Hayden, A. M. Johnson, A. M. McNeil, S. S. Murphey, H. F. Nash, J. J. Roche, J. van Houten, J. F. Welborn, and F. R. Wood.

## New Companies

An Ontario charter has been granted to **British Colonial Mines of Canada, Ltd.**, with headquarters at Toronto. The authorized capital is $5,000,000 and Toronto lawyers are mentioned as the incorporators.

**The Red Glow Coal Co.** was incorporated in Denver, Colo., the early part of June, with a capital stock of $40,000, by Ambrose F. Lunney, James B. McGowan and others.

## Obituary

**David Kelso**, age 45 years, who served several years as an associate mine inspector and who was associated with mining operations in the Birmingham (Ala.) district a greater part of the time for the past 35 years, died suddenly from a heart attack on June 21, while on a pleasure ride in his automobile with a friend.

## Coming Meetings

**Atlantic States Shippers Advisory Board.** Seventh regular meeting at Atlantic City, N. J. July 8-9. General secretary, P. W. Moore, 30 Vesey St., New York City.

**Rocky Mountain Coal Mining Institute.** Summer meeting, Aug. 26-29 at Price, Utah. Secretary, Benedict Shubart, Denver, Colo.

**American Institute of Mining and Metallurgical Engineers.** 132d meeting, at Salt Lake City, Utah, Aug. 31 to Sept. 3. Secretary, F. F. Sharpless, 29 West 39th St., New York City.

**Oklahoma Coal Operators' Association.** Annual meeting, Sept. 10 at McAlester, Okla. Secretary, A. C. Casey, McAlester, Okla.

**New York State Coal Merchants' Association.** Annual convention, Sept. 10-15, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries, Sept. 28 to Oct. 3, at Grand Central Palace, New York City.**

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**Fourth National Exposition of Power and Mechanical Engineering, Nov. 30 to Dec. 5, at Grand Central Palace, New York City.**

**Coal Mining Institute of America. Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.**

# COAL AGE

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## Correcting a Misunderstanding

IN OUR ISSUE of Oct. 23, 1924, we published an editorial which by general understanding referred to Mr. George H. Cushing, of Washington, D. C. The editorial in question was an attempt, without malice, to take a humorous view of a situation which had developed some intensity of feeling. Mr. Cushing construed our humor as an assault on his motives and even on his professional standards. The latter question was to him the paramount issue.

While we did disagree with Mr. Cushing on the matter then under discussion, there was no thought of imputing wrong motives to Mr. Cushing in the position he had taken, nor of questioning his professional standards.

In justice to Mr. Cushing we regret that the editorial was open to any misconstruction and withdraw any seeming imputation of motive it contained.

## Still Unrepentant

A FEW WEEKS ago the Federal Trade Commission donned sackcloth and did penance in the open market, but its latest report on anthracite shows that it has not reformed an iota. Its statements being made at the eve of a contest for a new anthracite wage scale seem calculated to encourage the miners in their desire to compel the public to pay a higher wage than that to which the men are entitled. The facts have been published already; why repeat them now?

"In September," says the Commission, "the gross profits realized by wholesalers reporting to the Commission ranged as high as $1.75 a ton and amounted to $1 or more a ton on about 4 to 11 per cent of their reported weekly sales." It will be noted that the Commission does not say how many wholesalers got $1.75 a ton. It is as if a foreigner commenting on our American conditions said: "In the mad race for wealth, in the United States, derelictions ranging even to murder are committed." A true statement but an unfair one. No group is to be judged by a single man.

"Failure of the industry to increase its mining capacity to meet increasing demand has resulted in the establishment of an unduly high price level," says the Commission. This is not a fact. Just at present the production is ahead of the demand. In 1922 there was an actual shortage of coal but, as the Commission says truly, the shortage in 1923 was only anticipated and not actual. At other times there has been a glut of anthracite. The condition for which the Commission prays wherein the mine capacity is equal to meeting periods of extraordinary demand has been with us to a large extent and will be for some time, unless there is a strike. The bituminous region has always been ready to meet such extraordinary demands and strange to say it has been universally condemned for having been thus equipped. Do we understand that the Commission would have the anthracite mines also overmanned and overdeveloped?

The Commission says more mines could be operated. That is true. A *few* mines could be opened but they are in regions where the coal pitches heavily, is badly crushed, is expensive to mine and where the mines will provide mostly small unsaleable coal. As the production is now ahead of demand, why open such mines? Furthermore, there is a glut of small sizes, which are sold at less than production cost at a loss of $75,000,000 yearly. Provided the large sizes could be sold, would it pay to mine the mineral in order to get them if the small sizes in consequence became a drug on the market?

The lack of competition is suggested as a cause of peak prices. Strange to say, in the bituminous market when a shortage comes, the increase of price is greater than in the anthracite trade, the reason being that the old-line anthracite mines are reasonably sure of a fair profit and the operators do not feel justified in asking for as large a price as they can get as is the custom of many independent operators in that region and as is the general practice of the bituminous operators.

## Don't Queer the Loading Scale

YEARS AGO when the machine-cutting scale was being framed some men who didn't want to buy machines for cutting coal advocated a wage scale that took away most of the profit of machines in Illinois. The state and even those men themselves have suffered long from this ill advised policy. When they bought machines, they found themselves confronted by an inequitable wage scale that robbed them of the profits of their enterprise.

The same point of view may present itself to others with regard to the loading-machine scale. Those who do not desire to modernize may try to prevent others from doing so and will lay their state or district open to competition from other states and with oil. If a man does not propose to use loading machines his sole right to action should be to prevent a day scale being proposed that will be lower than other day scales and that, of course, is not likely to be attempted.

Favorable machine scales are needed in union districts if they are to battle with competition. The hand-loading operators should not be selfish enough to prevent this, for if the district does not mechanize on a reasonable basis there will be profit for no one. Certainly the unmechanized will not be able to survive whether the scale for loading-machine men be high or low.

In the formulation of a fair scale the union should join with the operator. The laboring man should do all he can to advocate and assist the introduction of machinery that reduces toil. It should be recognized union effort—one of the axioms of unionism needing neither argument nor proof. Furthermore, the wage should be on a day basis so as to make it impossible for any operator to run his mine without due co-ordination of effort. The hand loader of the past has had to wait too long for cars. How long would he have had to wait had the operator been paying day wages? The introduction of the day-wage basis will be the end of the operator who persists in running his mine without regard for the efficiency of all parts of the operation. The loader should be as assiduously tended as the motor man or tipple hand and such attention will never be paid to his needs till he becomes a day man with his idleness a matter of apprehension to his employer.

We have said this for far more than ten years and the importance of this idea is just beginning to be appreciated. We advocated a combination wage—part day's pay and part a tonnage rate—but, now the argument is being acknowledged, it appears there will be no half way measures but that miners and operators will combine to establish a day wage that puts the whole burden of discontinuity on the operator and gives him all the profit that continuity affords. Perhaps that is not the ultimate solution but it seems at the present the one likely to rule, especially in conveyor-belt, hand-loading mines where the product of each man cannot be readily segregated.

## We Also Believe in High Wages

JOHN L. LEWIS says in his book that the high wages of American workmen are a matter of pride to all Americans. Those men are dead or converted to a better mode of thought, he declares, who at one time advocated low wages. We can rejoice that Philadelphia pays more than twice the wages paid in London, three times the wages paid in Paris and nearly five times the wages paid in Rome, Madrid and Vienna. We hope these large wages will continue. We are sure they will. They represent a high productivity of labor and capital, greater than is attained in Europe.

Mr. Lewis may not have stated a fact when he said that high wages in themselves constitute Americanism, but it is true that they reflect an enterprise that is typically American. We hope the spirit of untrammeled achievement will be continued, that the store of natural wealth that aids such achievement will not be too rapidly depleted and that as the result of the energy of unfettered industry remaining relatively unchecked and the riches of the earth not being unduly exhausted, we may continue to see high wages in America for many years.

Herbert Hoover is reported to have said at the conference in the Hotel Ambassador, New York City: "It has always been my belief that the test of civilization is the scale of living of its whole people." In this all will agree but—

It does not follow that we rejoice when, by a combine and strikes that paralyze the country, any body of men obtain a wage that they could not get by supply and demand and make the public pay for the product more than is properly due. We do not rejoice in any such achievement. If it is Americanism, as Mr. Lewis volubly contends, it is not the kind of Americanism of which we are proud.

It does not follow that we rejoice when high wages make coal suffer in competition with the oil for domestic purposes.

It does not follow that we rejoice when an undue wage rate makes it possible for workmen to live on two days' work a week while others who have to buy their product must work six or run in debt.

It does not follow that we rejoice when we find one section of the coal field able to take the business entirely away from another by paying merely a normal wage while the other section pays a supernormal one.

It is not a contribution to Americanism when one industry, the anthracite, with an hourly wage that was already higher in 1914 than was paid in other industries, gets an increase in wage of 192 per cent in ten years while the manufacturing industries get an increase of 129 per cent, the railroads one of 141 per cent, the illuminating gas industry one of 111 per cent and the electric light and power one of 121 per cent, as is shown in the National Industrial Conference Board's report which we published last week.

Now, we hear, that these highly paid men want yet more pay. The miners are asking a 10 per cent increase, and the day laborers a wage advance that in some cases runs up to 21.75 per cent. In addition there are other provisions that are somewhat difficult to evaluate, such as weight allowances and payment for the placing of sheet-iron, props, timber, forepoling, abnormal shoveling and rock, free lights, jackhammers and air to operate them, so that the increase demanded *may* average 30 per cent or more which on the basis of the pre-war, 1914, rates is 88 per cent, bringing the increase if granted, which it will not be, up to 282 per cent above the pre-war figure, twice the increase obtained by railroad men, the group that next to the coal miners got the largest rate of increase.

This is not Americanism; it is the new feudalism—the outcome of a privileged era for that kind of unionized labor that believes that all is right, if you can "put it over."

## The Man with Two Prices

HARDLY ANY REPUTATION is worse for an operator or a wholesaler than to be a man who sends out his salesmen to get as large a sum for his product as he can above a certain base price. But that is how coal is often sold. In fact the salesman is commended who "stings" an unsuspecting, uninformed buyer. At such times as the present the salesman usually is in the home office at least once every day trying to get a price to quote that entirely wipes out profit.

Where a company is not a one-price firm, every buyer is trying to beat down its price. Quality is not considered. Price is the sole thought. In fact the buyer does not believe that a product sold by haggling is a high-grade product. He usually *does* think that—and *just* that—of a commodity sold at a fixed price. Coal is enough different so that the buyer who finds a set price immediately concludes he has lighted on a superior article; whereas, if there is a variable price the purchaser assumes that the producer or wholesaler has an article that he has difficulty in selling. And the assumption is correct.

Two prices do not pay. It may be well to lower prices or raise them but not to vary them for any particular customer. The same price for all closes contracts quickly, saves selling costs and enhances the standing of the seller and the reputation of the goods. The word of power is, "You can't get *my* coal for any such gyp figure." The companies selling coal throughout this country should have the moral strength and business acumen to instruct salesmen to have no other selling policy, despite fierce competition.

# Rock-Dust Barriers Have Important Part to Play In Protection of Soft Coal Mines

### Bureau of Mines Engineer Declares for Drop-Bottom Type with Distant Tripping Vanes—Covers Keep Dust Dry and Ready—V-Troughs Have Many Disadvantages

**By George S. Rice**
Chief Mining Engineer, U. S. Bureau of Mines,
Washington, D. C.

THE RAPID ADOPTION of rock dusting as a means of forestalling mine explosions has recently brought consideration of dust barriers as a supplementary preventive agency strongly to the front. This article traces the history of the dust barrier, its various applications and will describe the type of barrier which is now considered to be the most effective. It is of the drop-bottom type, actuated by vanes located at a distance and is covered with sheet iron to keep the dust dry.

A shale-dust, flame-arresting barrier (*"arrêt-barrage"*) was the first suggestion for the prevention of coal-dust explosion propagation, growing out of the investigations conducted at Liévin, France, by Taffanel. The principle involved was the concentration of masses of incombustible dust at intervals throughout the mine passages, designed to extinguish the flame by coking and interposition, thus arresting propagation, rather than generalized rock dusting as first proposed by Sir William Garforth and intended to prevent first ignition. Taffanel's initial recommendations were for the employment of ten shelves, each 20 in. wide, extending across the passageway, near the roof, on which the inert dust was to be piled.

When large-scale coal-dust explosion testing was begun by the Bureau of Mines under my direction, at the Experimental Mine in 1911, Taffanel barriers were used to lessen the force of explosions or to stop them at the end of a predetermined test zone.

It was found in hundreds of trials in which these barriers were used, that while in a great majority of cases they were successful, especially after more shelves were used than had been originally prescribed, nevertheless they sometimes failed when the explosion wave had so little force as not to displace the dust, or when the explosion movement was extremely rapid but lacked violence. This latter condition may be encountered with a road dust of high ash content, with a small percentage of fire damp present.

The loaded Taffanel barrier presents a V-shape to the approaching pressure wave. This is not conducive to displacement of the loading. Furthermore, as the shelves are fixed, considerable violence is necessary to rupture and discharge the load. In the explosion disaster which occurred in the La Clarence Mine, Pas-de-Calais, France, in 1912, some of the original Taffanel barriers failed. This caused Mr. Taffanel to increase the number of shelves in each barrier to fifteen, and in subsequent practice throughout France, still more shelves have been added. They, however, were made narrower and balanced on a narrow support so that they would tip over and launch their contents under the action of a relatively weak air wave.

The La Clarence failure and certain other shortcomings demonstrated by tests conducted at the Experimental Mine at Bruceton, Pa., led me to develop in 1912 to 1915 what I termed "closed" barriers which would operate under the action of a smaller force than was necessary with the Taffanel design. The latter types of these closed barriers, tested at Bruceton, were almost universally successful. They are described in Technical Paper 84 (U. S. Bureau of Mines) published in 1915, and subsequently in Bulletin 167, in which are given the full results of the various tests.

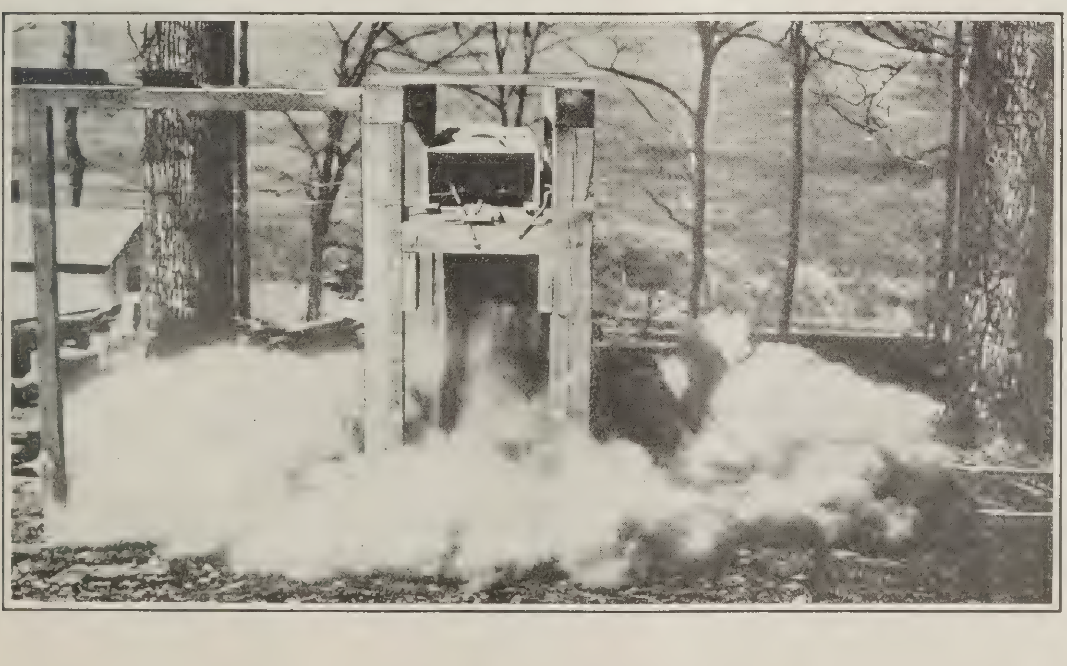

FIG. 1

**Tripped in the Open**

This shows the effect of springing the mechanism of a trough barrier carried on a frame built up above ground. In actual operation it is essential that the rock dust contained in a barrier shall fall in such a way as to form a continuous curtain extending entirely across the heading and persisting for an appreciable length of time so as to effectively smother any explosive flame.

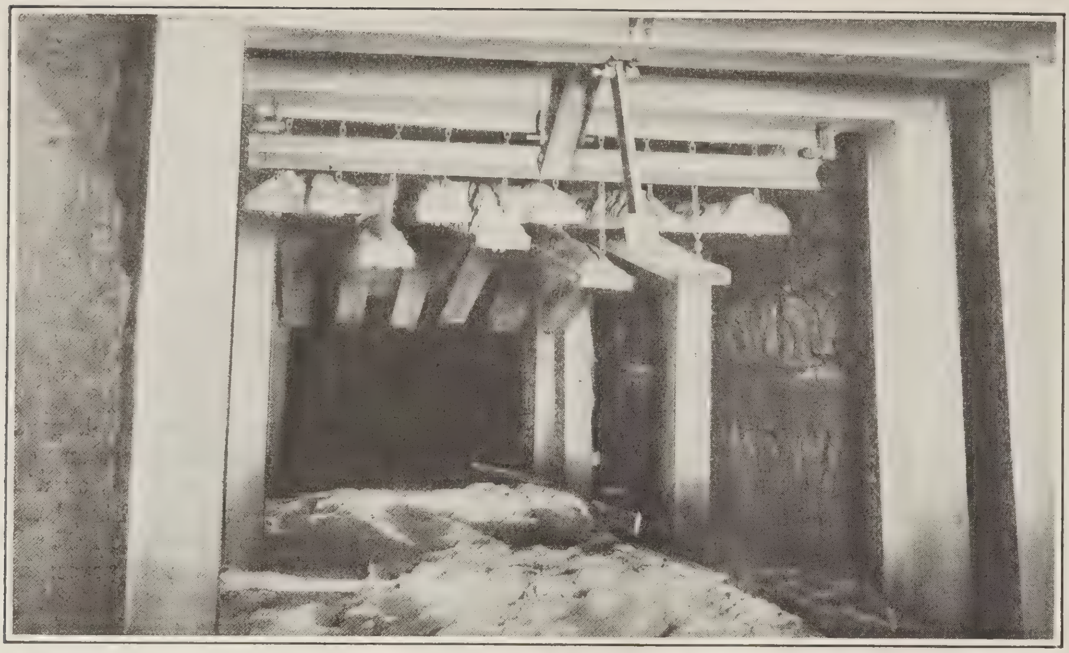

FIG. 2

**After a Light Blast**

Here is a type B concentrated barrier as it appeared after a light explosion. This kind of barrier is tripped by advance vanes and spills its dust in a whole series of sheets that persist until the explosive wave arrives. The flame thus is effectively blanketed and smothered. If the explosion is not violent no particular damage is done to the barrier.

The British have adopted generalized rock dusting on the theory that it is much better to prevent "ignition" than to try to stop "propagation." The Bureau of Mines' investigators conceded that this was a fact, but they believed it highly desirable to have secondary defenses. It is much easier to employ rock dusting successfully in mines using the longwall system, which prevails in Great Britain, than in the room-and-pillar method almost universal in this country.

In longwall workings old roads are cut off and there are no extensive open gobs, whereas in room-and-pillar work, generalized rock dusting is not so easily accomplished under many mining conditions. Moreover, in the longwall system the road ribs are rock, which entails some natural rock dusting. In room-and-pillar work, on the other hand, the sides of the passageways have ribs of coal, and sometimes the roof is of the same material. This increases the formation of coal dust through abrasion or spalling. Carrying rock dusting to the faces of rooms in old workings, or even into airways in which there are no tracks, is a difficult problem in such mines.

There is also the complication that where watering is employed in connection with undercutting and especially where its use is compulsory at all the faces, as is the case in Utah, the air in the rooms and return airways is extremely humid. This is not conducive to the maintenance of dry rock dust, although it has been found experimentally that any inert dust that is distributed helps in the wetting of the coal dust through contact. That is, it has been demonstrated by experiment that a mixed coal and rock dust becomes wetted rapidly, whereas coal dust alone resists wetting.

As long as rock dusting in this country was considered as being academic—since with few exceptions it was not practiced until about two years ago—the technique to meet the special conditions encountered in American mines was not developed. Recently, however, great advances in this direction have been made.

With the wide adoption of rock dusting during the past year—its use as an alternative for watering being made mandatory in Utah, while similar legal measures are being seriously discussed in other states—the question of barriers has become increasingly important. Field investigations and direct inquiries from operators have developed the following important applications of barriers:

(1) To isolate old workings, especially those on the ventilation return, so as to prevent the propagation of an explosion originating in adjacent active workings or one starting in workings that have been abandoned either temporarily or permanently.

(2) Protection of airways and manways on which no tracks have been laid, especially those ventilated with return air which carries and deposits fine float dust from the active workings. This applies particularly where the roads are not sufficiently close to haulageways or there are no connecting cross-cuts which will permit rock dusting through the stoppings.

(3) For the protection of panels. For this purpose barriers are placed at entrances and exits so that if an explosion of gas or coal dust occurs within the panel, it may be stopped at the points of egress and not reach other parts of the mine, or vice versa.

(4) As an auxiliary to general dusting, barriers may be placed at intervals in main roadways which make coal dust rapidly through topping falling from trips, and being pulverized under the action of traffic. When so placed as to protect haulageway zones, barriers form an especially valuable secondary defense; for example, in case the dust in any zone increases in combustible content to the danger point before the next cleaning up and rerockdusting in that zone takes place.

(5) Temporary barriers may be placed in the vicinity of working faces where it is not deemed feasible to rock dust or where watering is employed to supplement dusting. Such barriers are moved ahead as the face advances.

The Bureau of Mines has recommended designs for closed barriers covering the first four of the above applications, although doubtless new plans may be devised that may prove cheaper to construct and still be effective. Practical application to the fifth case has not yet been satisfactorily worked out.

Generalized rock dusting depends upon the following principles: A coal dust explosion can propagate itself only by the constant raising of a dense cloud of inflammable dust ahead of the flame. Some have thought that the combustible dust normally present in the air of a coal mine might propagate an explosion. This, however, is not the case. In order to propagate explosive inflammation a cloud of coal dust must be so dense as to be impenetrable to vision. The air waves ahead of the explosion, termed advance or "pioneering waves," constantly stir up the dust in front of the flame and permit its continuous explosive combustion.

An explosion may die away or be extinguished by any one of three means:

(1) No combustible dust may be present over a considerable distance of passageway; it has not been found feasible to maintain this dustless condition in mines.

(2) The dust may be so thoroughly wetted that it will stick together or to the walls and will not be raised by a blast. This requires from 20 to 30 per cent of water—30 per cent for the finest dust not including the water of composition, thus signifying a condition of mud.

(3) Explosive combustion may be prevented from proceeding, by the introduction of inert rock-dust particles which absorb heat and also act as a curtain between the particles of coal dust.

### ADVANCE AIR WAVES MIX INERT DUST

In this third preventive measure, the well-known rock dusting method, the inert dust is applied in such quantities and in such position that the air waves, which always precede a coal dust explosion and in fact make it possible, will bring up and mix the inert dust in the air at the same time they throw the coal dust into suspension.

The underlying principle upon which barriers operate is that they launch suddenly so much inert dust into the advance air waves that instead of the explosive flame being extinguished gradually over a long distance, it is almost immediately quenched by the great excess of inert dust concentrated at that point.

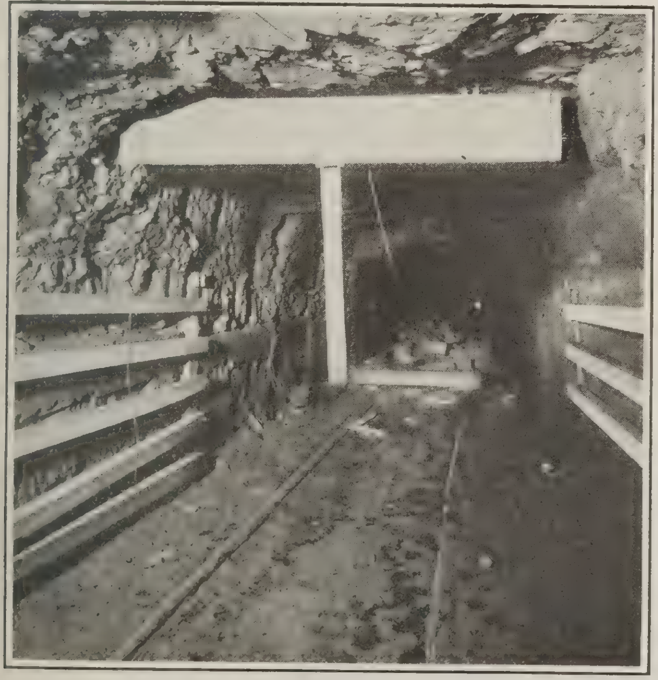

**Fig. 3—Effect of a Violent Explosion**

Heavy explosion waves may completely demolish a dust barrier. This is of decidedly secondary importance, however, as the primary consideration is that the propagation of the dust explosion shall be stopped. This is the entire object of any barrier.

When the rock-dusting method began to be used several years ago, some mining engineers and operators who had read of barriers or seen them successfully used in extinguishing test explosions in the Experimental Mine, accepted the general idea but apparently did not fully understand some of the vital factors of design. They, accordingly, either modified the Bureau's designs or made entirely new ones of their own.

One of the types favored because of its cheapness was the V-trough barrier which had been extensively used at Bruceton, although not considered by Bureau investigators as being the best design. Certain alterations were introduced. Thus the V-troughs were made much smaller and the spaces between them were narrowed. This arrangement is reported to have been successful in stopping a number of explosions in the Middle West. It has not been followed by the Bureau in the designs which recently have been extensively introduced in the Rocky Mountain field.

Undoubtedly, many mining engineers and operators will devote some attention to designing barriers. It is for this reason that I here present what I believe should be the principles governing such designs:

(1) Preference for the so-called "closed" barrier, over the Taffanel shelves, rests upon the fact that the former prevents the inert dust loading from becoming wet in the presence of humid air which would nullify its usefulness. It also obviates contamination by floating coal dust. To accomplish this end the inert dust should be completely inclosed and if the barrier is not placed tightly against the roof at a point where it is dry, it should have a cover of galvanized iron or its equivalent. Oilcloth has been used at the Experimental Mine and has served successfully over a long period. In the returns of certain other mines it has shown a tendency to rot.

(2) A barrier should be so sensitive that an air wave exerting a pressure of only 2 or 3 lb. per square inch (as measured at right angles to the direction of travel) will cause it to operate. A V-trough barrier as ordinarily installed does not meet this condition. The small V-shaped containers do not present enough surface and the sides of the individual troughs are inclined and consequently do not stand at right angles to the advance of the air wave. Furthermore, the bottom edge is held by the V-notch which simultaneously acts as a support and a hinge. Supplementary vanes, such as a vertical board on top of each trough, would increase their sensitiveness to shock waves and aid in their capsizal.

(3) In some cases an explosion may start strongly, as by a blown-out shot or an ignition of fire damp. Strong air waves are thus initiated, but the coal dust inflammation which may follow, at first may proceed slowly so that the combustion zone lags far behind the pioneering air waves that move at the rate of sound (1,100 ft. per second). To provide for such a case the barrier should not dump *en masse* but should be so arranged that much of the dust will sift down gradually or cascade over bars or grids so as to remain in suspension until the combustion wave arrives. This condition is not met by the original Taffanel barrier nor by the simple V-trough, which discharges its load *en masse*.

(4) To provide for extremely rapid flame propagation, as in a main haulageway where the explosion may travel at the rate of 3,000 or 4,000 ft. per second, it is important that tripping vanes should be located about

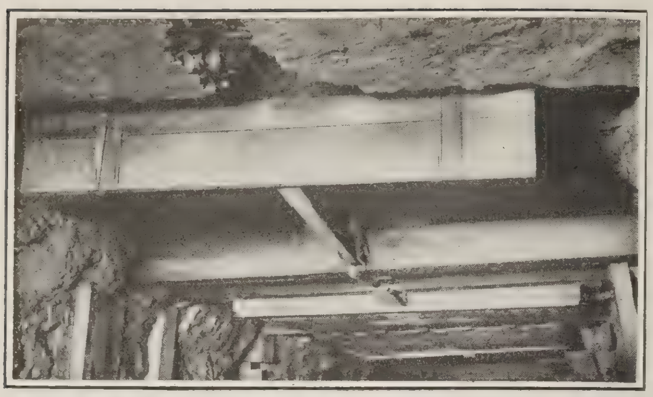

**Fig. 4—"They Shall Not Pass"**

Barriers, in reality, are deadfalls deliberately set in the runways of mine explosions. If properly constructed and maintained no explosion, regardless of its direction or speed of travel, can get by. This illustration shows a trough barrier with its operating vanes ready to throttle and kill any mine disaster of this kind that may traverse this heading.

100 ft. in advance of the barrier. This distance the Bureau's experiments have shown to be sufficient to start the mechanism in motion for dumping the barrier in ample time. The barrier, however, should not be entirely dependent on such vanes; there should always be supplementary means for tripping it, in case any accident should befall the advance vane or the wires connecting it with the barrier.

Such vanes should be scientifically proportioned so that they will not trip under the action of any small shock wave such as that set up by the slamming of a ventilating door, by a high pressure ventilating current or by disturbances caused by distant blasts of explosives. A vane should be operated unfailingly, however, by the shock wave of even the lightest, slowest-moving explosion, such as may occur when the combustible content of the air is near the lowest limit permitting flame propagation.

(5) The arrangement of the barrier should provide for a minimum delay in launching the load of dust. This can be accomplished most effectively by providing for discharge of the dust at the bottom. This condition is not met by either the Taffanel or the V-trough barriers. The latter must swing through an arc of about 90 deg. before the rock dust load even begins to discharge.

(6) Taffanel tests in France, as well as those conducted by the Bureau of Mines in this country, have indicated that the loading of the barrier, or set of individual units which make up a barrier, should be about 100 lb. per square foot of entry cross-section. Such a loading should be somewhat increased if the cross-sectional area is less than 50 sq.ft. and perhaps somewhat decreased if it is greater than 60 sq.ft. This loading is deemed necessary except where there is supplemental rock dusting in the immediate vicinity, in which case the amount of dust may be somewhat lessened.

(7) Dust for loading a closed barrier may be any kind of dry, inert material, 50 per cent of which will pass through a 200-mesh screen. Inasmuch as this dust will not normally enter into the mine air and be breathed by the workmen, it need not be non-siliceous as is the case in generalized rock dusting. It is desirable, however, to use for closed barriers a dust that has no hygroscopic qualities. That is, one which will not tend to absorb moisture.

(8) The material of which any barrier container is made usually will be wood. If, however, the barrier is located in an extremely wet or humid place, it may be desirable to make the sides and cover of galvanized iron or some similar material.

(9) Any closed barrier, if used in a haulageway or manway, should be so arranged that if it should be accidentally tripped men underneath will not be struck by the moving parts. In some cases this may necessitate recessing the barrier into the roof, although usually a place can be selected where the natural roof is sufficiently high.

(10) In locating a barrier, if there is any choice of position, it is advisable to avoid places where the roof is unusually high or where the width is excessive, but to locate it at some point on the roadway where the cross-sectional area is not over 60 to 70 sq.ft. Ordinarily the barrier units should not be more than 8 ft. wide and it is desirable to have the bottom of the barrier not over 7 to 8 ft. above the floor. An explosion passing through a place of this kind will have such velocity that the pioneering air waves will thoroughly mix the inert dust loading in the air, whereas if located in an extremely high place the mixing may not be so thorough and the explosion may pass over or under the barrier. In explosions of a feeble character, as demonstrated by the tests in the Experimental Mine, the flame usually does not completely fill the passage, yet the heat and gases would prove fatal.

## BARRIERS MEET SPECIFICATIONS

These suggested specifications for closed barriers are met by the Bureau of Mines' bottom-dumping trough barriers (not V-trough) and by the concentrated barriers detailed in the plans of Technical Paper 84 and Bulletin 167. Both these designs employ advance vanes and also supplemental tripping arrangements at the barriers themselves.

No doubt other designs will be evolved from time to time. Eventually it may be desirable, as knowledge of this subject grows through the application of barriers in commercial mines, that the Bureau of Mines establish permissibility specifications, like those for explosives and electrical machinery intended for use in dusty or gaseous operations.

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### Boy Gets Thrill

Boys living at Blue Diamond, Ky., had no chance to ride airplanes so that they took their air thrills by riding short distances on the traction rope of an aerial tramway used by the Blue Diamond Coal Co. This sport went on unknown to the coal company until one day recently when a 10-year-old boy grabbed the rope ahead of the bucket, failed to let go soon enough and was carried out across the 200-ft. deep valley, over a burning refuse dump and into the top of a 90-ft. dead-end tower shown in the background of the accompanying picture. There the lad let go just in time to avoid getting mangled and snatched a hold on the tower structure. He climbed down to home and mother Tram riding has ceased

# Mining Method Cuts Cost in Steep Anthracite

## Each Chain Pillar in Nearly Vertical Kidney Bed Serves as Battery for Breast Above—Maintenance of Gangways Is Low—Coal Boxes Support Hanging Wall at Wanamie

By **Dever C. Ashmead**
Anthracite Mining Engineer, U. S. Bureau of Mines,
Wilkes-Barre, Pa.

GENERALLY SPEAKING, steep-pitch mining in the Pennsylvania anthracite region is associated with the Southern, Eastern Middle and Western Middle fields. In certain portions of the Northern field, however, may be found comparatively small areas which require this type of mining. The methods here employed, though following the same general lines as those of other fields, differ from them more or less in detail. The engineer familiar with the flat mining of the Northern field when confronted with steep-pitch operations is liable to introduce variations to the methods usually followed that may or may not be of value to his brother engineer in other fields. This paper discusses conditions and the methods adopted at the Wanamie Colliery of the Lehigh & Wilkes-Barre Coal Co. at Wanamie, Pa., where gangway maintenance is low and costly batteries at main breast mouths are unnecessary. The section of the workings particularly referred to is that which lies in the No. 45 tunnel area of the Kidney bed. Fig. 1 is a map of this locality.

The coal here ranges in thickness from 5 to 7 ft. and the pitch from about 17 to 90 deg., as is shown in the accompanying cross section, Fig. 2. The particular part of the workings that will be described is that where the Kidney bed is standing vertical.

### STRUCTURE OF ADJACENT STRATA

The top rock or hanging wall consists of a mixture of coal, bone and slate, which ranges in thickness from 3 to 5 ft. Immediately above this, the main roof is a sandy slate. The foot wall or floor of the bed is soft sandstone. At the particular point shown, the gangway is approximately 300 ft. below the surface. The coal is of a shelly nature, but does not run as it does in some places in the lower coal fields. A sample, taken near chute No. 7 in the monkey heading, and analyzed at the Pittsburgh Station of the Bureau of Mines, showed the following results:

| | Coal, Air Dried | Coal, As Received |
|---|---|---|
| Moisture | 0.9 | 12.0 |
| Volatile matter | 5.4 | 4.8 |
| Fixed carbon | 82.1 | 72.9 |
| Ash | 11.6 | 10.3 |
| | 100.0 | 100.0 |

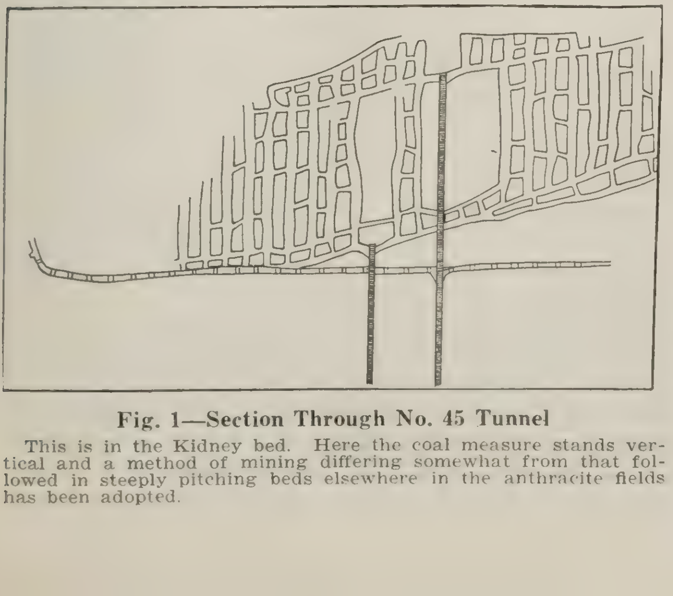

Fig. 1—Section Through No. 45 Tunnel

This is in the Kidney bed. Here the coal measure stands vertical and a method of mining differing somewhat from that followed in steeply pitching beds elsewhere in the anthracite fields has been adopted.

Gangways are driven in the coal 12 ft. wide and 6 ft. high clear of the rail. Chutes are turned off the gangway every 50 ft. and are driven 12 ft. wide. Thirty feet in the clear above the gangway a monkey heading is driven, that is, leaving a pillar 30 ft. thick between the passages. Breasts 24 ft. wide are turned off of this monkey heading on 50-ft. centers, leaving pillars between 26 ft. thick. The center lines of the pillars are directly over the centers of the chutes, as shown in Fig. 3, thus bringing the breasts directly over the centers of the chain pillars between the gangway and the monkey heading. This arrangement obviates the building of a battery at the mouth of each breast, for the coal in the box that is constructed in this opening rests directly on the chain pillar.

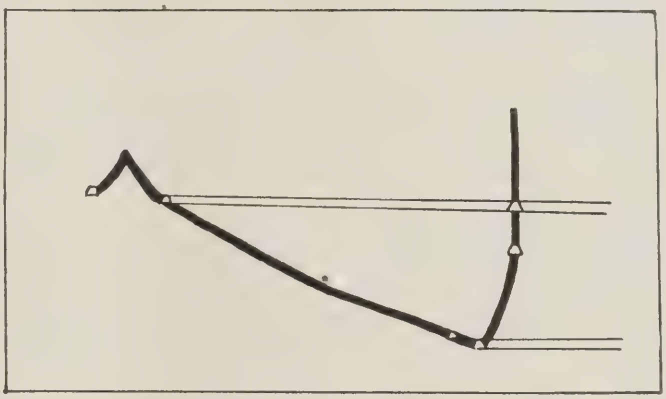

Fig. 2—Section of the Kidney Bed

At this point the gangway is approximately 300 ft. below the surface and the bed stands practically vertical. All passages are driven within the coal, leaving the rock of both foot- and hanging-walls intact.

After the gangway has been driven, a concrete stopping is built in each crosscut. This is poured from the top, the old wooden stopping being used as the bottom of the form. Two holes are left in the stopping so that material may be taken through for its construction. As soon as the stopping has been poured, however, these holes are sealed. When it is desired to reopen them all that is necessary is to knock out the wooden frame. A cross section of a crosscut is shown in Fig. 4.

When the time comes to commence driving a breast the two holes in the concrete are opened. One of these is about 8 ft. wide and serves as a coal chute. The other hole serves as a manway, being just wide enough for a person to pass through. A trap door is made

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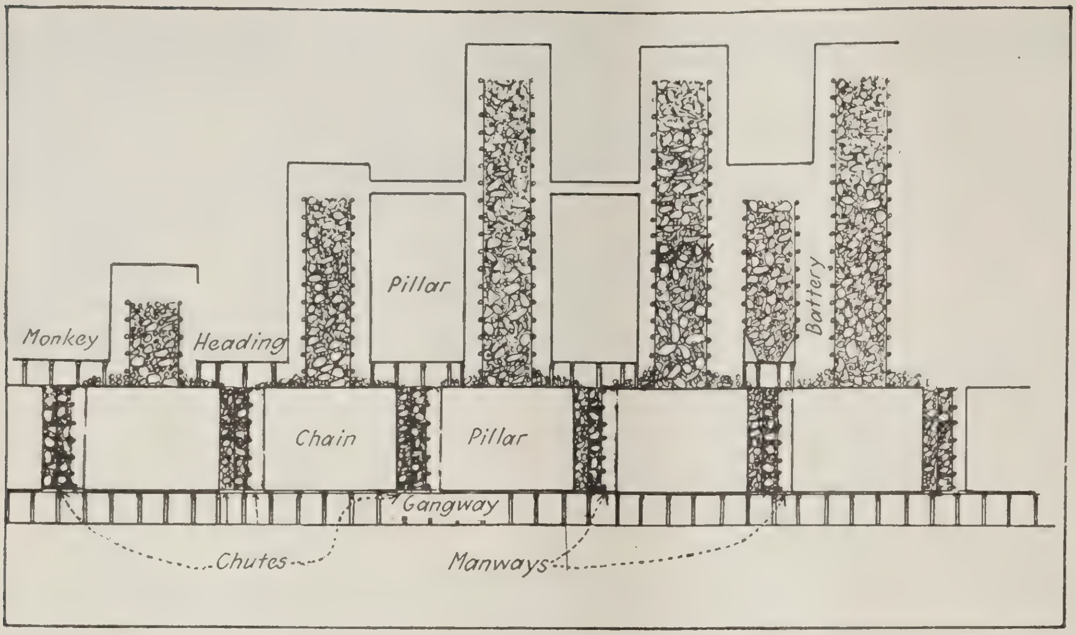


FIG. 3

**Details of Mining**

Above the gangway a monkey heading is driven, the two passages being connected by chutes. Above each pillar between the monkey and main heading a breast is driven upward, a coal box being carried up its center. This is kept full and gives footing for the miners as the breast advances. Surplus coal is shoveled over to the chutes upon either side from which it is drawn off into mine cars in the main heading.

to fit over this latter opening so that the air will not be short-circuited by it. When the chutes are filled with coal they act as stoppings.

Lagging on top of the timbers in the main gangway is made sufficiently strong so that it acts as a battery. When it is desired to load cars from the chutes, some of this lagging is removed, allowing the coal to pass from the chute into the mine car.

As previously stated, the center lines of the breasts coincide with the center lines of the chain pillars between the gangway and the monkey heading. This means that directly opposite the end of the breast is the face of a pillar. Consequently, each pillar becomes the battery for its breast. In starting the breast a shot is fired in the roof, immediately over the monkey heading, so that ventilation will be maintained. When the next round of holes has been drilled, the coal is shoveled into the nearest chute, after which the coal box is started and by the removal of coal, space is provided for the circulation of air through the monkey heading. As driving of the breast proceeds, the box is built upward so that the men have the coal in it upon which they can stand while working at the face. The box is kept constantly near the face and always full. Surplus coal mined while the breast is being driven is run down the manway and drawn off into the coal chutes from which, in turn, it is periodically withdrawn to mine cars. No coal is drawn from the bottom of the battery until the breast is finished.

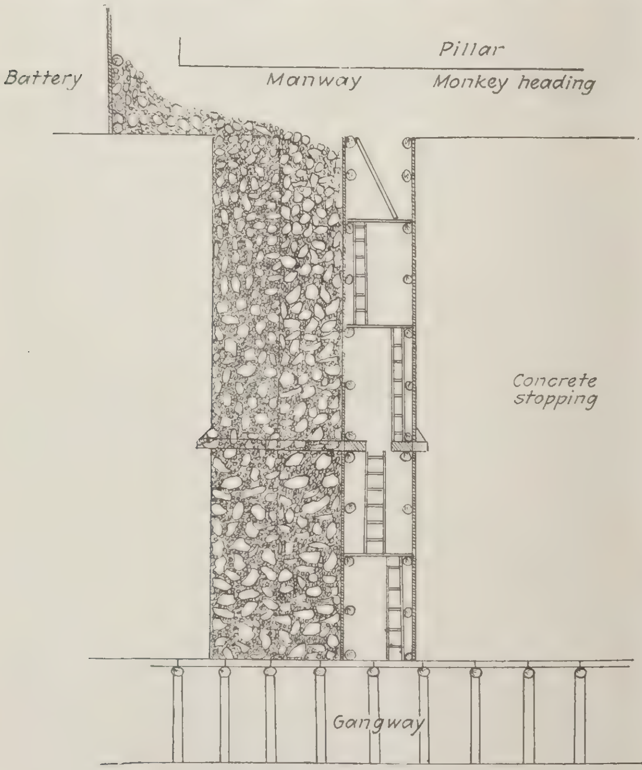


**Fig. 4—Details of the Coal Chute**

A heavy concrete stopping is built across this vertical passageway. This contains two openings. The larger of these permits the passage of coal but this material serves to plug this opening so far as the circulation of air is concerned. The smaller hole is used as a manway, the air being controlled by means of a trapdoor cover.

In the lift nearest the surface no reserve pillars are left. In the next lift below, however, two adjoining breasts out of every ten are left in place as a reserve pillar, thus forestalling the development of a squeeze and preventing any movement of the ground from traveling any appreciable distance.

Hand machines are utilized for drilling coal and jackhammer drills are employed in rock. Monobel is the explosive used, with cap and fuse to detonate it.

After the breasts have been finished in a section of the heading, second mining will be commenced. Two triangular pillars of coal are to be left immediately above the chute opposite the last pillar, one on each side with a battery placed between them. Next a box will be carried up as the pillar breast advances, until it reaches its limit. Then the coal from the breast on the outside of the one just driven will be drawn. While this is being done, a breast will be driven in the next pillar and the coal then drawn from the box in the breast just completed in the previous pillar and so on until all of the pillars have been mined out and the boxes drawn.

The chain pillar will be drawn back as rapidly as second mining is completed so that the gangways will not have to be maintained for any unreasonable length of time. The main saving effected by this method of mining results from the fact that it is not necessary to build expensive batteries at the mouths of the main breasts.

# Synchronous Apparatus Can Improve Power Factor

## Whether a Coal Company Generates or Buys Energy Much Loss and Expense in Alternating-Current Circuits May Be Avoided by the Use of Proper Corrective Devices

**By R. C. Muir**
Assistant Engineer, Industrial Dept. General Electric Co.,
Schenectady, N. Y.

THE IMPORTANCE of maintaining good power factor conditions in the alternating-current power circuits at coal mines is as great as in any other industry. Whether a coal company generates its own energy or purchases it, the operating power factor of its lines affects power costs thus reaching into the expense of producing coal. Investment in power-factor improvement devices might make much heavier expenditures for additional equipment unnecessary, not to speak of other savings to be mentioned in this article.

Before defining power factor, it might be stated that, in most alternating-current systems, the current lags behind the voltage, chiefly on account of the magnetizing current of transformers, induction motors, control equipment and other devices. This magnetizing current is a reactive current lagging 90 deg. behind the voltage, whereas the active current is in phase with the voltage. The total or actual current in the line is the resultant geometric sum of the two, the reactive current and the active current being its two components.

Referring to Fig. 1, which is a simple vector diagram by which most power factor problems can be solved, *OI* is the actual current; it lags behind the voltage *OE* by the angle $\phi$. The active component in phase with the voltage is *OX* and the reactive component 90 deg. out of phase is *XI*. The power factor of a circuit is the ratio of the active component of the current to the actual current, or the ratio $OX \div OI$ which is the cosine of angle $\phi$.

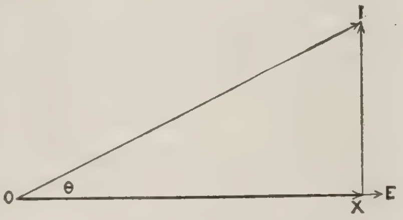


**Fig. 1 — Illustration of Power Factor**

The actual current in the line (*OI*) is made up of an energy component (*OX*) and a reactive component (*XI*).

The common definition of power factor is the ratio of the true power to the apparent power. The apparent in a three phase circuit is $\sqrt{3EI}$, which is kilovolt-amperes (kva.); the actual power is $\sqrt{3EI}$ cosine $\phi$, which is kva. times power factor and gives kilowatts (kw.). It is apparent that kilovolt-amperes and kilowatts are one and the same thing at unity power factor and that, for power factors other than unity, the current for a given kilowatt load increases inversely with the power factor.

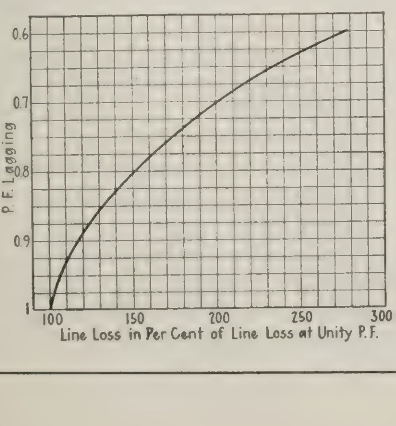


**Fig. 2 — Losses Rise With Poor Power Factors**

Even with a 70 per cent, constant, power-factor load the line loss is double what it would be at unity power factor.

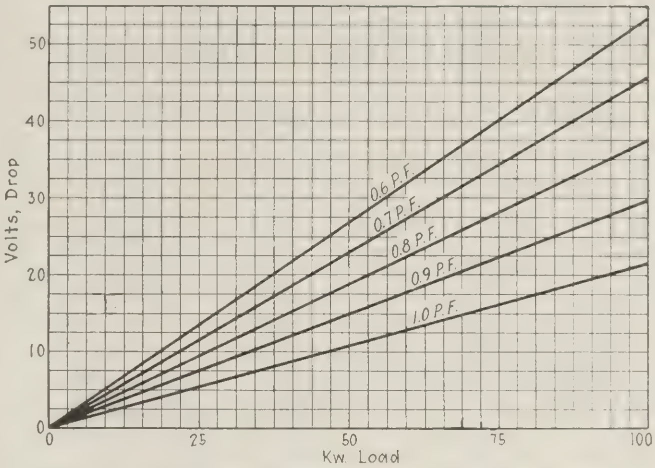


**Fig. 3—Line Losses on a 1,000-Ft., 440-Volt Line**

As the load increases, the line loss increases regardless of the power factor, but note how rapidly the line loss becomes greater when the power factor is poor.

Generators, transformers and power lines are limited by their current carrying capacity. Consequently, leaving aside certain other undesirable effects of low power factor on generator design and voltage regulation, the true power load which a given generator, transformer or line may carry is proportional to the power factor. In other words, the kilowatt load that can be carried at 80 per cent power factor is only 80 per cent of the kilowatt load that could be carried at unity power factor.

The investment in generators, transformers and lines, therefore, increases as the power factor decreases and, when this involves additional equipment, particularly underground cables, the increased investment mounts rapidly.

The $I^2R$, or heat loss is proportional to the square of the current and, consequently, increases inversely as the square of the power factor. Fig. 2 shows the relation between power factor and line loss for any circuit when carrying a constant kilowatt load. Fig. 3 shows the actual line loss for a 1,000-ft., three-phase, 60-cycle, 440-volt line of No. 0 wire at various loads and power factors. These curves terminate at the safe current-carrying capacity of this particular line and the various curves show clearly the increased line loss at the lower power factors as well as the decrease in safe load-carrying capacity with decrease in power factor.

The voltage drop increases rapidly with decreasing power factor, depending on the resistance and reactance of the line. Fig. 4 shows the line drop in a three-phase, 60-cycle, 440-volt circuit, 1,000 ft. long with 9-in. spacing consisting of No. 0 wire. It will be noted that the drop increases more rapidly than the power factor decreases, which, in turn, is due to the reactance of the circuit. This circuit might be considered as typical. The actual volts drop in the circuit carrying various loads at different power factors is shown in Fig. 5. These curves are intended to give a picture of the effect of the reduction of power factor and are not intended to be used in actual calculations.

Usually a 10 per cent variation in voltage either way from normal has very little effect upon the operation of induction motors other than upon the slip. Voltages below normal reduce the speed of the motor and, consequently, affect production adversely. The torque of induction motors varies with the square of the applied voltage; consequently, if the voltage drops more than 10 per cent below normal, it is not only the abnormal reduction in speed due to increased slip that becomes serious, but also the likelihood of stalling the motors and other apparent disadvantages, such as lower efficiency and over-heating of the motor. Other disadvantages of abnormally low voltage, such as poor lighting, are too well-known to be discussed here.

Consequently, low power-factor circuits require expensive voltage control equipment or the voltage regulation is inferior, and operating and production difficulties arise. It is evident, from this, that power factors other than unity involve additional investment in generators, transformers, lines and regulating devices.

The supply of reactive current, incident in power factors lower than unity, should be considered a service rendered by the power house, and a charge for it is entirely justified when based upon the expense involved. This is being done by a large number of power companies and, undoubtedly, a more or less uniform method of determining this charge will be adopted eventually. This is sometimes spoken of as a penalty, but it is not really a penalty but an additional charge for additional service for supplying the reactive load.

It is apparent, from the disadvantages of low power factor, that there are corresponding advantages of good power factor and, therefore, it is to the advantage of the power user, whether he generates his own power or purchases it, to obtain the highest possible power factor consistent with economy. It is a problem of balancing the benefits obtained, such as lower power costs, lower investments within the plant and improved operating conditions, against the increased cost of equipment necessary to improve the power factor.

The advantages obtained naturally depend largely upon the particular cases. Almost unbelievable results are obtained where conditions of the existing equipment and distribution system have become critical because limitations of current-carrying capacity have been reached and conditions of operation have become so bad due to low voltage that something had to be done immediately.

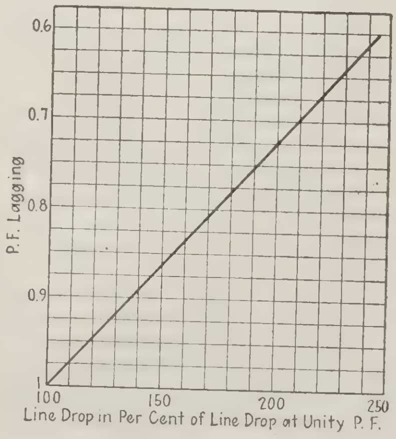


**Fig. 4—How Line Drop Increases**

This represents the effect of low power factors on the same line as illustrated in Fig. 3. The kilowatt load is constant over a 1,000-ft., three-phase, 60-cycle circuit of No. 0 wire. The power is 440 volts at the motor

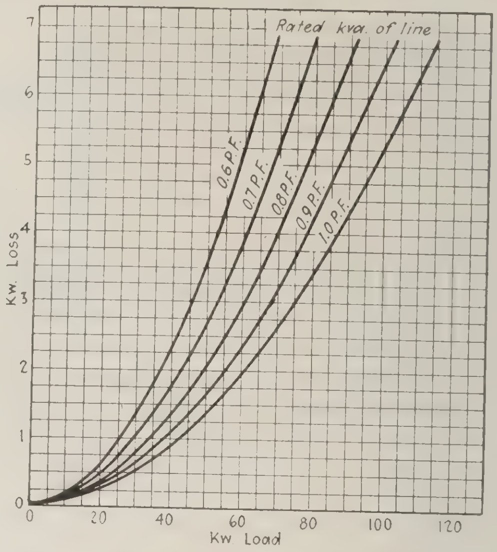


**Fig. 5—Loss of Voltage on 440-Volt Line**

In one case the installation of a 500-kva., synchronous, condenser outfit and a 300-kva., synchronous condenser has permitted the addition of a 500-hp. load without any other changes in equipment. If this had not been done a new turbine generator, an additional line, and two banks of transformers would have been required, costing several times as much as the synchronous condensers.

In another case, the necessity for the installation of a turbine generator, additional lines and transformers was obviated by the use of a low leading power-factor, synchronous motor-generator set connected to the load side of the transformers at the point where the additional load was required.

In another instance, the installation of a 300-kva. unit of static condensers saved the investment of a new engine-driven generator unit which would have cost four times as much as the static condensers.

Each case carried additional advantages in decreasing the losses or increasing the economy of the plant. Naturally, where conditions have not become critical, the immediate showing will not be as great as in the cases mentioned, but the ultimate beneficial results may be just as attractive.

Improving the power factor might mean the avoidance of installing additional generators, transformers or lines. It might mean a considerable saving in power bills due to better rates and, in addition, a saving in losses, in transformers, lines and motors sufficient to warrant investment of power factor improvement devices. It might mean an improvement of voltage conditions which would increase production as a result of maintaining rated speeds of induction motors. Good voltage regulation might further mean a large saving in maintenance, as low voltage usually results in overheating of motors, transformers and cables.

# Mr. Lewis Seeks a Wider Audience

JOHN L. LEWIS, by virtue of his mastery of the United Mine Workers, is in the position where anything he may care to say respecting the coal problem will command attention—if not respect. Even the repetition of trite truths must be listened to with a humble show of eager interest when they roll from his lips. Such are the rewards of power. Therefore, when he claims consideration as a full-fledged author (*The Miners' Fight for American Standards;* Bell Publishing Co., Indianapolis, Ind., 189 pp., $2), he is assured in advance of a dutiful circle of readers whose size many a veteran writer might well envy.

Mr. Lewis presents twin theses, wrapped in a verbal orgy of flag-waving that threatens the supremacy of Mr. Cohan as the unexampled exponent of 110 per cent Americanism. His first thesis is that all the improvements which have taken place in mining methods and living standards in mining communities are the fruits of the activities of organized labor. The necessary corollary, developed with an effective restraint of heat, is that the non-union operations are the source of all the un-American tendencies which would drag industry back to serfdom. The second major thesis is that the operators as a whole—and here Mr. Lewis' pen is a spear that knows no brother, smiting alike union and non-union producers—have failed to take any constructive steps to put bituminous mining on a more solid foundation and that, therefore, it has devolved upon the miners' organization to save "capitalism" from its own follies.

These themes are developed through a dozen chapters in which the author discourses on "The American Spirit and Coal," fundamental evils of the industry, wages, mismanagement, freight rates, labor relations, overhead, the check-off and living conditions, to the end that the reader may agree with the final conclusion that the salvation and the freedom of the industry can come only through complete recognition of the union. The paradox escapes Mr. Lewis entirely. Admitting at the outset that "the coal industry was not conceived, planned and blue-printed by scientific supermen or young critics just out of Harvard," Mr. Lewis sees in its somewhat haphazard growth and the many mistakes of inexperience, no support for the theory that government control would better conditions.

Mr. Lewis frankly confesses that the union "has no patent cure-all in its pantry" for the ills of the industry, but he is confident that the basic evil of overdevelopment is now on the way to elimination. Improved railroad service has made it impossible to boost prices on a car shortage scare; the long-term agreement in the union fields forestalls strikes "and leaves no hope to the non-union operator of profiteering at the expense of the union fields during suspensions." Mr. Lewis, in effect, charges the non-union districts with a conspiracy to bankrupt the union mines, but gleefully asserts that the non-union producers "are gradually bankrupting themselves in the vain effort to overcome geography by selling enslaved man-power in competition with coal. At the same time the struggle in the union fields is slowly weeding out uneconomic mines, obsolete equipment and incompetent management." An untrammeled functioning of the law of supply and demand "is working a cure."

To yield now to demands for a revision in wages, he argues, "would serve only to prolong the maladies of the industry, while sacrificing the rights of the miners." Mr. Lewis still clings resolutely to the claim that any reduction in union rates would be met by further reductions in non-union wages, although in the same chapter he states that the non-union fields have already "cut wages and coal prices to the bone." The undisputed fact that the present wage policy of the union is encouraging non-union production is passed over in silence.

Hit-and-miss methods of operation, according to Mr. Lewis, have been the rule in mine management. "The inefficiency and incompetence of superintendents and mine bosses as regards the correlation of mine operation is a plague on the industry," he declares, and calls upon the United States Coal Commission—heretofore roundly damned by the union—to prove his statements. Operators have neglected the opportunities to mechanize their mines, they have been backward in improvements and now that the lean days are upon them, says Mr. Lewis, they cannot cut wages "to pay the costs of your business stupidity."

### SIDESTEPS LOCAL STRIKES

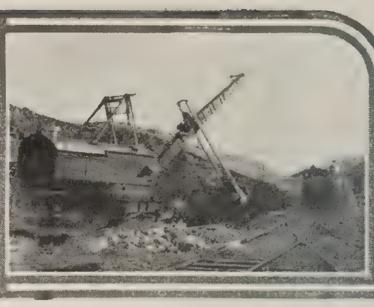
The author repeats his boast that the international union has never violated a contract. In the next breath, however, he acknowledges that local strikes are many and sees no way to end them under existing conditions. "These local struggles," he pleads in defense, "really originated twenty million years ago in the geological causes which have determined the working problem of various coal fields, coal seams and individual mines, different from the similar problem presented anywhere else." Apparently conscious that this defense may not be convincing, he shifts the responsibility to mine managements and in so doing tries to lift local strikes out of the category of contract violations.

Mr. Lewis enters a vigorous denial to the charge that the union has opposed mechanization. He insists, however, that "mine labor demands and will enforce the right to such consultation in the period of mechanization as will prevent the sacrifice of its standards in the process." He suggests, with enough truth in some cases to give sting to his words, that one thing which is burdening coal production is an unwise multiplication of sales efforts. Many consolidations, he declares, have been rendered ineffective because of excessive property valuations and because they were top-heavy with ornamental executives.

The book is marred, not only by certain hyperbolic excesses of style, but also by senseless misstatements of facts. Mr. Lewis is most interesting when he is calmly expository, least convincing when he adopts Ellis Searles' swashbuckling style of verbal assault. The volume, of course, is undisguised propaganda. We doubt whether its author would claim otherwise. Mr. Lewis, with his knowledge of labor policies and his ability to put them into pungent English, is in a position to write a non-argumentative, though partisan, exposition of the philosophy of the United Mine Workers which would be a permanent and a valuable contribution to economic literature. *The Miners' Fight for American Standards* never comes within striking distance of that goal.

SYDNEY A. HALE.

# News Of the Industry



## Anthracite Miners' Wage Demands at Atlantic City May Reach 30 per Cent; Operators Ready to Oppose Strike

Joint conferences in what promise to be the most momentous wage negotiations in the history of the anthracite industry since the famous strike of 1902 will open at Atlantic City, N. J., this afternoon, July 9. Representatives of the operators and the United Mine Workers will take up the 15 demands framed at the tri-district convention of the miners held at Scranton, Pa., last week. These demands include planks for general increases in pay to both day and tonnage men, a five-day week and several other proposals which would add materially to the labor cost of production. Payroll checks now being made may show the wage increases would total as high as 30 per cent.

The operators met in preliminary conference at the offices of S. D. Warriner in Philadelphia, Pa., Tuesday afternoon and moved on to the Hotel Traymore in Atlantic City yesterday to map out their lines of battle in the contest with the union. It goes without saying that the producers will fight vigorously any proposal to institute the check-off in the anthracite region. There is, too, a strong sentiment in favor of a reduction in wages to lessen the competitive pressure upon anthracite sales. John L. Lewis, international president of the union, however, has declared unequivocally that the miners will not agree to any downward revision in pay.

### Lewis Gets Early Advantage

As in times past, Mr. Lewis and his associates have again seized the initial advantage by making a public confession and adoption of their demands. When stories that the miners would demand a 10 to 20 per cent increase first began to appear in the daily newspapers, about seven weeks ago, they were treated as toy balloons sent up by the union to test public sentiment. Up until the Scranton convention there were many observers who believed that the union would follow the same tactics it pursued at Jacksonville in 1924 and ask for a renewal of the existing agreement. There were some anthracite men who were resigned to that as inevitable. Those who took such a view felt that the rates now being paid were out of line, but saw no escape from them because they feared political intervention would come before it would be possible to win a reduction.

The truculent character of the keynote address delivered by Mr. Lewis at Scranton and the demands embodied in the convention platform, however, have driven operators holding such views into the ranks of the group that believes a determined effort should be made to reduce production costs.

Though no official statement of the producers' position had been made at the time these lines were written, it is betraying no secret to state that the operators are a unit in their opposition to any increase in labor costs on hard coal. There was a time when some of them would have welcomed a short suspension—not to boost prices, but to bring supply more in line with demand. Such an interruption in mining would no longer be welcomed because the industry realizes that the purpose of a shutdown of three to six weeks would be grossly misinterpreted.

### See Disaster in Higher Wages

In the brief negotiations preceding the 1922 strike the operators endeavored unsuccessfully to persuade the union representatives to agree to continue operations pending a settlement of the issues before the joint conference and by unrestricted arbitration. There is reason to believe that the operators would be willing to repeat these offers in the interest of the public.

In spite of statements that anthracite production is curtailed by design and that demand exceeds supply, the operators have had growing sales resistance ever since the war and realize fully that tamely to submit now to wage increases that would raise the price of coal would invite disaster.

With the exception of the check-off demand, the scale committee's report to the Scranton convention suffered no opposition. George Horne, of Locustdale, supported by a dozen delegates, demanded that the check-off be excluded from the demands. His voice in the convention was drowned by the howling and booing of the majority of delegates present.

The presentation of the demands will be followed by a suspension of mining, according to Andrew Mattey, president of the Hazleton district, who in the closing hour of the tri-district convention in Scranton on last Thursday, told the delegates to prepare for a shutdown on Aug. 31. Said he: "When your agreement expires there will be no new agreement reached, and the mines will close because the operators have 10,000,000 tons of coal in storage. When the mines are closed this will begin to move, but at higher prices. Instead of paying $18 for coal in some place the consumer will be paying $25. For this you will be blamed. The miners will get the blame; the operators will get the dough."

**Christ J. Golden**

President of District 9, United Mine Workers, and chairman of anthracite scale committee.

### Ask Two-Year Contract

The union demands are as follows:

"(1) We demand the next contract be for a period of two years, with complete recognition of the United Mine Workers of America, Districts 1, 7 and 9.

"(2) We demand that the contract wage scale shall be increased 10 per cent; all day men shall be granted an increase of $1 per day; that the contract laborers' increase now being paid by the operators shall be added to the contract rates; and that the differential in cents per day between classifications of labor previous to the award of the United States Anthracite Coal Commission shall be restored.

"(3) We demand uniformity and equalization of all day rates and that the consideration rate of each colliery shall be equivalent to the average daily earnings of contract miners under normal conditions and that for dead work performed by the contract miner he shall be paid this consideration rate; and that skilled mechanics, such as carpenters, blacksmiths, &c., shall be paid the recognized standard rates existing in the region; and that engineers and pumpmen who do repair work on their engines and pumps shall be paid the recognized mechanic's rate for this repair work; that first-class hoisting engineers shall be paid a more substantial rate of wages in keeping with the responsibilities and nature of the work; and that all daymen shall be paid time and one-half for overtime and double time for Sundays and holidays.

"(4) We demand that where coal is paid for by the car it shall be charged and payment shall be made on the ton basis of 2,240 lb., and where dockage and penalties are now imposed for refuse that the amount of refuse to be permitted in any car shall be fixed by the mine committee and colliery officials in conformity with the agreement, and that the present unreasonable penalties and dockage shall be abolished.

"(5) We demand payment for all sheet iron props, timber, forepoling, extra and abnormal shoveling where such is not now paid for; and that the same full rates shall be paid for skipping as for splitting pillars, both advancing and retreating; advanced openings driven for development purposes shall be paid for on the proper basis covering such work; that in thin veins, where the pitch is not sufficient to carry the coal on the bottom, the distance of the working places shall not exceed 150 ft., and that jackhammers and air necessary for their operation shall be supplied to miners free of charge, and that company workers shall be supplied with tools for use in their work free of charge; and that electric lamps and batteries where used shall be supplied free of charge.

"(6) We demand that a uniform rate of twenty (20) cents per inch be paid for refuse in all kinds of mining up to ten (10) ft., wide, and that the rate for blasting top and bottom rock shall not be less than thirty (30) cents per inch, with the understanding that these rates are to be the minimum, not affecting higher rates that exist.

"(7) On the general improvement of conditions, looking toward greater efficiency in operation, and as an evidence of simple justice to those affected, we demand that the account of all cars loaded by the miner shall be credited at the working place; that maintenance men shall be continued at their regular necessary continuous occupations, and not replaced by others during broken time; that a five-day work week be established, which would permit of the working of the usual average number of days per year and provide for greater efficiency in operation and the elimination of the haphazard system of enforced idleness on different days, as is now the practice; that contract miners shall be provided with work at the consideration rate when, through no fault of their own, they are not permitted to work at the face of their regular working place; that all drivers should receive consideration for handling mules before and after quitting time; that in the laying off of men the older men in point of service shall have seniority rights, and likewise the older men in point of service who shall be out of employment shall be returned to such occupations available in conformity with the principle of seniority; that in the adjustment of grievances every possible improvement in the present system shall be made so as to provide for a more prompt and satisfactory determination of such grievances under the contract; that a more comprehensive method be outlined to protect the miners in having them placed on consideration work when, through abnormal conditions, they are unable to make wages, that employees of rock and stripping contractors be brought under the terms of the general agreement, with the same privileges and rights of all other employees; that all employees of diamond drill contractors be brought under the agreement and that their rates shall be uniform and standardized as on a basis in keeping with the skill and knowledge required in the work."

Supplementary recommendations attached to the demands were:

"(1) Repairs, rebuilding and erection of new buildings are necessary to relieve the housing situation in many sections of the anthracite region, and we therefore recommend that our scale committee use every effort to have the general housing and sanitary condition of the coal companies' properties improved upon as much as possible.

"(2) A number of coal companies which operate one or more collieries at times when market conditions are dull, shut down some collieries completely and keep others in operation. We consider this most unfair and recommend that our scale committee use every effort to bring about an equal division of work at all collieries under any given company."

## Harry C. Adams Dies

Harry C. Adams, 67, coal operator of Chicago, died at his home 420 East 50th St., June 27, after several months of declining health. He was president of the Peerless Coal Co., owning the Peerless mine at Springfield, Ill., and president of the Springfield Terminal Railroad Co., which runs a small connecting line serving several mines in the Springfield district. Mr. Adams also was head of the Central Illinois Coal Operators Association and for years was a spokesman for his district in labor negotiations.

Harry C. Adams

Mr. Adams rose from railroad ranks, having made his start in the Columbus (Ohio) freight office of the Big Four. He became secretary to the general manager of the Ohio Central Coal Co., which later expanded as the Sunday Creek Coal Co. After another period in railroading he was made Chicago agent for the Turney & Jones Coal Co. In 1900 he and John S. Jones formed the Jones & Adams Coal Co. In 1915 he became president when Mr. Jones went to Columbus to be head of the Sunday Creek Coal Co. Jones & Adams eventually dissolved and Mr. Adams was made president of the Peerless Coal Co., in which the late Francis S. Peabody was interested. The Peabody Coal Co. has functioned for several years as operating engineers for Mr. Adams' company.

## M. K. & T. to Open New Kansas Coal Field

The opening of an important new bituminous coal field in Kansas was presaged in the announcement on June 30 of the discovery of a 5-ft. vein of coal in Labette County. The new field, while in the southeastern part of the state, lies some distance west of the present southeastern Kansas field. In places the new vein is said to attain a thickness of 6 ft. The Cherokee and Crawford County veins, to which southeastern Kansas operation heretofore has been confined, run from 20 to 40 in. thick.

The Pittsburg & Midway Coal Co., Charles F. Spencer, of Pittsburg, president, announced the discovery after it had taken options on the mineral rights of 5,600 acres of land in the new field for the Missouri, Kansas & Texas R.R. Farmers were paid $35 an acre for the mineral options, but it is understood that the railroad interests were ready to pay $75 more an acre for surface rights, where needed. The vein lies at a depth of from 600 to 800 ft.

The opening of the new field will be a fulfillment of the desire of the railroad to establish a coal supply on its own lines. Many oil-burning roads of the southwest in recent months have been considering the advisability of going back to coal in the interest of economy. The Missouri, Kansas & Texas was one of the first to take action when, a few weeks ago, it reconverted twenty of its locomotives out of the Parsons (Kan.) shops to coal.

## J. K. Dering Passes Away

J. K. Dering of Chicago, head of the J. K. Dering Coal Co., died at 6 o'clock in the morning of July 6 after a brief acute illness. Mr. Dering, whose company now operates mines in Indiana and southern Illinois, had been a leading figure in the coal industry of the Middle West for a generation. He was markedly successful financially and of late years had been able to escape from the grind of business for many lengthy sojourns on his plantation in Mexico. The principal responsibilities of his coal operations recently have rested on James B. Pauley but Mr. Dering always was in close touch with coal affairs and his opinions were much sought after. His brother, Charles L. Dering, who survives him, conducts a coal jobbing business in Chicago.

## High Anthracite Prices Due to Trade Monopoly Says Trade Board Report

Monopolies in the anthracite fields and the pyramiding of prices by independents, wholesale and retail dealers are largely responsible for premium prices to consumers, according to a report to Congress by the Federal Trade Commission made public July 6.

"In order that the present generation may have an adequate supply of anthracite at a reasonable price, more effective competition must be established," the commission said. "Complete restoration of competition is not only practicable in the anthracite industry in the opinion of this commission, but, also, is preferable to price regulation, which has often been advocated with respect to this industry."

The commission feels that more information as to the actual conditions in the coal industry should be obtained and placed before the public. The suggestion is made that Congress set up a federal agency to obtain and publish currently "data on production, prices, costs and profits in the coal industry."

The report says the lack of current information in the frequently recurring emergencies in the coal trade is "the greatest obstacle to intelligent action on the part of the public and the government," and adds that "the premium prices of 1923 were the result of an anticipated shortage and a panic demand due largely to general ignorance of the real conditions."

According to the commission, the investigation just completed has revealed that the independents ran their prices above those of the eight big companies when there was fear of a shortage, or an actual shortage, and that the wholesalers also jumped their prices to the retailers and the retailers to the consumers.

The principal points developed by the investigation are as follows:

"A long period of monopolistic combination in the anthracite industry (now largely abated by recent judicial decrees) has resulted in concentration in the ownership of coal lands; in the failure to increase mining capacity adequately, so that production has not developed with demand; in the establishment of an unduly high general price level, and, in times of temporary or apparent shortage, in high premium prices at the mine which have encouraged and facilitated the taking of excessive profits both by wholesalers and retailers.

### Blames High Premium Prices

"The existence of high premium prices at the mine has also led to speculative sales among wholesalers, thereby further enhancing the price paid by the retailer. During August and September, 1923, from one-third to more than two-fifths of the reported sales of premium anthracite was handled by two or more wholesalers before being sold to a retailer."

The report has attracted interest in some quarters because of the threat by John L. Lewis, president of the United Mine Workers, of calling out the bituminous coal miners if the operators continue alleged violations of the Jacksonville agreement. A suspension in the anthracite fields also is not unlikely in view of the miners' demand for a 10 per cent increase in wages, which the operators are expected to meet with a counter demand of a reduction.

**John L. Lewis**
President of the United Mine Workers

## Sargent to Ask Rehearing in Trade Association Cases

In announcing his intention to file petitions for rehearings in the Maple Flooring and Cement Manufacturers' Protective Association cases, the Attorney General made it clear that he is in no way challenging the principles laid down by the Supreme Court, but simply is attempting to show that there was violation of law in these particular instances. The Attorney General's statement follows:

"Petitions for rehearing in these cases are in course of preparation and will be presented to the Solicitor General within a few days. Leave was granted by the Supreme Court on June 8 to file such petitions within 30 days.

"The object of the petitions will not be to obtain a reconsideration of the principles of law enunciated by the Supreme Court in its recent decisions but to point out that the evidence in these cases brings them within prior decisions of the Supreme Court, the authority of which has not been questioned. In other words, the government will not take the position that the Supreme Court erred in holding that the mere collection and dissemination of trade statistics is in itself unlawful but will endeavor to point out that the evidence in the records shows that both the Maple Flooring Association and the Cement Association were co-operating in the use of such information for the purpose of maintaining prices.

"The whole effort will be to show that the evidence leads irresistibly to the conclusion that the defendants, through their associations, had agreed to maintain prices and otherwise restrain trade within the prior decisions of the Supreme Court in the Hardwood Lumber and Linseed Oil cases."

## Two Coal Mergers in Ohio Nearly Completed

Consolidation of coal companies operating in the eastern Ohio No. 8 district is expected to be announced within a few days. Operating and financial interests have been working over the details for more than six months and nearly all the difficulties are believed to have been overcome.

It is understood that at least two mergers are being considered, but that one of them far overshadows the other in tonnage involved. When both are completed practically the entire No. 8 field will be controlled by two corporations.

The larger of the two consolidations is expected to consist of the Youghiogheny & Ohio Coal Co., Lorain Coal & Dock Co., Clarkson Coal Mining Co., Pittsburgh & Ohio Mining Co., Maher Collieries Co., Central Coal Co., United States Coal Co. and two or three smaller concerns. The smaller consolidation is expected to center around the Wheeling & Lake Erie Coal Co., the Hanna property.

A few companies are understood to be considering joining the larger consolidation after the first alignment is completed, with the result that the company may grow by accretion for some time after the new corporation is formed.

The amount and nature of new financing which may be undertaken is not yet known to the coal trade.

S. H. Robbins, president of the Youghiogheny & Ohio company and chairman of the board of the Midland Bank of Cleveland, is to be chairman of the new company. R. L. Wildermuth, of Columbus, vice-president and general manager of the Lorain Coal & Dock Co., is to be vice-president in charge of operations, and H. L. Findley, vice-president of the Youghiogheny & Ohio company, is to be vice-president in charge of sales. If a president has been selected his name has not become public. Headquarters will be in Cleveland.

## Less Coal Consumed by Industries in May

Industry used 3,158,000 tons less coal in May than in April, according to a report by the National Association of Purchasing Agents. The total is estimated at 29,548,000 tons, not including coal used for heating buildings, which is approximately 2,000,000 tons less than was used in the same month last year and about eleven million tons less than was used in May, 1923. Economies effected in the burning of coal during the last two years enable concerns to use less fuel for manufacturing the same amount of material.

Coal stocks on hand in industry at present are the smallest since the association has been compiling figures, a total of 39,317,000 net tons being estimated on hand June 1. This is sufficient for 40 days' supply in industry based on the amount consumed in May. Of the firms reporting, 18 per cent used more coal than in April, 53 per cent the same amount and 29 per cent less.

# Congress May Intervene if Strike Is Protracted; Hard-Coal Operators Ready for Finish Fight on Check-off

**By Paul Wooton**

Washington Correspondent of *Coal Age*

While John L. Lewis' threat of a bituminous-coal strike took Washington by surprise, there is no thought that he will carry it out. There is increasing conviction, however, that a suspension in the anthracite region is most likely. Competition from oil and other fuels makes the anthracite operators doubly anxious to take advantage of what seems to them the most favorable opportunity in many years to reduce their labor costs.

They had hoped that the bad situation in the Central Competitive Field would result in some agreement which would pave the way for a reduction in the anthracite region also, but apparently the possibility of trouble in the anthracite fields has been the one thing that has prevented such an understanding.

Just how an anthracite strike will result in an increased demand for coal from the Central Competitive Field is not thoroughly understood here. The Northwest will have most of its coal before the present agreement expires. The use of anthracite in the Middle West no longer is large and most of the requirements of that section already have been filled. The substitution will be confined to New England and the North Atlantic seaboard states. Substitution there more naturally would be with non-union coal. One of the reasons why the authracite producers are so insistent upon a wage reduction is the very active efforts being made to sell smokeless coal in that region.

### Will Fight for Check-Off

Information reaching Washington is to the effect that the effort to obtain the check-off in the anthracite districts will be more determined than on any previous occasion. For the ordinary purposes of the union the button does very well, but now the great need is for special assessments.

The campaign to organize the non-union districts requires large amounts of money. Enough cannot be raised for that purpose from the bituminous miners when so many of them are out of employment. Every two-dollar assessment in the anthracite districts will raise more than $300,000.

Even with the competition that they are facing and the difficulty of passing on increased costs, it is conceivable that enough pressure cou'd be brought to cause the anthracite operators to yield on a question of wage, but those familiar with sentiment among them declare that no amount of pressure will induce them to accept the check-off. They are even more determined now than ever before not to place in the hands of the mine worker this weapon which could be turned with such effect upon them and upon the bituminous operators, with whom, after all, there is a close community of interest.

While there is reason to believe that the union is preparing to make a determined fight for the check-off, it is at a disadvantage in that it might alienate the sympathy of the railroad unions. Reliance is being placed on them to cripple the distribution of non-union coal. They probably would not cooperate very heartily or effectively were the check-off the issue. Railroad workers do not conceal their contempt for this evidence of lack of loyalty and they do not hold in high regard a union which must resort to such a method to collect its dues.

As is the rule in these clashes in the coal industry, no opportunity will be given the participants to fight out their differences without political interference. Mr. Lewis, as in the past, will find a way to bring about intervention by some authority, state or federal. In view of the disastrous consequences to the operators of such intervention in the past, it may be that in this instance they will insist on being let alone.

If differences have not been adjusted before Congress convenes in December that body is certain to take a hand, even if administrative officials have not intervened before that time.

The one thing that may influence the anthracite operators to consent to government arbitration, or to accept a compromise that will be satisfactory to the union, will be the fear of federal regulation. It may become a question of deciding between the lesser of two evils. The bituminous operators have more fear of regulation that have the operators in the anthracite field. If regulation is threatened, the bituminous operators are likely to join forces with those who would favor nearly any compromise before precipitating a fight in Congress on regulation. The sentiment among the anthracite operators, however, is said to be for a finish fight on the check-off at least. They are said to feel that the question of regulating the coal industry must come up sooner or later and that the chances of beating it are likely to be as good in the next Congress as at any time in the future.

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## Allow 20 per Cent Wage Cut In Northern Colorado

Reduction of the wages of coal miners to what is known as the 1919 scale was allowed nine coal mining companies in the northern Colorado field by the State Industrial Commission on June 26. The award constitutes a reduction of 20 per cent from present wages.

The award is a partial victory for the miners. The companies had asked permission for a reduction to the 1917 scale. That would have meant a reduction of approximately 30 per cent.

### *Green Urges Co-operation By Church and Labor*

The happiness of the American people can be "best promoted" through an understanding and cooperation between the religious forces of the nation and its organized labor groups, declared William Green, president of the American Federation of Labor, at Buffalo, N. Y., June 28.

Addressing the New York State Christian Endeavor Union, Mr. Green urged "co-operation on all subjects of common interest embodying the essence of morality, justice and fair dealing," and said that "regarding those subjects upon which we may not be in accord we can, at least, maintain a charitable and sympathetic attitude toward each other."

The Federation, he said, will continue its fight for compulsory education, for "if men and women are to exercise the power of self-government, above all they must understand our form of government, its institutions, its ideals and its structure."

The commission made its findings after extended hearings at several coal camps, at which representatives of the operators and miners took the witness stand. The reduction was opposed by the miners. Just what the men will do now is not known to the members of the commission.

The companies affected are the William E. Russell Coal Co., the Consolidated Coal & Coke Co., the Boulder Valley Coal Co., the National Fuel Co., the Grand Junction Mining & Fuel Co., the Big Four Coal & Coke Co., the Crown Fuel Co., S. Domenico & Sons and the Clayton Coal Co.

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## Crowe Mine Squabble Goes To International Union

The controversy between representatives of union miners and the J. R. Crowe Coal Co. over the operation of the two Crowe mines at Henryetta, Okla., on an open-shop basis will be referred by the union representatives in the Southwestern district to the international union headquarters. A conference at Kansas City, Mo., last week between officials of the Crowe company and the union did not result in an agreement. The mines are now operating part time on the open-shop plan. Union men are picketing the properties.

These union officials were at the conference: William Dalrymple, president of the Oklahoma district, No. 21; Daniel O'Connell, vice-president of the Kansas district, No. 14; Harry W. Burr, secretary-treasurer of the Kansas district; James Fitzgibbons, Kansas district; James Bell, district board member of Oklahoma; John S. Cochran and D. A. Frampton, international union representatives. Mr. Crowe and H. D. Buchanan, vice-president of the Crowe company, represented the coal company.

## Watson Tells Lewis Union Agreement "Collapsed" and Thus Was Not "Abrogated"

The agreement between miners and operators in West Virginia and elsewhere "collapsed" and therefore the Consolidation Coal Co. did not "abrogate" it. This was the answer C. W. Watson, chairman of the board of the Consolidation, made to John L. Lewis, president of the United Mine Workers, in reply to the latter's charge of contract breaking. Mr. Lewis made the charge against Mr. Watson's company, the Pittsburgh Coal Co. and the Bethlehem Mines Corporation during a speech at the anthracite miners' convention in Scranton, Pa., June 30. Mr. Lewis threatened a nation-wide soft-coal strike "to enforce the Jacksonville agreement," but he has made no public move since then to bring about a strike. However, correspondence between Mr. Lewis and Mr. Watson dealing with the "abrogation of contract" and setting forth both sides of the case has been made public within the week.

In the Lewis-Watson correspondence Mr. Lewis first wired Mr. Watson asking if it was true the Consolidation Coal Co. was going to abrogate the contract June 1. Mr. Watson replied that the Fairmont mines of the company had been shut down because further operation had become impossible in the face of large losses due to the existing wage contract. He said 1,100 employees had left the Consolidation, many to work for competitors at wages below the union scale, and that many others, who had been employed on part time, had asked the company for work under conditions offered at non-union mines.

Mr. Lewis sent back a telegram reminding Mr. Watson that the Consolidation had signed the wage agreement, which still had 22 months to run, and that he could see no reason why the Consolidation should break the contract because other companies had done so.

### Suggests Inspection Tour

In answer, Mr. Watson said that Mr. Lewis was unfamiliar with conditions in the West Virginia field and suggested that they make a tour of inspection together.

Mr. Lewis countered that he did not question Mr. Watson's statements that much coal was being produced in West Virginia under non-union conditions at reduced wages, but declared that this was due to the action of large numbers of operators in the fields in repudiating the wage contract. He recalled the signing of the agreement by the Consolidation and said that he expected the company to abide by it.

Mr. Watson wired back that he was mailing a memorandum covering conditions in the West Virginia fields. In this he set forth that it had been proved that the wage agreement no longer existed as a working reality because of repudiation by both sides. Production was being carried on almost wholly under non-union conditions, he declared.

The memorandum of conditions in the field follows:

### *Alberta Miners Quit U. M. W.*

About 800 coal miners in the Drumheller field, Alberta, have withdrawn from the United Mine Workers and formed their own local union. Nearly 500 of the men are on strike against an agreement signed by the big union officials with the operators.

The original strike, declared June 30, resulted from failure to reach an agreement on a proposal by the operators that the wage scale be reduced about $1 a day. Six mines are affected. Only minor disturbances have occurred in the district.

"The collapse of the so-called 'Baltimore Agreement', entered into between the Northern West Virginia Coal Operators' Association and the sub-district organizations of District No. 17 of the United Mine Workers, may be briefly summarized as follows:

"(1) At the time of the negotiations it was informally agreed between representatives of the two parties that at least 20 per cent of the production in the region was being produced under non-union conditions. Subsequent investigation showed that this was, if anything, an underestimate. It was also agreed that this situation offered a distinct menace to the stability of the union agreement, and that its spread, to any appreciable extent, could only destroy it.

"(2) During subsequent months, regular and careful surveys of the situation revealed the following steady growth of non-union production, and an equally steady decline of tonnage produced under the Baltimore agreement:

NORTHERN WEST VIRGINIA FIELD—AVERAGE DAILY CAR LOADINGS

Union and Non-Union Mines

| | Cars | | | Per Cent | |
|---|---|---|---|---|---|
| 1924 | Union | Non-Union | Total | Union | Non-Union |
| June... | 736 | 438 | 1,174 | 62.7 | 37.3 |
| July... | 636 | 444 | 1,080 | 58.8 | 41.2 |
| Aug.... | 673 | 508 | 1,181 | 57.1 | 42.9 |
| Sept.... | 776 | 605 | 1,381 | 56.3 | 43.7 |
| Oct.... | 832 | 727 | 1,559 | 53.4 | 46.6 |
| Nov... | 885 | 792 | 1,677 | 52.7 | 47.3 |
| Dec.... | 743 | 759 | 1,502 | 49.5 | 50.5 |
| 1925 | | | | | |
| Jan.... | 747 | 938 | 1,685 | 44.3 | 55.7 |
| Feb.... | 593 | 961 | 1,554 | 38.1 | 61.9 |
| Mar.*.. | 601 | 939 | 1,540 | 39.0 | 61.0 |

*Percentages for the last week in March were: Union, 33.4, Non-Union, 66.6.

"(3) When the sales contracts secured prior to the Baltimore Agreement expired with the beginning of the new coal year, April 1, 1925, practically every union operation of any size, with one exception, suspended. The exception was the Consolidation Coal Co., which, with a greatly reduced number of mines, continued its efforts to operate for another month or more. This company then likewise came to a practically complete shutdown, forced by heavy losses and by its practical isolation in the matter of labor costs.

"(4) In recent weeks almost the entire output of the region, totalling nearly 1,200 cars daily, has been produced by operators and mine employees working together under non-union conditions of wages and employment. From whatever motive or cause, the essential fact is now the almost complete repudiation of the Baltimore wage contract by both sides. As a working reality it no longer exists.

"(5) During these months the affairs of District No. 17 of the United Mine Workers had been put into a state equivalent to a receivership. The duly elected district officials were supplanted by personal representatives of the president of the national organization, and local autonomy and control were suspended. Thousands of the union members openly withdrew from the wage contract as individuals by seeking employment wherever it could be obtained under the terms available. Briefly, the situation now consists of outside officials, neither chosen by nor accountable to the rank and file of the district membership, and who supervise a body that is only a fraction of the original organization in this field. In other words, so far as their individual economic action is concerned, the union contract relationship has been specifically repudiated by an overwhelming majority of the union members. As for the officials, there are none who can speak for the district but only for the national body.

"(6) The alternatives now facing both the union operator and the union employee are, therefore, not the choice between both working under the contract and either breaking it. The contract, being in its essence a collective agreement, is already broken and gone. Neither side has been able to cope with the forces which brought this about. The present alternatives, and the only ones, are those between sharing idle mines and unemployment on the one hand, and sharing competitive production and prevailing wages on the other.

"(7) Essentially this is a choice which now rests solely upon the individual employee, just as it has already been decided by thousands of them. If an employee of a company, both hitherto bound by the union contract, prefers to endure months of unemployment throughout the remaining term of the contract, in order to maintain his union membership, that is his privilege. If, on the contrary, he prefers not to assess this penalty upon himself and his family as the price of his union affiliation, but decides rather to exchange a printed scale for actual earnings, that also is his right. The company can neither compel the one nor deny the other.

"(8) Under such conditions the issue to be decided is not the technicalities of a document which exists only in the files of the operator and employee but their mutual decision on the obligations which they owe to the families and to the properties entrusted to their care. These obligations existed prior to and independent of the relationship to the third party of the union."

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The Northwestern Coal Dock Operators' Association on June 24 sent to the Federal Trade Commission a report of compliance with the cease and desist order of the commission, which was amended to conform to the decisions of the Supreme Court in the Maple Flooring and Cement cases, in reference to distribution of trade information.

# Strikers' Cause Now Seems Hopeless In Northern West Virginia Field; Union Seeks to Involve Government

Threats made by International President John L. Lewis of the United Mine Workers and other international officers are not taken very seriously by West Virginia coal operators. Instead of fearing harm to non-union production in northern West Virginia, they look upon Lewis' utterances as a prospective business stimulator. Some labor leaders think Lewis' next move will be to involve governmental authorities.

If present non-union coal-production figures can be taken as a criterion, and no doubt they can be, the northern West Virginia coal fields are lost to the union. Nothing short of an anthracite strike or some powerful stimulus to the bituminous coal industry can help the United Mine Workers here and it is even a grave question whether that would aid their cause very much.

Eighty-six per cent of the coal production was non-union during the first three days of last week; the open-shop mines produced 3,772 cars of coal compared to 594 cars loaded by union mines. In the first half of the week there were 154 non-union mines at work daily on the average, while 10 union mines worked.

### Many Operations Resume

The West Fairmont Shaft, which is located within the limits of the City of Fairmont, was opened by the Consolidation Coal Co. July 2, when 28 men started to clean up the plant preparatory to running coal. The Hutchinson Coal Co. has resumed operation at Robey mine, in the Clarksburg section of the field. Highland mine of the Consolidation Coal Co. is expected to open within a short time. Perry mine No. 50, a coal station of the Consolidation Coal Co., is now fueling B. & O. engines, it being located near Clarksburg.

A new daily production record of 1,580 net tons was made June 25 at the Osage mine of the Brady-Warner Coal Corporation, in Scott's Run. This excels the mine's production even under union conditions, Major Samuel D. Brady announced.

Late last week Attorney John B. Wyatt announced that he was at work preparing an injunction restraining the United Mine Workers from molesting the miners employed at Owings mine of the Consolidation Coal Co. Mr. Wyatt says he represents the new miners' union and not the company in the proceeding.

The union miners say that the company is taking this position because the Wyatt miners have been picketing Owings mine, which the concern is working on a non-union basis.

Everything is quiet in the Panhandle Coal fields of northern West Virginia. In Elkins, June 29, Federal Judge W. E. Baker filed a memorandum denying, because of lack of jurisdiction, the application of the Mineral State Coal Co. and 18 other companies for a preliminary injunction against John L. Lewis, president of the United Mine Workers; certain district officials and others. A temporary restraining order in this case was granted June 2, which has been continued in force, pending Judge Baker's decision.

Another effort is being made by the United Mine Workers to draw the government into the strike situation in northern West Virginia. Van A. Bittner, chief representative of the miners' union, sent a telegram to Secretary of Labor James J. Davis in Washington, D. C., July 1, scoring coal companies in the Fairmont field for alleged abrogation of their contract. The telegram reads:

"The Consolidation and Hutchinson Coal companies are the latest operators in northern West Virginia to abrogate their agreements with the United Mine Workers. It is my opinion that the miners will defeat these contract abrogators on the industrial field, but we think it is a disgrace and shame that the action of these companies necessitates our people going through all the hardships of an industrial war to force coal operators to comply with their wage agreements. We think the time has come when the government of our country shall say to these coal operators: 'you must comply with the agreement you made with the United Mine Workers of America.' The United Mine Workers does not propose to be driven back to the 1917 wage scale by this method of guerilla warfare, and unless these coal companies are forced to comply with their wage agreements we are fast approaching the place when a general strike of all the bituminous miners of the country will be inaugurated to preserve our wage scale against the most dishonorable and shameful conspiracy among coal operators that has ever been formed in any country in the civilized world."

### Bittner Echoes Lewis

After saying that the strike situation in northern West Virginia is favorable, Mr. Bittner says that the recent address of International President John L. Lewis to the hard coal miners in which a general strike is threatened, "is certainly a definite statement of the position of the United Mine Workers."

The union continues its advertising campaign in newspapers in northern West Virginia and carries a page advertisement in which the "American plan" is attacked.

An attack was made last week by Mr. Bittner on Attorney John B. Wyatt, of Shinnston, counsel of the new miners' union in northern West Virginia, in which the status of its members is discussed. In a statement issued recently Mr. Wyatt said that the miners employed at the company contract plants cannot be classed as non-union, open-shop or "American plan" miners. To this Mr. Bittner says: "The United Mine Workers surely agrees with this statement. Regardless of what subterfuge these men attempt to hide behind, they are nothing more than common ordinary scabs, and the fact that any of them have attached their names to petitions, circulated by the coal company, proves they are registered for the rest of their lives as scabs."

**Philip Murray**

Vice-President of the United Mine Workers

Mr. Wyatt's reply was: "I can truthfully say that the miners now working in the Consolidation Coal Co. mines feel that $4.60 a day is more than $7.25 a day under the old scale, because under the Baltimore agreement there was nothing, while under this plan the men are working and getting paid regularly."

Recently the Rachel mine of the Bertha-Consumers Co., at Downs, near Fairmont, resumed operations on a non-union basis. Miners' officials say that John Jones, president of the company, informed them he will not countenance an abrogation of contract. "The mine will remain closed until the company can sell coal at a price where it can pay the scale," the statement said. Despite this statement 42 men were at work at Rachel mine during the middle of the week. E. Frank Miller, general superintendent of the mine, declared that the mine will continue to work on an open-shop basis. He added that the men, all Americans, represent the majority of those employed when the mine last closed down. The mine is paying the same wage scale as the neighboring non-union mines.

Several hundred pickets gathered on the first morning the mine worked, but the number dwindled each day afterward. In a second statement Mr. Bittner says that Mr. Jones notified the miners' officials in the presence of Mr. Miller that he would not abrogate the contract. Mr. Bittner and William Turnblazer, president of District No. 19, were so notified, the miners say.

The miners' union reports that the J. H. Weaver & Co. interests at Rosemont have posted notices that the wages of the daymen were to be reduced from $4.52, and a 12 per cent cut made in tonnage and yardage rates, which, it is stated, is below the 1917 scale. Reductions will be made at the Wendel mine of the Maryland Coal Co. after July 15, to meet other non-union competition, the miners' union says in a statement.

# Consumers' Stocks of Soft Coal Fell to 38,000,000 Tons June 1; Hard-Coal Reserves for 52 Days

An inventory of the stocks of bituminous coal in the hands of consumers conducted by the Geological Survey reveals that the total quantity in storage on June 1, 1925, was 38,000,000 net tons, against 44,000,000 tons on March 1, 1925, and 51,000,000 tons on June 1, 1924. The trend of stocks has been steadily downward since the early part of 1924 and the heavy reserves built up by consumers in late 1923 have been reduced to more normal proportions; in fact, the present supply is slightly less than that in the summer of 1921.

Measured in tons, there was a reduction in stocks of 19 per cent during the period Sept. 1, 1924, to June 1, 1925, of which 14 per cent occurred during the last three months. At the rate of consumption prevailing from March 1 to June 1, the stocks on June 1 would last 32 days if evenly divided, a decrease of 29 per cent compared with the 45 days' supply on hand Sept. 1, 1924.

In addition to the quantity in the storage piles of consumers and dealers, it is estimated that the following quantities were in transit on June 1: On the commercial docks of Lakes Superior and Michigan, 3,800,000 tons; in storage at the mines or at intermediate points, 150,000 tons.

*Anthracite.*—Retail dealers in anthracite had a 52 days' supply of that fuel on June 1, an increase of 11 per cent over the supply on March 1 and slightly more than that on June 1, 1924. The movement of anthracite in the Lake trade began early this season and as a result the total on the upper Lake docks now stands close to 1,000,000 tons. This is more than double the quantity on the corresponding date a year ago.

The estimate of soft-coal stocks, which is based on reports from a selected list of about 5,000 consumers, does not take into account the coal in the bins of householders, steamship fuel, and the tonnage on Lake docks. The latter item is classed as coal in transit.

The liquidation of the near-record bituminous coal reserves of Jan. 1, 1924, has now gone on steadily for a year and a half, and the total stocks on June 1 were lower than any on record for a normal corresponding date. The reserves on that date were not quite twice those of June 1, 1920, when an acute shortage resulted in a panicky market with runaway prices.

The reports from consumers, supplemented by information from other sources, indicate that the rate of soft-coal consumption—including exports—from March 1 to May 31, 1925, was at the rate of approximately 1,250,000 tons a day, or 8,750,000 tons per 7-day week. During the preceding 6 months, Sept. 1, 1924, to March 1, 1925, the average daily rate of consumption was about 1,480,000 tons.

Fig. 2 gives a comparison of the days' supply of the seven principal classes of consumers on June 1, 1925, with those on the same date of 1924. The individual reserves of each group were appreciably less than they were a year ago, and the total days' supply was 35 per cent less than on June 1, 1924.

In studying the figures it should be borne in mind that they are averages and that the days' supply on June 1 is based on the spring rate of consumption, which normally is less than in the fall and winter.

Fig. 3 shows the geographical location of the days' supply at industrial plants, excluding steel and byproduct coke works. This is the largest single group of consumers, both numerically and from the viewpoint of consumption, and the one that illustrates best the general distribution of reserves. It is a sensitive business barometer, and changes in its activity are quickly reflected in the coal market.

On June 1, 1925, the industrials had an average of 32 days' supply, at the rate of consumption during the period March 1 to June 1, against a 40 days' supply on March 1, 1925, 53 days' supply on June 1, 1924, and 39 days' supply on June 1, 1923. The present stocks at such plants are sufficient for 8 days longer than those of June 1, 1920, when the actual tonnage held was at the lowest level on record and business was active.

Eighteen states had less than a 30 days' reserve, and 18 had stocks sufficient to last 30 days but less than 60. New England, with a 60 to 90 days' supply, had smaller stocks than usual at this season. Stocks in excess of a 90 days' supply were confined to the northern peninsula of Michigan.

The public utilities as a unit were in a stronger position than any other consumers, and on June 1, 1925, the electric power plants had a supply sufficient to last 48 days, and coal-gas plants had a 68-day reserve. Although well supplied, as compared with other classes of consumers, the reserves of the utilities are perceptibly lower than on other recent dates.

Practically complete returns from the manufacturers of byproduct coke and iron and steel indicated the following reserves on June 1, 1925, as compared with those a year ago:

**Byproduct Plants**

| | Days' Supply June 1 1924 | Days' Supply June 1 1925 |
|---|---|---|
| Low volatile | 41 | 14 |
| High volatile | 32 | 24 |
| Average | 34 | 20 |

**Steel Works**

| | Days' Supply June 1 1924 | Days' Supply June 1 1925 |
|---|---|---|
| Steam coal | 46 | 26 |
| Gas coal | 74 | 31 |
| Average | 56 | 27 |

The sharp decrease in the supply held by these two groups was due to a marked increase in activity as compared with the summer of 1924, and to a decrease in the actual tonnage on hand. The 20 days' supply at byproduct plants on June 1, 1925, was but 59 per cent of that of a year ago, and the steel

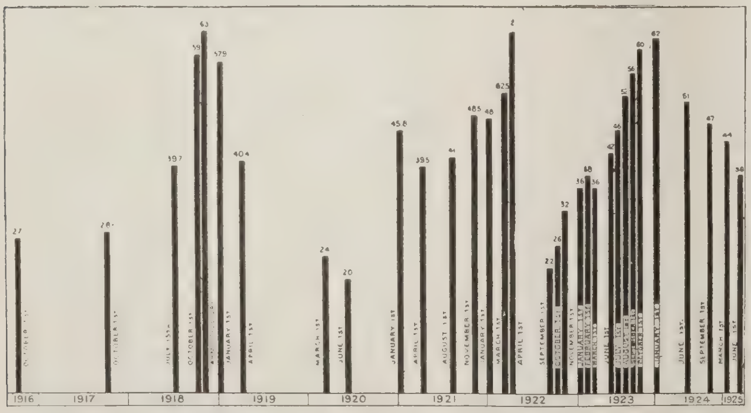

Fig. 1—Total Commercial Stocks of Bituminous Coal Oct. 1, 1916-June 1, 1925

Figures represent million net tons and include coal in the hands of railroads, industrial consumers, public utilities and retail dealers. Coal for steamship fuel, on Lake docks, in transit, and in the bins of householders is not included. The heavy stocks that were accumulated in 1923 have been reduced by nearly half. The present reserves are less than any recorded during the last seven years, except during the acute shortage of 1920 and the period following the miners' strike of 1922.

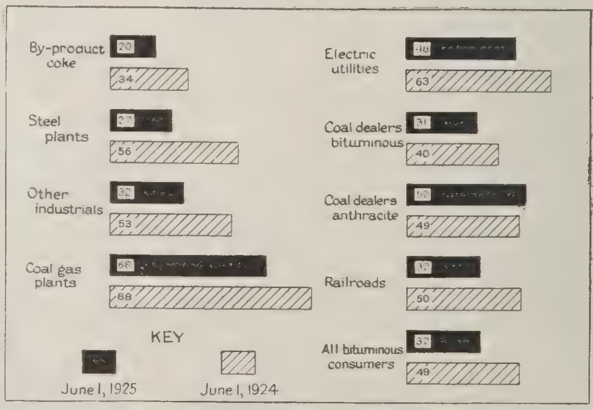

Fig. 2—Days' Supply Held by Different Classes of Consumers, June 1, 1924, and June 1, 1925

At the rate soft coal was burned from March 1 to May 31, 1925, the total quantity in storage on June 1 was sufficient to last 32 days on the average against a 49 days' supply on June 1, 1924, at the rate of consumption then prevailing. The tonnage now in reserve is 25 per cent less than that a year ago and because of the increased consumption would last only two-thirds as long.

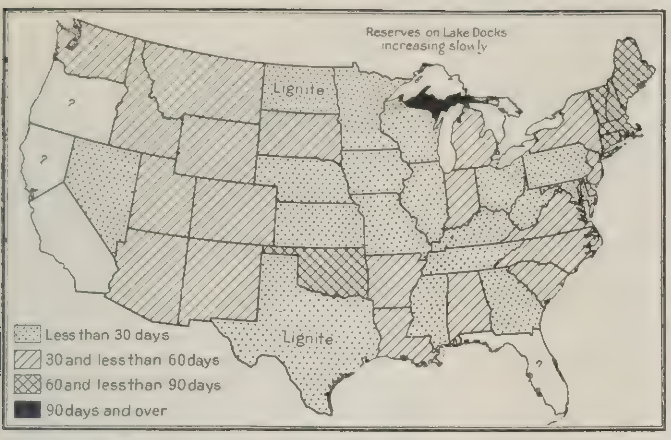

**Fig. 3—Days' Supply of Soft Coal on Hand at Industrial Plants June 1, 1925**

Distribution by states of the 32 days' supply of soft coal held at industrial plants, other than steel and byproduct coke works. Stocks generally were light and in the northern peninsula of Michigan only was there a 90 days' supply. New England and most of the Atlantic Coast states had a 60 days' supply. With but few exceptions, the interior states west to the Rocky Mountains had less than a 30 days' supply.

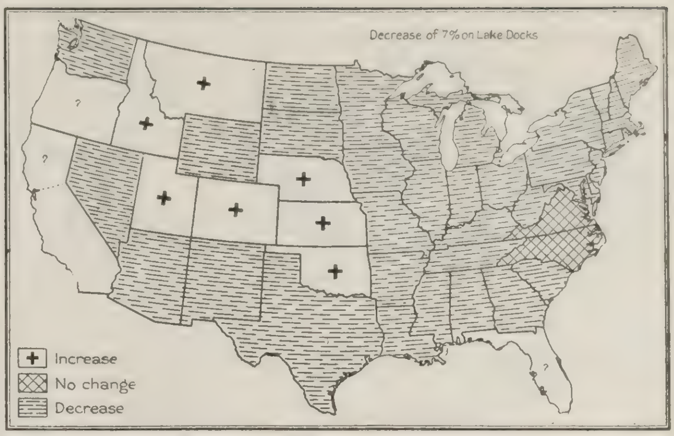

**Fig. 4—How Stocks at Industrial Plants on June 1, 1925, Compared with Those on June 1, 1924**

The map shows how widespread has been the reduction in soft-coal reserves at general industrial plants. Increase in stocks over those of a year ago were confined to a group of Western states. Except in that territory and in Virginia and North Carolina, reductions in stocks have been universal. This change relates to actual tonnage on hand and in no way reflects the rate of consumption.

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**Days' Supply of Bituminous Coal in Hands of Various Classes of Consumers in the United States, January 1, 1919, to June 1, 1925.(*a*)**

(Figures represent number of days supply would last at current rate of consumption at time of stock-taking)

| | Jan. 1, 1919 | Apr. 1, 1919 | June 1, 1920 | Apr. 1, 1921 | Mar. 1, 1922 | Mar. 1, 1923 | June 1, 1923 | Sept. 1, 1923 | June 1, 1924 | Sept. 1, 1924 | Mar. 1, (*b*) 1925 | June 1, (*b*) 1925 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Byproduct coke plants | 32 | 23 | 8 | 28 | 39 | 19 | 23 | 30 | 34 | 30 | 25 | 20 |
| Steel plants | 42 | 35 | 11 | 38 | 48 | 26 | 29 | 33 | 56 | 42 | 30 | 27 |
| Other industrials | 65 | 47 | 24 | 47 | 56 | 34 | 39 | 56 | 53 | 48 | 40 | 32 |
| Coal-gas plants | 81 | 58 | 22 | 66 | 82 | 58 | 75 | 110 | 88 | 90 | 78 | 68 |
| Electric utilities | 49 | 48 | 22 | 48 | 54 | 34 | 45 | 52 | 63 | 58 | 51 | 48 |
| Coal dealers, bituminous | 39 | 25 | 10 | 26 | 23 | 11 | 27 | 38 | 40 | 46 | 33 | 31 |
| Railroads | 32 | (*c*) | 10 | 24 | 42 | 16 | 21 | 44 | 50 | 42 | 35 | 32 |
| Total bituminous | 42 | 31 | 15 | 36 | 43 | 22 | 30 | 46 | 49(*d*) | 45(*d*) | 37(*d*) | 32(*d*) |

(*a*) The figures in this table are estimates based on incomplete data. (*b*) See text for rate of consumption at which these figures were calculated. (*c*) No data. (*d*) Subject to revision.

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plants, with a 27-day reserve, had less than half of the total for the earlier date.

Reports from the railroads, furnished through the courtesy of the American Railway Association, indicated that the total railroad fuel in reserve was in the neighborhood of 10,500,000 tons, a supply sufficient to last 32 days at the present rate of consumption. A year ago the railroads had a 50 days' supply.

At the rate of delivery of soft coal to the householders this spring, retailers' stocks on June 1, 1925, were sufficient to last 31 days. At the rate of delivery during the summer of 1924, the stocks on June 1, 1924, would have lasted 40 days. Compared with stocks on the corresponding date two years ago there was a decrease in the actual tonnage on hand, but because of the reduced rate of delivery the present supply appears slightly higher.

The total quantity of soft coal in transit has never been measured accurately, but available information indicates that the quantity in transit from the mines on March 1, 1925, was about three quarters of a million tons more than on Sept. 1, 1924, and on June 1 it was a million and three quarter tons less than on March 1.

Bituminous coal stored by producers on June 1, 1925, was barely 150,000 net tons. On June 1, 1924, the same companies reported 370,000 tons, and in the spring of 1923, more than 800,000 tons. The total quantity of unbilled coal in cars at the mines on June 1 was about 800,000 tons, a decrease of 200,000 tons from the figure for March 1.

The Lake season of 1925 opened early and shipments up the Lakes, to the end of May, exceeded those during the corresponding period of 1924 by more than 1,000,000 tons, but were about 1,000,000 tons less than in 1923. The tonnage moved off the upper docks about as fast as it was received, however, and there was but little accumulation of reserves. Reports furnished by the Lake Superior Coal Dock Operators' Association and the dock operators of Lake Michigan show the following total stocks: June 1, 1925, 3,800,000 tons; March 1, 1925, 3,840,000 tons; June 1, 1924, 4,150,000 tons; June 1, 1923, 1,591,000 tons.

Stocks of unsold coke at 21 byproduct plants supplying gas for city use were greatly reduced during the winter of 1924-25 and the total remaining on March 1—606,000 tons—was 45 per cent less than the quantity on hand last September. The unsold supply increased slightly during the next three months and on June 1 the total was 694,000 tons. The record of coke stocks on recent dates for which statistics are available has been as follows: Jan. 1, 1924, 772,000 tons; June 1, 1923, 202,000 tons; Jan. 1, 1923, 212,000 tons; March 1, 1922, 987,000 tons.

Unlike bituminous coal, large quantities of anthracite are stored at the mines or at intermediate points en route to consuming centers. Unfortunately it has been impossible for the government to obtain complete information on this important subject, and accurate total, therefore, cannot be given at this time.

## New York Anthracite Prices For July, 1925

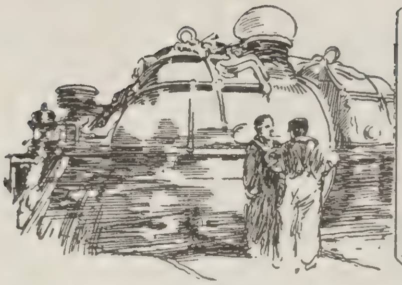
(Per Gross Ton, f.o.b. Mine)

| | Broken | Egg | Stove | Chestnut | Pea |
|---|---|---|---|---|---|
| Lehigh & Wilkes-Barre Coal Co. | $8.15 | $8.55 | $9.05 | $8.55 | $5.00 |
| Lehigh Valley Coal Sales Co. | 8.25 | 8.60 | 9.05 | 8.80 | 5.00 |
| Lehigh Coal & Navigation Co. | 8.80 | 8.80 | 9.20 | 8.70 | 5.35 |
| D. L. & W. Coal Co. | 8.25 | 8.55 | 9.05 | 8.55 | 5.25 |
| Hudson Coal Co. | 8.55 | 8.55 | 9.05 | 8.55 | [illegible].80 |
| Phila. & Reading Coal & Iron Co. | 8.80 | 8.75 | 9.15 | 8.75 | 5.40 |
| M. A. Hanna & Co. | 8.50 | 8.80 | 9.30 | 8.80 | 5.45 |

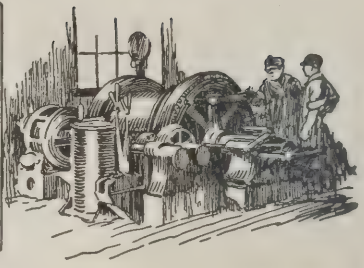
Steam sizes: Buckwheat No. 1, $2.50; rice, $2; barley, $1.50; birdseye, $1.60.

In the construction of public buildings little attention has been given to furnace location with the idea of facilitating the handling of coal. A recent survey of public buildings in the District of Columbia disclosed that costs of handling coal from the truck to the firebox varies from 37c. to 42c. a ton. Conditions in this respect are practically as bad in buildings recently constructed as in the older ones. The matter has been the subject of consideration at a conference with the Supervising Architect.

After numerous postponements, Robert M. Lambie, of Charleston, chief of the West Virginia Department of Mines, has announced that the inquest on the Barrackville explosion by the coroner's jury will be continued in Fairmont on Thursday, July 16.



# Practical Pointers For Electrical And Mechanical Men



## Device Reduces Peak Loads on Motor-Generator and Saves Time

Peak loads, not average loads, are the ones which ordinarily limit the practical capacity of mine substation equipment. Reducing or limiting the peaks is usually equivalent to installing additional generator capacity. A specific instance of such a case is that at the Shamrock mine of the West Kentucky Coal Co., at Providence, Ky.

A year or so ago the direct current power plant at this mine was abandoned in favor of purchased power and a 300-kw. synchronous motor-generator set installed. It was soon found that the motor-generator would not handle the peak loads if the field of the synchronous motor was adjusted to give the desired power factor at the average load.

The operating condition was this: If the power factor was adjusted to 80 per cent leading at the normal low load of 200 to 300 amp. then it would drop to 80 per cent lagging at the full load of 1,000 amp., and the synchronous motor would pull out of step at peaks of over 1,800 amp. If the power factor was adjusted to 90 per cent leading at 300 amp., then the motor would pull out at 1,500 amp.

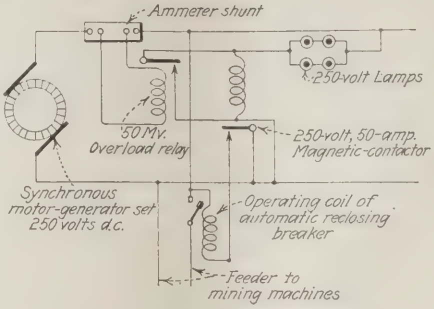

Ammeter shunt
250-volt Lamps
50 Mv. Overload relay
250-volt, 50-amp. Magnetic-contactor
Synchronous motor-generator set 250 volts d.c.
Operating coil of automatic reclosing breaker
Feeder to mining machines

**Fig. 2—Diagram of Connections**

The added apparatus is used in connection with the ammeter shunt, and with the automatic-reclosing circuit breaker of the mining machine feeder.

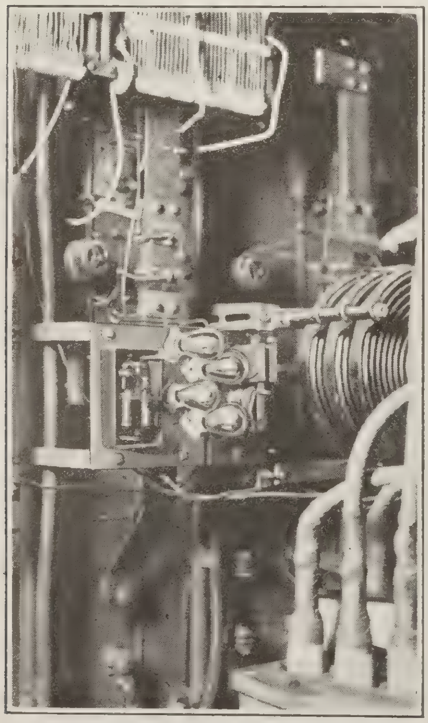


**Fig. 1—Mounted Back of Switchboard**

A 50-mv. relay, four lamps, and a 50-amp. contactor make up the special equipment. These are seen on the bracket in the center of the photograph.

The short time maximum loads of 1,800 amp. or more were caused chiefly by coincident peaks of the one 12-ton and two 10-ton haulage locomotives. The rather steady mining machine load of 200 to 300 amps. was just enough, in addition to the locomotive peaks, to cause the trouble. At the Shamrock mine, as is also the practice at other mines of the West Kentucky company, the mining machines are operated from a separate circuit which is protected by an automatic reclosing breaker installed at the substation switchboard.

This arrangement of the mining machine circuit made possible the installation, at small cost, of a device which obviated the necessity of installing a second motor-generator set. The device opens the mining machine breaker whenever the total load on the substation reaches 1,800 amp., and does not allow the breaker to reclose until the load has dropped to approximately 1,500 amp.

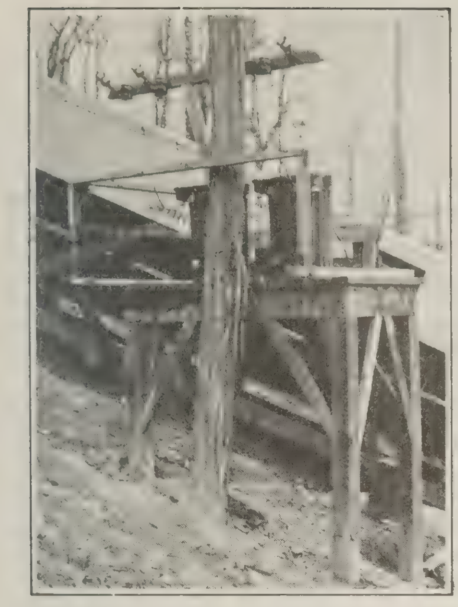
To accomplish this, there was added to the direct-current feeder panel, only that equipment which is seen mounted on the bracket in the left center of the illustration shown in Fig. 1. The combination of a type-T.U., 50-mv. overload relay, a bank of four lamps and a 250-volt, 50-amp. magnetic contactor does the work. The relay has independent adjustments for setting to open and close at the desired current values, and is enclosed in a dustproof metal case, the cover of which was removed when the photograph was made.

A diagrammatic sketch of the circuit arrangement is shown in Fig. 2. The relay coils are connected across the ammeter shunt and the relay contact points across the coil of the magnetic contactor. The lamps are used in series with the contactor coil. The action of the contactor opens and closes the operating-coil circuit of the mining machine breaker.

Sherman Melton, electrical engineer of the West Kentucky Coal Co., states that the device has been entirely satisfactory in operation, and that the delay to the cutting machines, caused by the action of the relay in opening the feeder breaker, is much less than the time loss suffered previously by the whole mine when the main breaker opened or the motor-generator dropped out of step.

## Transformer Mounting Is Safe and Accessible

A marked tendency is shown in new installations to locate power transformers where they can be easily mounted and readily inspected. The illustration shows an installation method which is a compromise between a high-pole and a ground mounting. These transformers, each of 20-kw. capacity, supply power at 220 volts to the 30-hp. motor driving the rope-and-button conveyor at the new mine, No. 5-B, of the Columbus Mining Co., at Allais, Ky. The installation is alongside the retarding conveyor and about 100 ft. from the



Inspection Is Easy Here

This method of installing transformers is a compromise between a high, pole mounting, and a ground mounting. The platform on which these 20-kw., 2,200/220-volt transformers are mounted is 4x8 ft.

dump house in which the motor is located. The secondary leads are carried under the conveyor roof from the transformers up to the motor.

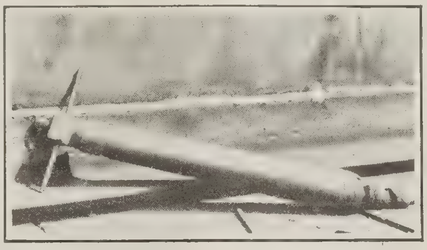
As located, the transformers are accessible for inspection and for the renewal of fuses without the aid of pole climbers or a long ladder, and yet they are high enough above the ground so that they do not require a protecting fence.

## Resistance Terminal Makes Good Electrode Holder

Electric welding does not of necessity require the purchase of special equipment, however, most users prefer to buy factory-made outfits. Mine electricians and mechanics are noted for their resourcefulness and ingenuity in contriving to use what is at hand. An example of this is the electrode holder illustrated in the accompanying photograph.

A ⅜-in. terminal from a mine locomotive resistance unit forms the "business end" of this holder. The hollow wooden handle is 12 in. long and 1⅜ in. in diameter at the large end. The flexible cable is not connected directly to the terminal but instead is soldered to a strip of copper which, in turn, is riveted to the terminal. The object of this is to keep the soldered joint away from the heat of the arc.

The ideal electrode holder should be, (1) of light weight, (2) constructed so that the electrode can be conveniently and quickly changed, (3) not easily damaged by an arc from the holder to the work, (4) made so that it holds the electrode securely and makes good electrical contact to it, (5) rugged, (6) compact, and (7) cheap to build. The holder described here fulfills most of the above requirements, except, possibly, that of quick changing of the electrode. It was observed, however, at the Wayland, Ky., shop of the Elkhorn Coal Corporation, where this holder is used, that the operative seemed to lose comparatively little time in changing electrodes, although he had to use a wrench each time to tighten the setscrew. R. R. Schillenger, electrical engineer, stated that, everything considered, this electrode holder is about as satisfactory as any his company has tried.

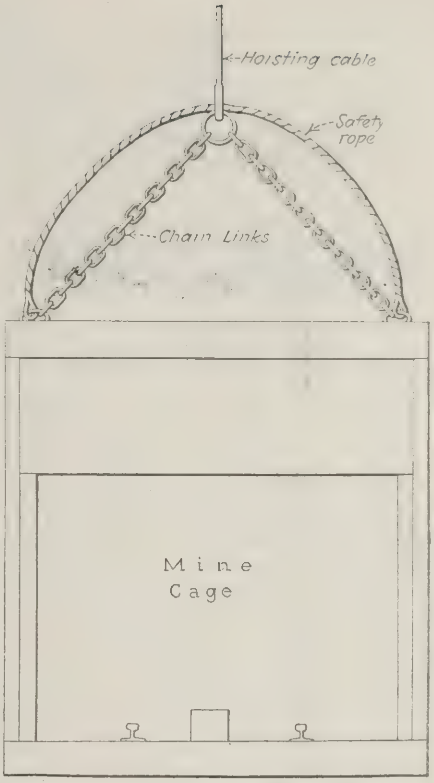


Nothing Complicated About This Home-Made Holder

The setscrew must be tightened with a wrench, but the welding time lost in this way in average mine repair work is negligible. The electrode can be clamped in the middle and used from either end.

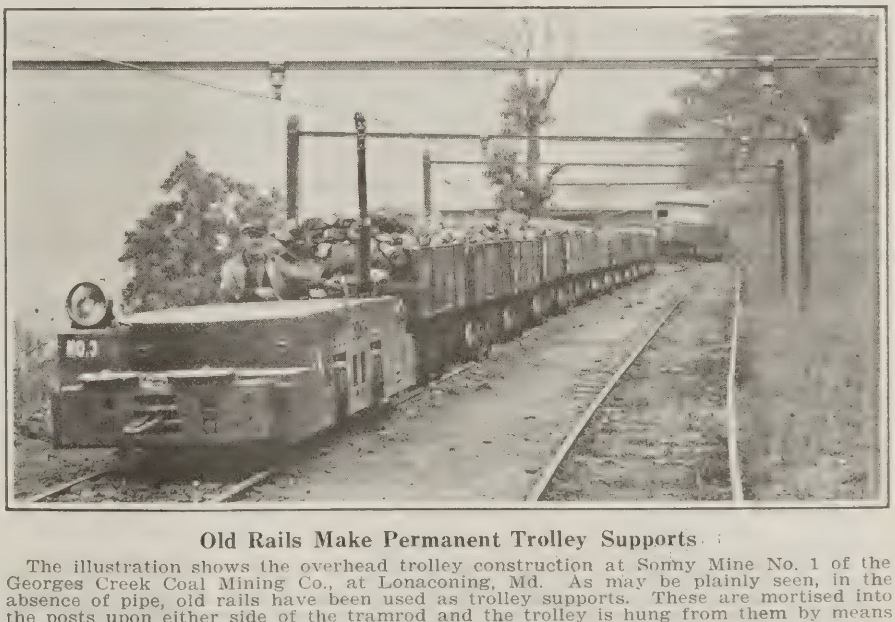
## Safety Rope Halts Cage

Many different ideas have been developed at the J. K. Dering mine near Eldorado, Ill., to insure safety to the workmen. At this mine an auxiliary cable attachment is put on the top of the hoisting cage, as shown in the accompanying illustration, to prevent an accident to the workmen or cage if the permanent chains which connect the hoisting cable to the cage should break. The arrangement is such that should one of the chains fail, the safety rope prevents the cage from tipping and binding in the shaft. Periodically the chains are inspected and renewed, thus the liability of an accident is greatly minimized.



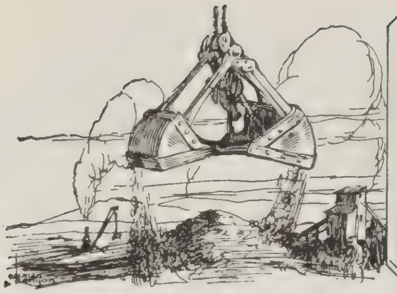
Auxiliary Attachment Catches Cage

The heavy safety rope is fastened to the cage by separate attachments, thus giving more complete protection against accidents.



Old Rails Make Permanent Trolley Supports

The illustration shows the overhead trolley construction at Sonny Mine No. 1 of the Georges Creek Coal Mining Co., at Lonaconing, Md. As may be plainly seen, in the absence of pipe, old rails have been used as trolley supports. These are mortised into the posts upon either side of the tramrod and the trolley is hung from them by means of ordinary pipe clamps.



# Production And the Market

## Soft and Hard Coal Trades Await Effect Of Labor Developments

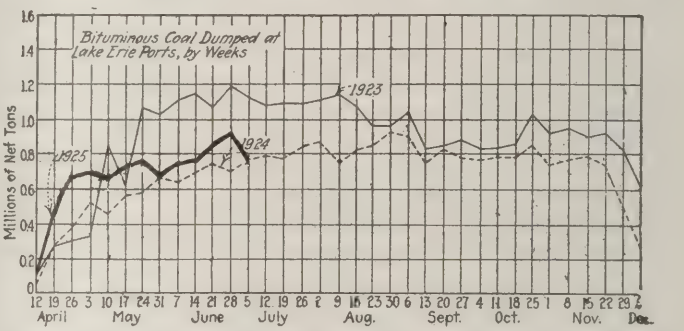
While actual business conditions in the marketing of coal showed little discernible difference during the past week from recent preceding weeks, nevertheless two recent developments are fraught with far-reaching possibilities to the trade—the threat of a nationwide strike by John L. Lewis and the report of coal stocks by the Geological Survey. The industry as a whole will take the Lewis threat calmly, knowing the size of the job the union leader already has on his hands in West Virginia and confident that the government would quickly step in in the event of a dangerous tie-up at the mines. Realization of the extent of the shrinkage in reserve coal stocks, as revealed in this week's report, may be a different story. Whether it will prove to be the needed impetus that the market lacked, the next few weeks will show.

A shipment of western Kentucky strip mine-run that sold in Chicago last week on the basis of 95c. per ton f.o.b. mine gave the Midwest market another bump, shaking the confidence of Illinois and Indiana producers who were trying to maintain prices on 2-in. screenings. Western Kentucky is in poor shape and eastern Kentucky is dissatisfied with prices, a plentiful car supply and many mines running full making coal too plentiful. Business at the head of the lakes is at a standstill. Conditions are somewhat steadier in the Southwest, the situation being unchanged in Colorado and Utah.

Lake buying has been heavier during the last week, and as a result the Cincinnati market has stiffened. A slight pick-up is in evidence in southern Ohio also, but there is no change in eastern Ohio. Demand continues light at Pittsburgh. The depression in New England shows no signs of lifting. At New York and Philadelphia sales have not picked up much, but encouraging signs are not lacking.

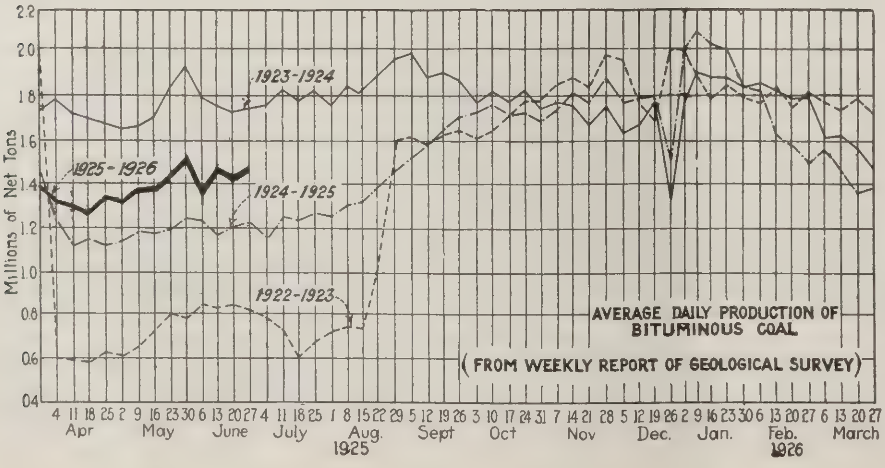
Anthracite consumers display nothing but indifference despite the nearness of the wage parley, but it is not unlikely that a change of front will be in evidence when news from the scene of hostilities begins to spread. Stove continues to lead in demand, with egg close up. Chestnut, however, is causing nearly as much difficulty as pea. The steam sizes are quiet.

Bituminous coal output in the week ended June 27 is estimated by the Geological Survey at 8,679,000 net tons, compared with 8,400,000 tons in the previous week, as shown by revised figures. Anthracite production in the week ended June 27 was 1,844,000 net tons, compared with 1,788,000 tons in the preceding week.



*Coal Age* Index of spot prices of bituminous coal remained stationary during the past week, standing on July 6 at 160, the corresponding price being $1.94.

Dumpings at Lake Erie ports during the week ended July 5, according to the Ore & Coal Exchange, were: Cargo, 733.042 net tons; steamship fuel, 47,258 tons—a total of 780,300 net tons, compared with 912,945 tons in the preceding week. Hampton Roads dumpings in the week ended July 2 totaled 401,083 net tons, compared with 447,290 tons in the previous week.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| June 13 | 7,385,000 | 8,622,000 |
| June 20 (*a*) | 7,434,000 | 8,400,000 |
| June 27 (*b*) | 7,608,000 | 8,679,000 |
| Daily average | 1,268,000 | 1,447,000 |
| Cal. yr. to date (*c*) | 229,772,000 | 231,795,000 |
| Daily av. to date | 1,523,000 | 1,533,000 |
| **ANTHRACITE** | | |
| June 13 | 1,823,000 | 1,870,000 |
| June 20 | 1,823,000 | 1,788,000 |
| June 27 | 1,918,000 | 1,844,000 |
| Cal. yr. to date (*c*) | 45,145,000 | 44,435,000 |
| **COKE** | | |
| June 20 (*a*) | 131,000 | 129,000 |
| June 27 (*b*) | 125,000 | 127,000 |
| Cal. yr. to date (*c*) | 6,004,000 | 5,230,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Trade Drags Bottom

A new low level was reached in the Chicago market last week when a considerable tonnage of strip mine-run from western Kentucky was sold there on the basis of 95c. per ton, f.o.b. mines. There was enough of this coal offered to shake the confidence of the Illinois and Indiana producers who have been attempting to maintain a good price for 2-in. screenings. Some of the Illinois and Indiana operators shaded their prices in order to meet this west Kentucky competition, but the majority held their prices firm, asserting that the 95c. mine-run was distress coal and as such ought not to influence the market.

The demand for industrial coals shows no signs of improvement, as mines in the Middle West appear to be able to produce, even on their present curtailed running time, sufficient coal to take care of local industries.

Again Franklin County, Saline County and Williamson County operators have let the first of the month go by without increasing prices, the $2.75 level for 6-in. lump, 6x3-in. furnace and 3x2-in. small egg remaining in effect for July. Shippers of smokeless coal from West Virginia have followed this lead and have decided not to raise their prices in July, either. This is equally true of eastern Kentucky producers, who until at least July 15 will maintain their circular of $2.30 for 4-in. block.

Anthracite operators increased prices 10c. a ton on domestic sizes, effective July 1. They also have served notice that July prices are subject to change without notice. It is believed that the anthracite operators are protecting themselves in case the current strike talk in the hard-coal fields leads to a great increase in demand. The Middle Western public seem indifferent, however, expecting to be able to cover their requirements when they get ready, and if they are unable to get anthracite they feel they can get plenty of smokeless coal or coke.

Conditions are unchanged in southern Illinois. A few cars of domestic sizes are moving out but it has been hard work and some of it has sold as low as $2.35 on Franklin County lump, egg and nut and some coal from the Harrisburg field. Some coal from Duquoin has gone as low as $1.75 for egg and No. 1 nut. However, the retail trade is being asked the same old circular, and that is the principal reason why nearly all the dealers in Illinois have gone to eastern and western Kentucky coal. Railroad tonnage is light from the shaft mines, which are working a couple of days a week, with an exceptional mine getting better time. The strip mines seem to be getting good working time, crushing a lot of coal and have some railroad tonnage.

There has been no change in the Duquoin field and there is practically nothing doing in the Mt. Olive district. A little working time in both of these fields is given over to crushing coal for mine contracts although one mine in

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | July 7 1924 | June 22 1925 | June 29 1925 | July 6 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.85 | $2.85 | $2.85 | $2.75@$3.00 |
| Smokeless mine run | Columbus | 2.20 | 1.85 | 1.85 | 1.75@ 2.00 |
| Smokeless screenings | Columbus | 1.30 | 1.30 | 1.30 | 1.25@ 1.40 |
| Smokeless lump | Chicago | 3.60 | 3.10 | 3.10 | 3.00@ 3.25 |
| Smokeless mine run | Chicago | 1.85 | 1.95 | 1.90 | 1.65@ 2.10 |
| Smokeless lump | Cincinnati | 3.85 | 2.85 | 2.85 | 2.75@ 3.00 |
| Smokeless mine run | Cincinnati | 1.80 | 1.85 | 1.85 | **1.90@ 2.00** |
| Smokeless screenings | Cincinnati | 1.10 | 1.20 | 1.25 | **1.25@ 1.35** |
| *Smokeless mine run | Boston | 4.30 | 4.25 | 4.25 | *4.10@ 4.35* |
| Clearfield mine run | Boston | 1.90 | 1.75 | 1.80 | *1.60@ 2.00* |
| Cambria mine run | Boston | 2.35 | 2.10 | 2.10 | *1.85@ 2.25* |
| Somerset mine run | Boston | 2.15 | 1.95 | 1.90 | 1.75@ 2.10 |
| Pool 1 (Navy Standard) | New York | 2.70 | 2.55 | 2.55 | *2.40@ 2.70* |
| Pool 1 (Navy Standard) | Philadelphia | 2.80 | 2.60 | 2.60 | 2.45@ 2.75 |
| Pool 1 (Navy Standard) | Baltimore |  | 1.85 | 1.85 | 1.80@ 1.95 |
| Pool 9 (Super. Low Vol.) | New York | 2.15 | 2.00 | 2.00 | 1.85@ 2.15 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.00 | 2.00 | 1.85@ 2.20 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.85 | 1.75 | 1.75 | 1.65@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.80 | 1.85 | 1.85 | 1.75@ 2.00 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.70 | 1.70 | 1.60@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.65 | 1.60 | 1.60 | 1.55@ 1.65 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.55 | 1.55 | **1.50@ 1.70** |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.40 | 1.40 | 1.35@ 1.45 |
| **High-Volatile, Eastern** |  |  |  |  |  |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.50 | 1.50 | 1.40@ 1.60 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.50 | 1.50 | 1.45@ 1.60 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.45 | 1.35 | 1.30@ 1.45 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.40 | 2.40 | 2.30@ 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.20 | 1.50 | 1.50 | 1.40@ 1.60 |
| Kanawha lump | Columbus |  | 1.85 | 1.85 | 1.75@ 2.00 |
| Kanawha mine run | Columbus |  | 1.40 | 1.40 | 1.35@ 1.50 |
| Kanawha screenings | Columbus |  | 1.05 | 1.05 | **1.10@ 1.20** |
| W. Va. lump | Cincinnati | 2.25 | 2.30 | 2.10 | **2.00@ 2.50** |
| W. Va. gas mine run | Cincinnati | 1.40 | 1.50 | 1.50 | **1.50@ 1.65** |
| W. Va. steam mine run | Cincinnati | 1.40 | 1.40 | 1.30 | **1.35@ 1.50** |
| W. Va. screenings | Cincinnati | .85 | 1.15 | 1.10 | **1.10@ 1.25** |
| Hocking lump | Columbus | 2.45 | 2.15 | 2.15 | 2.00@ 2.35 |
| Hocking mine run | Columbus | 1.70 | 1.50 | 1.50 | 1.40@ 1.65 |
| Hocking screenings | Columbus | 1.35 | 1.30 | 1.30 | **1.25@ 1.40** |
| Pitts. No. 8 lump | Cleveland | 2.35 | 2.20 | 2.20 | 1.90@ 2.50 |
| Pitts. No. 8 mine run | Cleveland | 1.90 | 1.85 | 1.85 | *1.80@ 1.85* |
| Pitts. No. 8 screenings | Cleveland | 1.10 | 1.45 | 1.40 | 1.35@ 1.45 |

| Midwest | Market Quoted | July 7 1924 | June 22 1925 | June 29 1925 | July 6 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $2.75 | $2.60 | $2.60 | $2.50@$2.75 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.70 | 2.10 | 2.00 | 1.75@ 2.25 |
| Central Ill. lump | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Central Ill. mine run | Chicago | 2.10 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central Ill. screenings | Chicago | 1.65 | 1.75 | 1.75 | 1.65@ 1.90 |
| Ind. 4th Vein lump | Chicago | 2.60 | 2.60 | 2.60 | 2.50@ 2.75 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.70 | 1.85 | 1.80 | 1.65@ 2.00 |
| Ind. 5th Vein lump | Chicago | 2.35 | 2.25 | 2.25 | 2.15@ 2.40 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.55 | 1.50 | 1.50 | 1.40@ 1.60 |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.25 | 2.25 | 2.25 |
| Mt. Olive screenings | St. Louis | 2.00 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.15 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.45 | 1.70 | 1.70 | *1.50* |
| West Ky. block‡ | Louisville | 2.00 | 1.50 | 1.35 | 1.25@ 1.50 |
| West Ky. mine run | Louisville | 1.60 | 1.25 | 1.10 | 1.00@ 1.25 |
| West Ky. screenings | Louisville | 1.25 | 1.05 | 1.05 | **1.00@ 1.25** |
| West Ky. block‡ | Chicago | 1.95 | 2.00 | 2.00 | 1.90@ 2.15 |
| West Ky. mine run | Chicago | 1.60 | 1.35 | 1.35 | 1.15@ 1.60 |
| **South and Southwest** |  |  |  |  |  |
| Big Seam lump | Birmingham | 3.20 | 2.10 | 2.00 | 1.80@ 2.25 |
| Big Seam mine run | Birmingham | 1.80 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.00 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block‡ | Chicago | 2.10 | 2.25 | 2.45 | 2.30@ 2.65 |
| S. E. Ky. mine run | Chicago | 1.50 | 1.70 | 1.70 | 1.60@ 1.85 |
| S. E. Ky. block‡ | Louisville | 2.10 | 2.25 | 2.10 | 2.00@ 2.25 |
| S. E. Ky. mine run | Louisville | 1.55 | 1.55 | 1.55 | 1.35@ 1.75 |
| S. E. Ky. screenings | Louisville | .95 | 1.10 | 1.10 | 1.00@ 1.25 |
| S. E. Ky. block‡ | Cincinnati | 2.50 | 2.40 | 2.30 | *2.00@ 2.50* |
| S. E. Ky. mine run | Cincinnati | 1.45 | 1.55 | 1.50 | **1.40@ 1.75** |
| S. E. Ky. screenings | Cincinnati | .90 | 1.10 | 1.10 | **1.10@ 1.25** |
| Kansas lump | Kansas City | 4.50 | 4.00 | 4.00 | 4.00 |
| Kansas mine run | Kansas City | 3.50 | 3.00 | 3.00 | 3.00 |
| Kansas screenings | Kansas City | 2.50 | 2.60 | 2.50 | 2.50 |

* Gross tons, f.o.b. vessel, Hampton Roads.

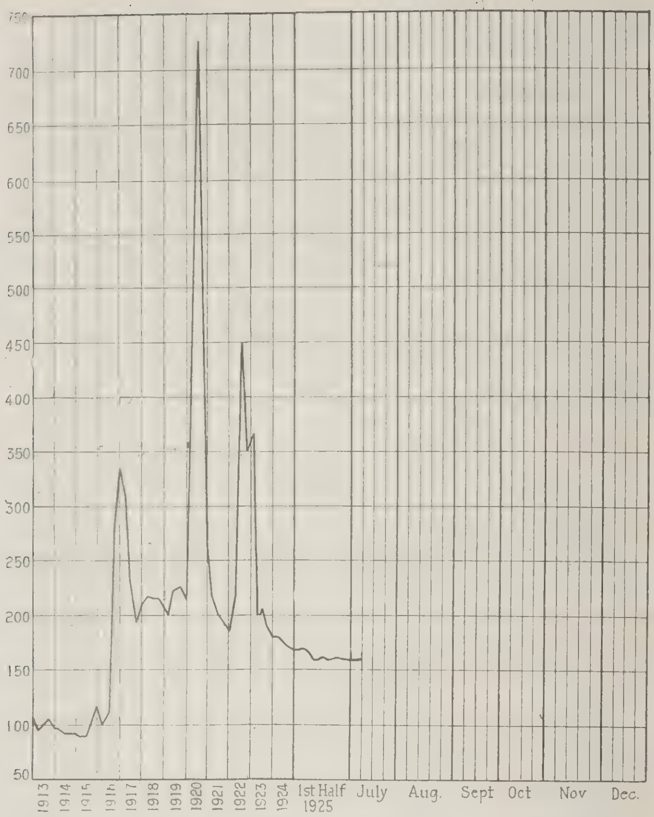
† Advances over previous week shown in **heavy type**; declines in *italics*.

‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

|  | Market Quoted | Freight Rates | July 7, 1924 |  | June 29, 1925 |  | July 6, 1925† |  |
|---|---|---|---|---|---|---|---|---|
|  |  |  | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ........... | $8.00@$8.95 | ........... | $8.10@$8.70 | ........... | **$8.15@$8.80** |
| Broken | Philadelphia | 2.39 | ........... | 8.80@ 8.95 | ........... | 8.60 | ........... | **8.70** |
| Egg | New York | 2.34 | $8.75@$9.00 | 8.55@ 8.95 | $8.50@$8.75 | 8.45@ 8.70 | $8.50@$8.75 | **8.55@ 8.80** |
| Egg | Philadelphia | 2.39 | 8.90@ 9.60 | 8.90@ 8.95 | 8.70@ 9.30 | 8.50@ 8.70 | **8.80@ 9.40** | **8.60@ 8.80** |
| Egg | Chicago* | 5.06 | 7.99@ 8.10 | 7.94@ 8.00 | 7.86@ 8.50 | 7.44@ 8.18 | 7.86@ 8.50 | **7.54@ 8.28** |
| Stove | New York | 2.34 | 9.00@ 9.25 | 8.55@ 9.20 | 8.75@ 9.25 | 8.95@ 9.20 | 8.75@ 9.25 | **9.05@ 9.30** |
| Stove | Philadelphia | 2.39 | 9.25@ 9.90 | 8.95@ 9.10 | 9.30@ 9.65 | 8.95@ 9.10 | **9.40@ 9.75** | **9.05@ 9.20** |
| Stove | Chicago* | 5.06 | 8.30@ 8.40 | 8.24@ 8.34 | 8.22@ 8.70 | 7.92@ 8.10 | 8.22@ 8.70 | **8.02@ 8.20** |
| Chestnut | New York | 2.34 | 8.75@ 9.00 | 8.55@ 9.05 | 8.25@ 8.50 | 8.45@ 8.70 | 8.25@ 8.50 | **8.55@ 8.80** |
| Chestnut | Philadelphia | 2.39 | 8.75@ 9.00 | 8.90@ 8.95 | 8.70@ 9.55 | 8.60@ 8.70 | **8.80@ 9.65** | **8.70@ 8.80** |
| Chestnut | Chicago* | 5.06 | 8.08@ 8.23 | 8.18@ 8.24 | 8.14@ 8.35 | 7.69@ 8.00 | 8.14@ 8.35 | **7.79@ 8.10** |
| Pea | New York | 2.22 | 4.50@ 5.50 | 5.50@ 6.00 | 4.75@ 5.50 | 5.00@ 5.70 | 4.75@ 5.50 | **5.00@ 5.80** |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | 5.50@ 5.75 | 5.00@ 5.40 | 5.50@ 5.75 | 5.00@ 5.40 |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 5.91 | 4.91@ 5.36 | 4.60@ 5.00 | 4.91@ 5.36 | 4.69@ 5.00 |
| Buckwheat No. 1 | New York | 2.22 | 2.00@ 2.75 | 3.00@ 3.15 | 2.00@ 2.40 | 2.50 | 2.00@ 2.40 | 2.50 |
| Buckwheat No. 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | 2.15@ 2.75 | 2.50 | 2.15@ 2.75 | 2.50 |
| Rice | New York | 2.22 | 1.50@ 2.15 | 2.00@ 2.25 | 1.75@ 2.00 | 2.00 | 1.75@ 2.00 | 2.00 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | 1.85@ 2.00 | 2.00 | 1.85@ 2.00 | 2.00 |
| Barley | New York | 2.22 | 1.10@ 1.50 | 1.50 | 1.35@ 1.50 | 1.50 | 1.35@ 1.50 | 1.50 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | 1.40@ 1.50 | 1.50 | 1.40@ 1.50 | 1.50 |
| Birdseye | New York | 2.22 | 1.10@ 1.50 | 1.60 | ........... | 1.60 | 1.50@ 1.65 | 1.60 |

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | July 6 | June 29 | June 22 | July 7 |
| Index | 160 | 160 | 161 | 164 |
| Weighted averaged price | $1.94 | $1.94 | $1.95 | $1.99 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

Jackson County is getting considerable domestic tonnage at circular price. The Standard field continues to sell coal below cost as a rule. Mines are working one and two days a week and railroad tonnage is light. Several mines are crushing for screenings and the price of these have gone down to $1.50 with no advance in the other sizes.

The St. Louis market is unusually quiet. Very little domestic coal is being handled except apartment-house and school contracts, and the price that this coal is being brought in at is not attractive to the dealers who are trying to make expenses. The most noticeable feature of this storage business thus far is the lack of anthracite orders. Railroad coal and smokeless coal are dropping off and coke is not taking the business expected. Oil burners are reported going in at the rate of fifteen to twenty per day and no effort is made by coal men to counteract this movement. Wagonload steam is unusually quiet and carload is just fair, considering. Country domestic is hard to find and there is very little country steam business. No change is reported in prices.

## Much Kentucky Coal Moves at Low Prices

Although Kentucky has been producing close to a million tons of coal a week and moving a lot of fuel, complaint is heard concerning prices in eastern Kentucky, where with adequate car supply and many mines now running full, there is too much coal available for the higher priced operators to advance quotations. All efforts to shove prices above the $2.25 mark on best 4-in. block have failed. There may be a few orders on specialty coals moving at above that figure, or now and then a "sleeper" may be caught, but there is plenty of block at $2@$2.25, with egg and lump at $1.75@$2.10. Mine-run is firm at $1.35@$1.75.

Eastern Kentucky screenings have been offered to large industrial consumers at as low as 90c. at points south of the Ohio River during periods of short embargoes at Cincinnati when the Baltimore & Ohio R.R. was unable to accept all the lake coal coming through. Such embargoes have been only of short duration, slapped on for probably twenty-four hours to relieve congestion at the Cincinnati terminal.

Western Kentucky continues in poor shape, with domestic prepared offered as low as $1.10 for some off grades, and markets at $1.25@$1.50 on good coals. Mine-run and screenings are around $1@$1.25, with some screenings available as low as 90c. in small lots.

## Northwest Trade at Standstill

Despite dullness of trade more ships came through laden with coal last week than in any one week since the opening of navigation. In all fifty-one cargoes were landed, of which nine were hard coal, and eighteen are reported on the way from lower lake ports, of which three are anthracite.

Trade at the head of the lakes is absolutely at a standstill. Nothing but spot coal which is absolutely necessary for the operation of factories is going out, and this does not begin to keep up with shipments to the docks. The docks are piling up, and serious congestion may result. Buyers are all waiting for a drop in prices, but dock men seem confident that the present levels will continue.

Prices are steady on both hard and soft coal. The usual 10c. a month raise went into effect July 1 on hard coal. This makes egg, $13; stove, $13.40; nut, $13.25; pea remains at $10.10 and buckwheat at $6.50. There are big stocks of hard coal here but the dock men hope to get rid of them in the fall. The Northwest is not frightened, however, by any possibility of a hard-coal miners' strike as most householders will use Pocahontas anyway.

Briquet manufacturers are lining up for the season, expecting a large amount of business among former users of hard coal who want briquets instead of soft coal.

In the Twin Cities buyers are more than reluctant to buy coal in advance of needs, and feel little urge to do so, believing that they can get as good a price when they can use the coal, sixty days later, as they can now. Some railroad business has been discussed a little, but otherwise very little has been doing in any direction. Commercially, the general situation is one of awaiting developments. Prices continue as they have been. If crop conditions continue to be as promising for another month as they have been up to this time, the Northwest seems to be in line for a good volume of business this fall. And it will include a material addition to the coal movement. Buying and production have been on a limited scale for a long time, and a little increased buying would start a better volume in manufacturing and jobbing, with an increased need for coal all along the line.

Little can be said about the Milwaukee coal situation during the prevailing summer dullness. Cargoes are arriving steadily and dock managers seem to be looking out for their usual supplies for another winter. Naturally they are disturbed to some extent by the wage scale differences of operators and miners, and naturally also they are hoping that consumers may feel inclined to protect themselves by filling their bins early. Retail prices for anthracite were pushed up 10c. in Milwaukee with the beginning of July. Egg now is sold for $16.20 spouted and $16.95 carried in; stove for $16.60 and $17.35 respectively; and nut for $16.45 and $17.20. The prices of pea and buckwheat were not raised correspondingly. Pocahontas nut now sells for $10.25 spouted and $11 carried in.

## Southwestern Market Steadier

The movement of a little coal for threshing and school storage has had a steadying effect on the Southwestern market. While there have been no changes in prices, those in effect are firmer than they have been, and, with production reduced to the demand, no surplus is accumulating at the mines. No domestic storage is reported, but it is expected to start late this month or early in August, providing a market which will open up Arkansas mines, virtually all of which are now closed.

In Colorado there has been no improvement in coal conditions. Dealers continue to withhold orders until the rate reductions to the Missouri River territory become effective.

Aug. 4. Mines are operating on an average of about two days a week with an oversupply of labor. The new prices for Dawson and Raton domestic lump and fancy egg are \$4; fancy nut, \$3.75; fancy pea, \$3.25, and base-burner coke, \$6.

The Utah coal business is about normal for this time of year. The chief industrial consumers are the mines and smelters, but the railroads, cement plants and sugar companies are taking a little coal. The domestic business is doubled due to weather conditions. The slack situation continues easy, but, thanks to the storage capacity of the mine-owned yards, lump coal being mined is not the problem it would otherwise be. The price situation is unchanged and there is an abundance of labor.

### Cincinnati Market Stiffens

Cincinnati sees far-reaching possibilities in the word that one company that has done much in setting prices in the past ten months will place a price of \$2.25 on its 4-in. lump and \$2 on its egg and 1½-in. screened coal on July 15. This corporation, which operates in some of the finest veins in the Island Creek district of West Virginia, has held consistently to \$2 and has produced heavily during the period alluded to.

Lake buying has been rather heavy within the past week, mostly of mine-run. Screenings, too, have been affected and the price has advanced again to a solid \$1.10@\$1.15, with some of the first asking as high as \$1.25. Stove and egg continue fairly strong, but domestic lump lags.

The smokeless situation is difficult to gage. Some looked for a July rise because of light domestic and retail buying, but lump is limping along at \$2.75 spot, with some direct selling agents holding to \$3. Stove sizes are weak and most of the nut is going at the straight mine-run price. Mine-run is now firm at \$2 and screenings also have stiffened a bit through the advance of bituminous, with a range of \$1.25@\$1.35.

The speech of John L. Lewis at Scranton has been seized upon as food for buying talk and retailers and dealers in domestic sizes have been urged to get a move on before the clouds break.

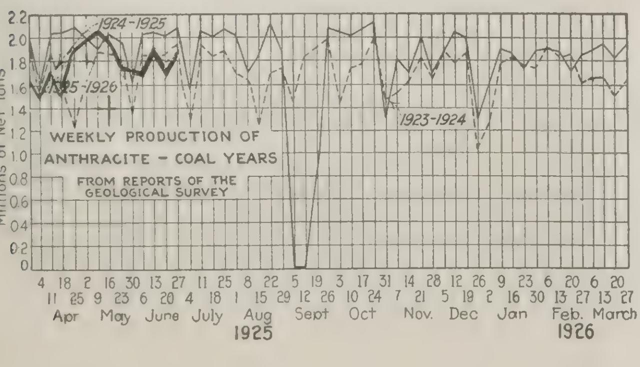
In a retail way there has been little or no change. Home storage now is said to be the lightest in five years. River movement continues good with the stream benefited by rains both on the tributaries and in the upper valleys.

Only a slight change has taken place in the southern Ohio coal trade during the past week. As reserves are getting low some of the larger users are buying in larger quantities. Domestic demand has not increased materially, as dealers have not started to take in tonnage. The market is still somewhat irregular although both producers and distributors believe that a better demand will develop later in July.

Utilities, railroads and public institutions, including schools, are taking a pretty good tonnage of steam sizes. A fairly steady demand from other sources has kept the market fairly clean. The amount of distress coal has been reduced to a large extent and the extremely low quotations heard several months ago are not found at this time.

Buying on the open market is the practice of many large consumers not having contracts. Railroads are still buying on the market in preference to entering into contracts, although a few of the carriers have made agreements for a good tonnage. Nut, pea and slack are rather firm, due largely to the reduced production of lump, and this condition is expected to be maintained for several weeks. West Virginia slack is following the lead of Ohio-mined grades and has strengthened.

Lake trade is rather steady and a part of the tonnage is coming from Ohio mines. Movement of bottoms has been rather good and reports show a good tonnage landed at the head of the lakes.



Retailers in central Ohio are at sea as to stocking. So far householders have shown little disposition to buy and as a result the dealers are playing a waiting game. Retail prices have stiffened to a certain extent, although some dealers are still cutting in order to clean up their yards.

There has been no change in the eastern Ohio market situation; general demand is showing little life and spot prices are holding at the level of recent weeks. Steam demand is not sufficient to develop into inquiries and producers are keeping well ahead of industrial needs. Operators and jobbers simply describe the situation as being the worst through which they have passed in many years and are unable to point to a single constructive factor likely to change conditions in the near future.

Production at mines in the eastern Ohio No. 8 district during week ended June 27 increased 14,000 tons over that of the preceding week. Total output was 237,000 tons or about 34 per cent of potential capacity. Two additional mines have resumed operations, but one is an industrial mine whose output is wholly taken by a large industrial concern.

### Conditions Unchanged at Pittsburgh

At Pittsburgh slack is said to be a trifle easier, but this is denied by some well-posted authorities. There has been a little search for nut coal, which is not so easily found, as its production depends on the vagaries of lump shipments. In general, however, the coal market is unchanged. Demand remains very light, and prices, except occasionally in the case of slack, are changed, having long ago gotten to the irreducible minimum. Operation in the Pittsburgh district continues to be guessed at around 20 per cent of capacity.

The Buffalo bituminous trade continues its recent course though the more active shippers quite often show a pretty fair string of orders, but this is not common enough to be very encouraging. Consumption seems to be pretty good. Quotations continue at \$1.60@\$1.75 for Fairmont lump, \$1.40@\$1.50 for mine-run and \$1.25@\$1.40 for slack; \$2.25@\$2.50 for Youghiogheny gas lump, \$2@\$2.25 for Pittsburgh and No. 8 steam lump and \$1.30@\$1.50 for slack; \$1.75@\$2 for Allegheny Valley mine-run. Cambria County smokeless retails at \$6 at the curb for domestic use.

### Seasonal Lull Deepens New England Calm

The steam coal market in New England continues under the same depression that has been characteristic now for a long period, and the dullness usual in midsummer only accentuates it. Buyers have next to no interest whatever in current offerings and prices keep wavering with the individual situations of the several shippers. Quotations of \$4.10@\$4.15 per gross ton f.o.b. vessel at Hampton Roads are by no means unheard of, even for highest grade Navy standard, and apparently there are fewer and fewer instances of higher returns. Eastern New England supplies much the greater outlet for what coal is dumped at Norfolk, and Newport News, but besides deliveries on contract there are only occasional sailings for this territory.

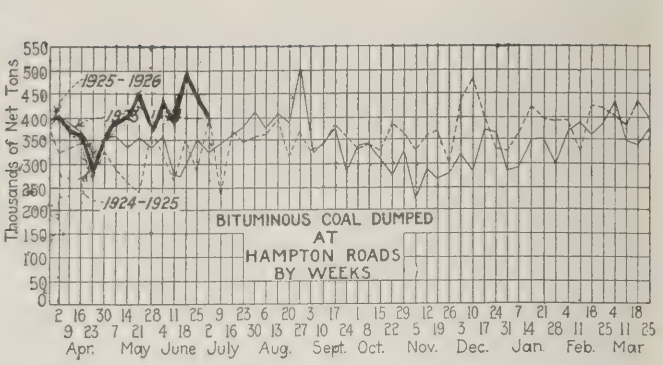
On cars Boston and Providence there is only occasional inquiry. While coal is being held at \$5.25@\$5.40 sales are still being reported at \$5.10@\$5.15, although the various factors try not to quote these figures except on 500- or 1,000-ton lots for spot shipment.

Central Pennsylvania coals in this market are now mentioned scarcely at all. Prices are quoted occasionally, but so large a number of operators have shut down awaiting an adjustment in wages that only a relatively few different coals are available.

Most of the industries here are on part time with only slack business. Practically every consumer of any size is using less coal this year than in 1924 because of the general commercial situation, although this loss is in part made up by the more extended use of bituminous in place of anthracite for domestic purposes.

### Encouraging Signs at New York

Judging from complaints heard, no one is buying bituminous coal in the New York market. There are some encouraging signs, however, sales agents saying that business was a trifle more active last week and that, judging from inquiries received, consumers are showing more interest.



Operators of non-union mines say that business has been better and they believe it will gradually increase. Prices, however, fail to show any change from last week and for several previous weeks.

The "spot" contract awards of the U. S. Shipping Board for coaling vessels in this harbor have been an outlet for several thousand tons of coal for local houses, although the prices have been low.

In a general way everything is quiet in the Philadelphia market, yet producers are moving a little more coal. Concerns with contracts seem to be willing to take larger supplies, and this, with railroad business, has been sufficient to create fair activity for certain shippers in this district. Of course, the real difficulty continues to be low prices.

In the gas-coal market slack is still most wanted, and if anything there is a little better supply of it. The price remains not far from that of mine-run.

Nothing new has developed at tide, and outside of bunkering, activity has almost ceased.

At Baltimore the first reflection of the British labor situation comes in a sharp increase in inquiry for American coals for foreign delivery in the past few days and the renewal of at least some shipping activity to foreign ports. The call for home consumption is extremely light and prices remain on the same level at which they have been set for several months past.

### Better Outlook at Birmingham

Inquiry for domestic coal at Birmingham is reported from some quarters to be picking up slightly, but opinion in the trade as to any material improvement in spot buying or the making of contracts during this month is divided. Some of the larger producers report the outlook as having improved perceptibly in the past few days with July spot bookings sufficient to take care of their entire output above contract obligations. Others haven't orders in hand as yet to absorb their surplus output entirely, but feel that such business will be taken on from day to day as will enable operations to carry on at least on a parity with the schedules observed in June.

Generally speaking, there is little change in the steam market. Ice plants are consuming about their maximum tonnage at this time and the power companies also are using considerable fuel at their steam operations. Railroads are taking about the same amount of coal as for several weeks past, and cement plants and textile industries are operating full time, using a large amount of fuel. Buying in the open market is for current needs and few new contracts are being taken on.

Quotable mine prices on all grades are the same as a week ago. The mines are operating on a basis to care for business in hand or reasonable anticipations under the market conditions and there is little surplus fuel. Lump and other domestic sizes are not moved as readily as desired in all cases, but there is no serious delay in disposition.

### Hard-Coal Trade Neglected

Producers and shippers of anthracite are doing little more than marking time in the New York market. Consumers are indifferent despite the possibility of a suspension of mining at the end of next month.

The larger companies, as was expected, advanced the prices of the domestic coals 10c. per ton on July 1. The relative position of the larger sizes of hard coal did not change last week. Stove continues to head the list in demand, with egg close at its heels. Chestnut seems to be causing nearly as much trouble as pea. Along the line the former is in better demand than in the Metropolitan area. The smaller coals are quiet, with No. 1 buckwheat in oversupply. Barley is holding its own while rice is in fair demand.

The trade at Philadelphia is on about the same level as last week, although there are prospects of some improvement. Since the miners got together to formulate demands, the public is taking a little more interest. No doubt the coming week should see an increase in retail buyers.

Most operators have been losing some time at the mines, but are in hopes that with a little improvement they will be enabled to go through to Sept. 1 without any more production losses. While most dealers are filled up with coal, news from the miners' meeting enables them to find space for an occasional additional car.

As expected, all operators added 10c. a ton for July to the mine price of egg, stove and nut, with nothing added to pea and the smaller sizes. Steam sizes are draggy, especially buckwheat, and the independents are willing at times to shade 25c. and better on fair sized blocks of this size. Much the same is true of rice, and while barley moves fairly well there is more than a plentiful supply.

Anthracite selling in Baltimore is almost at a standstill. Neither the public nor the dealers are convinced that a hard-coal strike is coming. Should a feeling grow that a strike is inevitable, even one of short duration, there will be a rush of dealers to get through deliveries from the mines, and then the buying public will hustle in an effort to get under cover. Prices remain so far on the same schedule as for June.

Buffalo hard-coal dealers agree that the trade is much duller now than usual in warm weather and they are all at a loss to know why. The public does not appear to be much disturbed at the possibility of a strike and it is doubtful if a single load of coal has been sold on the strength of what may happen at the present wage meeting.

As to coke it does not appear that anybody wants any, Canada was buying, but now it is all Alberta coal, though local shippers do not appear to fear that much. It must be classed along with soft coal at the best and we can sell that much cheaper than Alberta coal goes for, on a $7 freight rate from the mines.

Lake coal shipments are now pretty nearly all going over a single dock and when the upper lake docks are all full that will have to slow up too. For the week the amount loaded was 59,100 tons, of which 32,800 tons cleared for Duluth and Superior, 10,000 tons for Milwaukee, 6,500 tons for Chicago, 5,500 tons for Fort William, 3,000 tons for the Sault and 1,300 tons for Racine. Rates are unchanged.

### Connellsville Coke Market Sluggish

A few additional Connellsville merchant coke ovens have gone out, on account of expiration of contracts July 1, and the whole situation is virtually settled until some important change occurs in blast-furnace operations. The furnaces that will operate, such as normally use purchased Connellsville coke, are covered by contracts for the third quarter or half year, one of these having byproduct coke from Youngstown. It is understood there is more to be had there at $2.75, Connellsville equivalent, a price it is generally assumed Connellsville operators would not try to meet. Possibly they would shade $3 a trifle if opportunity presented itself, but there is no inquiry.

So far as known there was no buying for the single month of July and there has been no spot demand from furnaces for some time, which confirms the understanding that all the furnaces to operate are taken care of.

The contract market remains quotable nominally at $3@$3.25. Operators might in future ask more than has been done on contracts, which were chiefly at $3, because recent selling was to get a backlog only.

Spot foundry coke remains at $3.75@$4.25 and is dull.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended June 20, 1925 | 982,600 | 153,663 |
| Previous week | 987,196 | 157,559 |
| Week ended June 21, 1924 | 903,546 | 140,814 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| June 22, 1925 | 308,825 | 111,820 | ...... | ....... |
| June 14, 1925 | 313,494 | 117,496 | ....... | ....... |
| June 22, 1924 | 359,644 | 167,315 | ....... | ....... |

# Foreign Market And Export News

## Depression in British Market Hits Steam Coal Trade

The general situation in the British steam coal trade leaves much to be desired, and even the anthracite trade is not so brisk as it was a few weeks ago, the result being that prices are much lower. The existing depression, however, affects the steam side of the industry most, as there is absolutely no life in the market, for the reason that foreign demand is so meager, owing partly to the keen competition from other coal fields and partly to the fact that foreign exchanges are so adverse to business.

The possibility of untoward developments in the labor situation fails to stimulate demand from abroad. It is, therefore, not surprising that there is a lack of loading pressure at most of the South Wales docks and that many collieries are experiencing some difficulty in finding an immediate outlet for their output, notwithstanding the numerous pits that are idle.

There is no improvement in the Northern coal trade, as buyers still hold off. There are inquiries on the market, but they are distributed over a large number of merchants, and though giving the impression that there is a large volume of trade, they really amount to little. Reports from Continental centers do not give much encouragement of a revival of interest for some time to come. Merchants recently returned from business journeys in Germany, France, Belgium and Holland state that they did not find much improvement in the demand for coal. Germany has very large stocks to dispose at low prices.

Production by British mines in the week ended June 20, a cable to *Coal Age* states, totaled 4,465,000 tons, compared with 4,980,000 tons in the preceding week.

### Holiday Slump at Hampton Roads

Business at Hampton Roads continued dull last week, particularly with the holiday in sight and the mines shutting down three days. Most mines serving this port were operating only three days a week anyway.

Inquiries were decreasing and foreign shipments were falling off materially. The Shipping Board took several 1,000-ton lots as low as $4.08, the lowest figure quoted for many weeks. Some distress coal was being offered nearly that low. The tone of the market was weak.

### French Trade Stationary; Strike Averted

The situation in the French coal market is still extremely trying; consumption has not increased and stocks are practically stationary.

In order to settle the wage controversy the mining companies proposed that instead of revoking the 40 per cent allowance for the high cost of living it be cut to 20 per cent. The men accepted this proposal, and the threatened strike has been averted.

To help the sale of French coals, a proposal to reduce transport tariffs to the west is being considered, but the railway companies, whose condition is far from prosperous, are not inclined to face a cut with equanimity. Import licenses for foreign fuels, particularly German coals, have not been re-established due to opposition by railways and metallurgical plants.

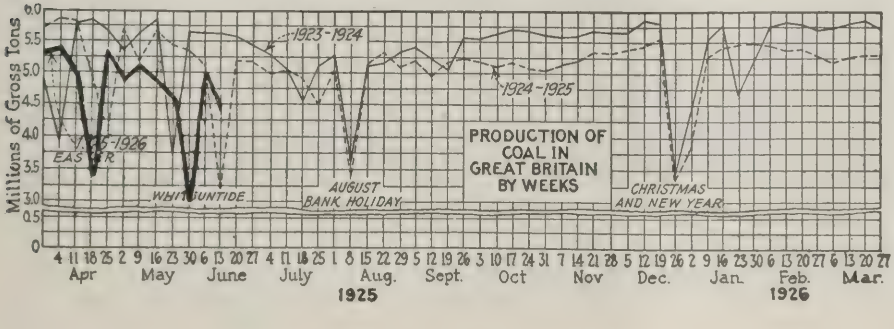
In May the Office des Houillères Sinistrées received from the Ruhr 591,900 tons of indemnity fuels (against 583,500 in April), including 267,500 tons of coal, 292,100 tons of coke and 132,399 tons of lignite briquets, a daily average of slightly more than 19,000 tons. From June 1 to 6 the receipts were 20,500 tons of coal, 53,200 tons of coke and 2,700 tons of lignite briquets.

During the first seventeen days of June the O.R.C.A. received from the Ruhr 147,135 tons of indemnity coke.

### U. S. Fuel Imports in May

(In Gross Tons)

| | 1924 | 1925 |
|---|---|---|
| Anthracite | 494 | 2,972 |
| Bituminous, shale and lignite | 8,864 | 139 |
| Bituminous coal and slack | 6,168 | 34,770 |
| Imported from: | | |
| United Kingdom | 800 | ........ |
| Canada | 6,168 | 34,909 |
| Japan | 7.764 | ........ |
| Other countries | 300 | ........ |
| Coke | 5,680 | 9,959 |



### Destination of Fuel Exports from United States in May

(In Gross Tons)

| | 1924 | 1925 |
|---|---|---|
| Anthracite | 271,984 | 325,356 |
| Bituminous | 1,273,267 | 1,356,933 |
| Exported to: | | |
| France | 58,949 | 11,551 |
| Italy | 51,962 | 93,986 |
| Other Europe | 1,000 | |
| Canada | 910,563 | 1,001,799 |
| Panama | 38,611 | 19,235 |
| Mexico | 6,451 | 9,447 |
| British West Indies | 5,165 | 14,664 |
| Cuba | 29,884 | 49,315 |
| Other West Indies | 13,929 | 18,079 |
| Argentina | 22,788 | 19,430 |
| Brazil | 122,959 | 78,926 |
| Chile | 9,300 | |
| Egypt | | 2,674 |
| French Africa | 7,604 | 13,299 |
| Other countries | 25,002 | 24,528 |
| Coke | 40,295 | 58,637 |

### Export Clearances, Week Ended July 4, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Brazil: | |
| Br. Str. Eastgate, for Santos | 5,733 |
| Br. Str. Goathland, for Rio de Janeiro | 5,433 |
| Amer. Str. Circinus, for Rio de Janeiro | 7,175 |
| Br. Str. Carlton, for Rio de Janeiro | 6,881 |
| Br. Str. Tapti, for Rio de Janeiro | 6,097 |
| Br. Str. Antav, for Rio de Janeiro | 9,103 |
| For Newfoundland: | |
| Nor. Str. Frithjol, for Botwoodville | 3,625 |
| For Canada: | |
| Nor. Str. Utsire, for Gaspe | 2,079 |
| For French West Indies: | |
| Dan. Str. Nordlys, for Fort de France | 5,969 |
| For Canal Zone: | |
| Amer. Str. Lebore, for Cristobal | 9,785 |

FROM BALTIMORE

| | |
|---|---|
| For Port Rico: | |
| Am. Str. Gov. John Lind, for San Juan | 835 |

### Hampton Roads Pier Situation

| N. & W. Piers, Lamberts Pt.: | June 25 | July 2 |
|---|---|---|
| Cars on hand | 1,388 | 1,839 |
| Tons on hand | 83,752 | 117,458 |
| Tons dumped for week | 126,653 | 111,958 |
| Tonnage waiting | 15,000 | 20,000 |
| **Virginian Piers, Sewalls Pt.:** | | |
| Cars on hand | 882 | 908 |
| Tons on hand | 52,250 | 67,500 |
| Tons dumped for week | 94,666 | 85,150 |
| Tonnage waiting | 4,728 | 5,160 |
| **C. & O. Piers, Newport News:** | | |
| Cars on hand | 3,187 | 4,648 |
| Tons on hand | 163,325 | 186,725 |
| Tons dumped for week | 178,047 | 161,302 |
| Tonnage waiting | 7,370 | 6,990 |

### Pier and Bunker Prices, Gross Tons

PIERS

| | June 27 | July 3 |
|---|---|---|
| Pool 1, New York | $5.40@$5.75 | *$5.40@$5.70* |
| Pool 9, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 10, New York | 4.50@ 4.60 | 4.50@ 4.60 |
| Pool 11, New York | 4.25@ 4.50 | 4.25@ 4.50 |
| Pool 9, Philadelphia | 4.65@ 4.90 | 4.65@ 4.90 |
| Pool 10, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 11, Philadelphia | 4.25@ 4.30 | 4.25@ 4.30 |
| Pool 1, Hamp. Roads | 4.25 | *4.20* |
| Pool 2, Hamp. Roads | 4.10 | *4.08* |
| Pools 5-6-7, Hamp. Rds. | 4.00 | 4.00 |

BUNKERS

| | June 27 | July 3 |
|---|---|---|
| Pool 1, New York | $5.65@$6.00 | *$5.65@$5.95* |
| Pool 9, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 10, New York | 4.75@ 4.85 | 4.75@ 4.85 |
| Pool 11, New York | 4.50@ 4.75 | 4.50@ 4.75 |
| Pool 9, Philadelphia | 4.80@ 5.05 | 4.80@ 5.05 |
| Pool 10, Philadelphia | 4.60@ 4.80 | 4.60@ 4.80 |
| Pool 11, Philadelphia | 4.45@ 4.65 | 4.45@ 4.65 |
| Pool 1, Hamp. Roads | 4.30 | 4.30 |
| Pool 2, Hamp. Roads | 4.20 | *4.15* |
| Pools 5-6-7, Hamp. Rds. | 4.10 | 4.10 |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | June 27 | July 4† |
|---|---|---|
| Admiralty, large | 25s.6d.@ 26s. | *24s.6d.@ 26s.* |
| Steam smalls | 15s. | **15s.6d.** |
| Newcastle: | | |
| Best steams | 16s.9d. | **17s.@ 17s.6d.** |
| Best gas | 18s.@ 18s.6d. | **18s.6d.** |
| Best bunkers | 16s.6d. | *15s.@ 16s.3d.* |

† Advances over previous week shown in **heavy type**; decline in *italics*.

# News Items From Field and Trade

## ALABAMA

Statistics for 1924 just completed by Chief Mine Inspector C. H. Nesbitt show that coal output for the year in Alabama aggregated 19,615,931 net tons as compared with 20,919,303 for 1923, which was the record production for this field. A total of 4,620,282 tons of coke was produced, as against 4,689,641 for the previous year. Of the coke production, 4,455,990 tons, or 96.4 per cent, was made in byproduct ovens. There were 77 fatal accidents during 1924, or one for every 361 employees, and one life was lost for every 254,752 tons of coal mined. This field worked 177 days and there was an average output of 705 tons for each employee in the industry. Statistics show that 16,024 miners were employed, 7,076 inside daymen and 4,729 outside daymen, or a total of 27,829. Of the total output of coal 12,587,605 tons was washed, or 64.2 per cent. From present indications production for 1925 will show a material decrease as compared with 1924.

## COLORADO

Three miners were killed and two other men were injured June 19 as the result of an explosion in the Gordon mine, six miles northwest of Walsenburg. Lack of proper ventilation was held responsible for the explosion in the verdict returned last week by a coroner's jury under the direction of Coroner Dave Murphy. Blame for the fatal accident was placed upon officials of the mine, but was not directed at any particular official, and there were no definite charges to indicate that criminal prosecution would result.

## ILLINOIS

Representatives from the mining and selling organizations of the Bell & Zoller Coal Co. recently organized an automobile caravan which made a week's tour of Missouri, Illinois, Iowa, Wisconsin and Minnesota cities boosting Zeigler coal as well as the city itself.

Donk Bros. Coal & Coke Co., East St. Louis, has increased its directors from five to nine.

Chester A. Harris, who until recently was associated with the Southern Gem Coal Corporation, is now with the Forsythe Coal Co., with headquarters in Chicago.

The Forsythe Coal Co., after months of intensive work, expects to start stripping operations on its properties west of Ward station, on the Illinois Central R.R., early in July. The company is at present employing about 35 men. The plans call for the stripping of a 200-acre tract first, after which other large tracts held under lease by the company will be mined by the same method.

## KANSAS

The Home Riverside Coal Co., operating two mines at Leavenworth, notified its 350 employees June 30 that they must revert to the 1917 wage scale or close down. No action was taken by the miners pending discussion of the situation with district officials.

The executive board of District 14, United Mine Workers, voted June 23 to submit to a vote of the district a proposal to increase from 4 per cent to 6 per cent the tax levy on employed miners for the relief of the unemployed in the district.

The Doubleday Coal Co. mine near Gross, at which United Mine Workers demonstrations have been frequent in recent months, and which has been idle several weeks as a result of the activities of the union to prevent it operating open shop, resumed work July 1, under the 1924 contract. The contract was signed June 29. It is between union officials and W. H. Barrett. Mr. Barrett, for some time general superintendent for the Doubleday company, is understood to have a lease arrangement with the owners. One hundred and forty men are employed at the mine.

## KENTUCKY

The Letcher Coal Mining Co., Whitesburg, which has been in receivership for some months past, may soon start operations under the receivers, it is reported.

The Kentucky & West Virginia Power Co., furnishing power to a number of mines in eastern Kentucky, reports that power demand from coal companies is the largest in its history. The company is building a new high-tension line from Kona to Jenkins, to furnish auxiliary service to the Consolidation Coal Co.

## MICHIGAN

The reorganization of the old Central Coal Mining Co., Bay City, into the Crescent Coal Co. on a scale to produce 250 tons of bituminous coal daily for local distribution only was announced recently by Charles McNair, one of those interested in the project. A crew of workmen is now engaged at the mine, which is located in the Salzburg district, in pumping the water from the shaft and entries.

## MINNESOTA

Henry Ford has renewed the lease on his dock property at Duluth at the rate of $70,000 a year. He owns all the bonds on the dock at present and has started foreclosure proceedings. This, however, will take about a year, and the dock would not become his until next autumn.

**Tipple at Worley, or No. 4, Mine, Stearns Coal & Lumber Co.**

Worley is in McCreary County, just south of Yamacraw. This plant has shaking screens, two loading booms and car retarders. Sharp curves seem to be characteristic of the Kentucky & Tennessee Ry.

It is said that if he gains title to the dock he will start improvements immediately.

## OHIO

The New York Coal Co., of Columbus, which has been operating a washer in the Nelsonville district, has been compelled to reduce operations at the plant because of an order of the United Mine Workers that co-operative mines must not operate unless the miners can show that they are making union wages. The washer has been operated to a certain extent on product furnished by co-operative mines but a portion of this supply is now lacking.

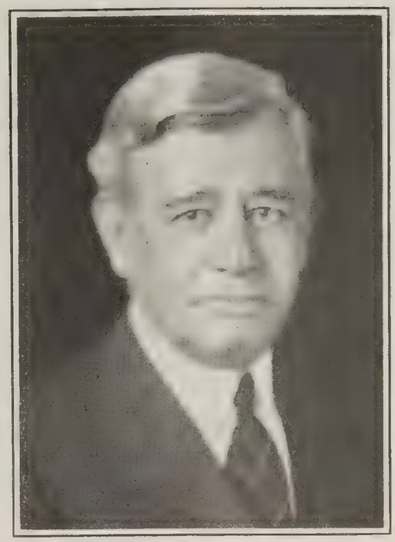
Walter Conradi, who for a long time has been connected with the Logan County Coal Corporation in Cincinnati, has joined the force of the American Coal & Export Co., which has opened offices in the new Atlas Bank Building there.

The Pittsburgh Coal Co. took immediate steps following the burning of the power house at Mine No. 76, at Thomas, to replace the plant and expects to have it in operation within two weeks. The boiler as well as other power machinery was destroyed, putting the mine out of commission. The men employed at the mine were immediately transferred to Syracuse mine of the same company, only a short distance away, and continued production. The output of the Pittsburgh Coal Co. mines in the Pomeroy field is now more than 1,000 tons daily.

Quite a few of the smaller co-operative mines in the Nelsonville district of the Hocking Valley have been closed down recently as a result of the recent speech of John L. Lewis, president of the United Mine Workers. Following the speech the state officials of the miners' union have promulgated an order that all miners working in co-operative mines if not making the regular union wages must cease operations or be expelled from the union. This has reduced the output in the southern Ohio field materially, as about two dozen co-operative mines, employing from 5 to 25 men, were in operation.

## PENNSYLVANIA

During the last week of June the Stineman Coal & Coke Co. and the Stineman Coal Mining Co., having extensive mining operations at South Fork, Cambria County, posted notices that beginning July 1 the rate of wages paid at Stineman Nos. 1, 2 and 4 mines would be reduced 20 per cent, all other working conditions to remain the same. With the appearance of July 1 the mines were closed down, the miners refusing to accept the wage reduction. The Stineman normally employs around 900 men and 500 were at work when the mines closed. South Fork is strongly union, having the largest local union in the United States, and included in its membership is Richard Gilbert, secretary-treasurer of the United Mine Workers of District No. 2.



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**Morton L. Gould**

This is Mr. Gould's latest picture. As the one printed at the time of his election to the presidency of the National Coal Association was of the vintage of 1905, he was persuaded to face a photographer again after two decades. Mr. Gould is a native of Indiana, having been born in Terre Haute. He was educated at Indiana University. He did not enter the coal business at once but engaged in a merchandise brokerage business in Minneapolis and St. Paul and later in Omaha. For a time before becoming affiliated with the coal industry he was connected with a firm in Chicago doing a lumber and tie business. In 1895 Mr. Gould went to the Danville district in Illinois to take a clerkship in the office of a coal company. Five years later he returned to Indiana and became a producer on his own account.

At a meeting of the Board of Directors of the Empire Coal Mining Co. held June 27, the following changes in personnel were made, due to the recent death of William A. Webb, formerly president of the company: G. Webb Shillingford, of Clearfield, formerly treasurer and general manager of the company, was elected president and general manager. He also is vice-president of the Central Pennsylvania Coal Producers' Association and a director of the Empire Coal Mining Co., Pioneer Coal Co., Clearfield Trust Co. and the Pennsylvania Bituminous Casualty Co. E. J. Hauber, Philadelphia, formerly assistant secretary and assistant treasurer, is elected secretary and treasurer of the company. He formerly was connected with the Pennsylvania Coal & Coke Corporation, is a director of the Empire Coal Mining Co. and the Pioneer Coal Co. Charles Leslie Chapman, formerly chief engineer of the company, was promoted to general superintendent in charge of all operations of the company. L. Banks Smith, formerly purchasing agent, will assume the duties of assistant secretary and assistant treasurer in addition to his duties as purchasing agent.

Governor Gifford Pinchot has announced that he has continued the commissions of the following mine inspectors: Bituminous — John F. Bell, Dravosburg; C. P. Byrne, Charleroi; P. J. Callaghan, Bridgeville; F. W. Cunningham, Somerset; Nicholas Evans, Johnstown; Edward E. Girod, Masontown; W. H. Howarth, Bridgeville; William Langan, DuBois; Thomas S. Lowther, Indiana; Alexander McCanch, Monongahela; Thomas A. Mather, Tyrone; John I. Pratt, Pittsburgh; C. B. Ross, Latrobe; Thomas D. Williams, Johnstown, and David Young, Freeport. Anthracite—P. J. Moore, Carbondale; L. M. Evans, Scranton; D. T. Williams, Scranton; Augustus McDade, Taylor; E. C. Curtis, Kingston; John B. Corgan, Kingston; T. J. Williams, Kingston; D. T. Davis, Wilkes-Barre; Frank Kettle, Nanticoke; D. J. Roderick, Hazleton; J. J. Stickler, Hazleton; M. J. Brennan, Pottsville; P. C. Fenton, Mahanoy City; William Reid, Centralia; B. I. Evans, Mount Carmel; P. J. Friel, Shamokin, and Charles J. Price, Lykens.

## UTAH

Among those taken into custody on June 22 for participation in the lynching of a negro in Carbon County were E. E. Jones, superintendent of the Utah Fuel Co., Castlegate; Joseph Parmley, chief clerk of the company; L. T. Davis, the store manager, a night watchman, and another employee of the company. They are being held for murder. The

Courtesy Bertha-Consumers Co.

**Boarding House at Eureka Mine**

Many of the unmarried employees make their home here. In addition to providing the usual necessities, food and lodging, this building contains a poolroom and barber shop.

trouble arose when a negro miner murdered the Castlegate Marshal.

Herbert Z. Lund and others received a lease to 1,578 acres of Utah coal land on June 23. This lease with certain patents granted on account of work done on the old law, makes one of the largest coal estates in Utah. According to the terms of the lease, $100,000 must be spent on development work during the first three years, and in the fourth year the production of coal must reach 75,000 tons. The government royalty is 10c. a ton. Two other smaller leases were granted to other applicants at the same time. Joseph F. Livingston and George W. Ivory were granted a lease of 276.9 acres on the terms requiring expenditure of $10,000 with a minimum production after three years of 8,000 tons annually. Moses Paggi was granted a lease at Coalville of 200 acres. This land is part of a school section.

Judge Tilman D. Johnson has dismissed the suit brought against the Independent Coal & Coke Co. by a group of the Illinois stockholders on the ground of lack of jurisdiction. Hearings will commence at an early date in the case against John H. Tonkin as operator and manager of the company. The stockholders in question desire to prevent exercise of an option held by Tonkin on the property, which was alleged to have been granted to him without the consent of the plaintiffs, the minority stockholders. This company is incorporated under the laws of Wyoming, though its principal place of business and its property are in Utah. Judge Johnson, who presides over the local U. S. District Court, held that the case should have been tried in Wyoming. It is expected that an appeal will be taken to the Supreme Court of the United States.

What is said to be the largest and best coal tipple at any mining camp west of the Mississippi River, has just been completed by the Spring Canyon Coal Co. at its property at Storrs. The big structure cost $200,000 and has a maximum capacity of 4,000 tons per eight-hour day. The new tipple has five loading tracks. An extension type Manierre box-car loader enables the loading of box cars on three tracks at the same time. There are five loading booms which are said to be the latest word in tipple construction. There is also a complete plant for rescreening the small sizes of coal, and in connection with this, there is a "spiralizing" plant for taking the impurities out of the rescreened coal. Three hundred twenty-five tons of steel, exclusive of machinery, was used in the tipple. The camp of Storrs is henceforth to be known as "Spring Canyon."

## WASHINGTON

All the coal mines in western Washington have been invited to join in the annual contest of the Western Washington First-Aid and Mine-Rescue Association, to be held at Black Diamond July 25. A set of problems and a list of prizes are being prepared by John G. Schoning, of the U. S. Bureau of Mines; W. R. Reese, state mine inspector, and Martin Flyzik, director of safety. Teams will compete for the silver cups won last year at Coronado by Bellingham, Newcastle and Burnett. The rescue association has elected D. C. Botting, manager of mines for the Pacific Coast Coal Co., president, and H. E. Harvey, Carbonado, secretary.

## WISCONSIN

The Wisconsin Great Lakes Coal & Dock Co. will install a traveling crane at a cost of $100,000 on its property at Twentieth Avenue and Canal Street, Milwaukee. There is now one crane at the docks, but it was announced that it was not capable of handling the business now coming in and anticipated. When both bridges are in operation the total unloading capacity will be 1,200 tons an hour.

## WEST VIRGINIA

J. D. Rhodes has been promoted from the position of mining engineer to that of general superintendent of the Standard Island Creek Coal Co.'s mines at Taplin, Logan County.

Twenty-one students are enrolled in the short course in coal mining engineering at West Virginia University, Morgantown, this summer. Due to the depression in the industry the attendance has dropped.

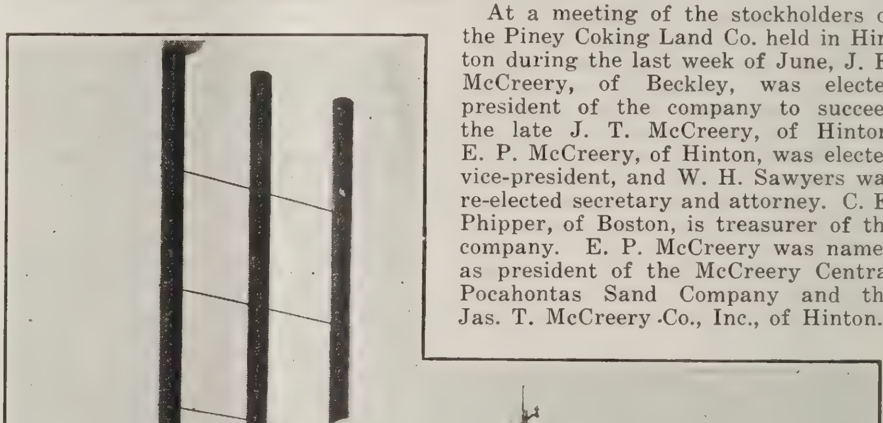
The girls' first-aid team of the Barrackville mine of the Bethlehem Mines Corporation won first place at the third annual inter-mines first-aid meet of the Bethlehem Mines Corporation in Harrisburg, Pa., June 27. The Barrackville mine-rescue team was third and the men's first-aid fourth. The girls' first-aid team of the Preston Division, with headquarters at Reedsville, was second.

The Paint Creek mines of the M. A. Hanna Co. as well as those at Boomer, W. Va., reopened the week of June 22 after inactivity for a period of over a year. These were closed when the Kanawha operators were refused a lower scale than the Jacksonville agreement and kept closed until all chance of a change of front on the part of the unionists was dissembled. They are now being operated on the open-shop plan.

Frank C. Shriver, of Morgantown, is the new president of the Chaplin Collieries Co., having been elected to the office at a meeting of the stockholders of the company held on June 27, to succeed J. L. Keener. Other officers elected at the same time include H. S. Hirshberger, of Pittsburgh, vice-president; P. A. Beaumont, of Morgantown, treasurer; J. S. Stewart, of Morgantown, secretary. The above officers together with the following now constitute the board of directors: Frank Orr, Leopold Sigwart, B. M. Chaplin, August Boehler and E. H. Stoner, the latter of Pittsburgh.

C. O. Strieby, of Elkins, attorney and trustee for the Deal Coal Co., sold the property of that company at court sale at Buckhannon on June 27. The property was sold to Ezra and Daniel Deal, of Cumberland, Md., principal creditors of the company, for $6,000. The purchase covers 143 acres of coal land about two miles from the city of Buckhannon. The mine has not been in operation for several years but the chances are that it will be leased as a result of the sale.

At a meeting of the stockholders of the Piney Coking Land Co. held in Hinton during the last week of June, J. E. McCreery, of Beckley, was elected president of the company to succeed the late J. T. McCreery, of Hinton. E. P. McCreery, of Hinton, was elected vice-president, and W. H. Sawyers was re-elected secretary and attorney. C. E. Phipper, of Boston, is treasurer of the company. E. P. McCreery was named as president of the McCreery Central Pocahontas Sand Company and the Jas. T. McCreery Co., Inc., of Hinton.



**West Kentucky Coal Co. Power Plant**

This plant, located at Earlington, Ky., is now tied in with the Kentucky Utilities Co. In January, 1925, this plant generated 1,300,000 kw.-hr., of which about 1,000,000 was sold to the power company.

Tipple at Frances Mine

Equipped to screen 350 tons of coal hourly, this tipple was in full operation, completely equipped, within three months from the start of the work of construction. The Frances operation is located at Franko, Marshall County, W. Va., about eight miles below Moundsville, on the Ohio River. The property consists of 1,671 acres underlaid with the Pittsburgh seam.

The property of the Sewell Valley Coal Co., at Beurytown or Secoma, has been sold to Donald Reinhold for a consideration of $150,000. The transfer covers 1,804 acres of coal land and all the mining property and equipment. A deed of trust for $150,000 on the same property has been given by the West Virginia Pocahontas Colliery Co., to the Huntington Banking & Trust Co., to cover an issue of bonds.

In giving figures covering fatal accidents in the mines of West Virginia during the month of May, the West Virginia Department of Mines has also given a list of the companies in West Virginia which are using rock dust or are preparing to use it. The list includes the Byrne Gas Coal Co., of Scottdale; Bethlehem Mines Corporation, Barrackville; Bethlehem Mines Corporation, Fairmont; Youngstown Sheet & Tube Co., Dehue; Island Creek Coal Co., Holden; Boone County Coal Corporation, Sharples; Boone County Coal Corporation, Blair; Raleigh-Wyoming Coal Co., Glen Rogers.

Cletus Harold Jenkins, vice-president of the Hutchinson Coal Co., Fairmont, has been named as a vice-president of the West Virginia Coal & Coke Co.

According to W. J. Harahan, president of the Chesapeake & Ohio R.R., the gross revenue of that road for May was $9,500,000, compared with $8,678,000 for May, 1924. "The main reason for this is that we handle non-union coal exclusively," Mr. Harahan said. "Due to the shutdown of union mines, the non-union mines are producing at a high rate. Seventy-seven per cent of our traffic is in coal. There is no indication of any interruption of work by non-union miners, and our coal movement will probably continue heavy throughout the year."

## WASHINGTON, D. C.

The Federal Trade Commission dismissed its complaint against the Boehmer Coal Co., of St. Louis, Mo., and the Victory Coal & Mining Co., of Duquoin, Ill. A stipulation as to the facts was entered into between the commission and the respondents. The Victory Coal & Mining Co. produces coal from its mine in the state of Illinois, which is marketed by the Boehmer Coal Co. The complaint alleged that respondent's use of the word "Victory Coal" misled the public to believe that their product was produced by a competing company.

## CANADA

Fire which broke out at 11 p.m., June 28, destroyed the buildings and other structures, except the company's offices, at the bankhead of the British Empire Steel Corporation's No. 11 colliery at Caledonia, N. S., where the miners are on strike. The origin of the fire is unknown. Further depredations, including incendiarism, looting and assaults, were reported on July 3.

As the result of a conference held in Toronto on June 26 between Sir Henry Thornton, president of the Canada National Rys., and representatives of the Ontario Government, the City of Toronto, the Board of Trade and the Canadian Manufacturers Association, Sir Henry has reconsidered his refusal to carry out the agreement entered into for the shipment of Alberta coal to Ontario at a rate of $7 per ton. The experimental shipment of 25,000 tons of coal at that rate will be undertaken as soon as possible. Accurate data will be kept of each item entering into the cost of the eastward haul as a basis for future calculations to fix a permanent rate. Any cost to the railway over and above the $7 freight charge will be met by the federal government, which has made an appropriation of $25,000 for that purpose.

With the recent vote by the Coalhurst (Alta.) miners indorsing the new wage agreement, in line with that adopted by the Galt miners, the whole Lethbridge domestic coal field is now working under a new wage schedule.

There was a slight decline in Canadian coke production during May the output amounting to 130,068 tons, produced from 199,235 tons of coal. More imported coal was used than in any previous month this year, owing to the difficulty of obtaining Canadian coal for the use of coke ovens in Eastern Canada. Foreign coal charged to coke ovens totaled 154,754 tons, while the use of domestic coal declined to 44,481 tons, as compared with 75,873 tons used in April. Imports of coke rose from 35,080 tons to 45,954 tons. As exports of coke increased only from 4,047 tons in April to 4,968 tons in May, the apparent consumption of coke in Canada was 174,054 tons, as compared with 162,517 tons available for use in April.

It is announced from Toronto that the Crows Nest Pass Coal Co., with the object of utilizing its coke, may make an effort to get into the iron and steel business. A dividend of 3 per cent has been declared by the company payable to shareholders of record May 12. Latest advices from the collieries of the company are to the effect that the company has been steadily working into a more favorable position. A daily output of 3,000 tons of coal has been maintained recently since the settlement of the labor difficulties and shipments have been practically uninterrupted since the resumption of operation.

# Traffic

## Roads Present New Schedule In Indiana Rate Fight

Another step in the controversy to adjust Indiana coal freight rates was taken June 29 when railroad representatives and coal carriers in the state presented a proposed new schedule of rates before attorneys and consumers and receivers of coal in the state. The purpose of the meeting was an attempt to make a compromise between the shippers and carriers in the coal-rate fight.

In presenting the new schedule the carriers will attempt to gain an increase on the rates now in effect on short hauls, which are those under fifty miles. It is not thought any decision will be reached without several meetings as the Evansville Chamber of Commerce, the Indiana State Chamber of Commerce, and coal users in Vincennes, Brazil and Terre Haute, and coal operators in those cities have organized to fight the adoption of such a schedule.

The present rates went into effect in August of last year after several hearings before the Indiana Public Service Commission. Since then a series of legal proceedings have been under way over the rate situation. Many of the larger coal consumers of Indiana say that if these proposed increases are put into effect it will mean they can buy coal cheaper from Kentucky, Illinois and West Virginia than from Indiana fields. If, after a series of conferences, no agreement is reached, the decision in the case will be given by the Interstate Commerce Commission, which several months ago recommended that the carriers and consumers attempt to settle the controversy.

## Recent Patents

**Device for Firing Explosives by Electricity**; 1,532,125. Alexander Djidics, Tamaqua, Pa., assignor to the Atlas Powder Co., Wilmington, Del. April 7, 1925. Filed Nov. 21, 1924; serial No. 751,281.

**Self-Contained Breathing Apparatus**; 1,532,654. Alexander B. Dräger, Lubeck, Germany. April 7, 1925. Filed June 9, 1921; serial No. 476,237.

**Automatic Release for Tramway Buckets**; 1,532,812. Frederick W. Grice, St. Louis, Mo., assignor to Broderick & Bascom Rope Co., St. Louis, Mo. April 7, 1925. Filed Feb. 8, 1924; serial No. 691,512.

**Coal Testing**; 1,532,826. Rudolf Lessing, London, England. April 7, 1925. Filed Sept. 12, 1921; serial No. 500,180.

**Mining-Car Coupling**; 1,532,887. Edgar A. Cunningham and Harry Homad, Mallory, W. Va. April 7, 1925. Filed June 12, 1923; serial No. 644,879.

**Breathing Bag for Self-Contained Breathing Apparatus**; 1,533,172. Alexander B. Dräger, Lubeck, Germany. April 14, 1925. Filed April 13, 1922; serial No. 552,070.

**Mining Machine**; 1,533,316. Morris P. Holmes, Claremont, N. H., assignor to Sullivan Machinery Co., Chicago, Ill. April 14, 1925. Filed June 13, 1921; serial No. 477,943.

**Safety Device for Mine Cages**; 1,533,576. William F. Torrance, Dalmuir, Scotland, assignor of one-half to A. C. Stewart, Clydebank, Scotland. April 14, 1925. Filed April 14, 1923; serial No. 632,050.

**Mine Car**; 1,533,762. Hugh W. Sanford, Knoxville, Tenn. April 14, 1925. Filed Aug. 8, 1924; serial No. 730,892.

**Coal Chute**; 1,534,023. Harold E. Betton, Lynn, Mass. April 21, 1925. Filed April 17, 1924; serial No. 707,306.

**Self-Dumping Mine Car**; 1,534,135. Ralph G. Nichols, Richmond Hill, N. Y., assignor to American Car & Foundry Co., New York. N. Y. April 21, 1925. Filed Nov. 30, 1921; serial No. 518,891.

**Concentrator Construction**; 1,534,224. Richard A. Leahy, Bonne Terre, Mo. April 21, 1925. Filed Sept. 15, 1922; serial No. 588,389.

**Apparatus for Loading Coal Into Cars**; 1,534,378. Andrew Germek, Edwardsville, Pa. April 21, 1925. Filed June 5, 1924; serial No. 718,134.

**Incandescent Safety Lamp for Mines**; 1,534,370. Louis E. F. Ferrette, Paris, France. April 21, 1925. Original application filed Feb. 17, 1922; serial No. 537,295. Divided and this application filed Nov. 21, 1923; serial No. 676,155.

## Coming Meetings

**Rocky Mountain Coal Mining Institute.** Summer meeting, Aug. 26-29 at Price, Utah. Secretary, Benedict Shubart, Denver, Colo.

**American Institute of Mining and Metallurgical Engineers.** 132d meeting, at Salt Lake City, Utah, Aug. 31 to Sept. 3. Secretary, F. F. Sharpless, 29 West 39th St., New York City.

**Oklahoma Coal Operators' Association.** Annual meeting, Sept. 10 at McAlester, Okla. Secretary, A. C. Casey, McAlester, Okla.

**New York State Coal Merchants' Association.** Annual convention, Sept. 10-15, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries,** Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**Fourth National Exposition of Power and Mechanical Engineering, Nov. 30 to Dec. 5, at Grand Central Palace, New York City.**

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

# New Equipment

### Thermal Relay Is Added to Compensator Equipment

The General Electric, hand-starting compensators bearing the type designation CR-1034 have been redesigned. These compensators are for use on alternating-current circuits for starting squirrel-cage induction motors. Temperature overload relays have been incorporated in the compensator, replacing dashpot overload relays. In one of the sizes multiple rated auto-transformer coils are used instead of the single rated variety. The redesigned compensators also include an improved push button mcehanism, containing an attachment for resetting the temperature overload relays.

Closer overload protection is obtainable with the new type relay. The multiple rated auto-transformer coils, where used, permit the use of one compensator for several horsepower ratings for a given voltage. The incorporation of the relay resetting function in the push button simplifies the operation of the device, making it unnecessary to open the compensator for this purpose.

**Redesigned and Improved Starter**

With the new thermal relay incorporated in this compensator better overload protection is possible.

### Heater Keeps Sandpipe Dry

An electric sandpipe heater for use on electric mine locomotives to keep the lower end of the pipe dry and prevent clogging, lately has been placed on the market by the Universal Electric Sandpipe Heater Co., Philadelphia, Pa.

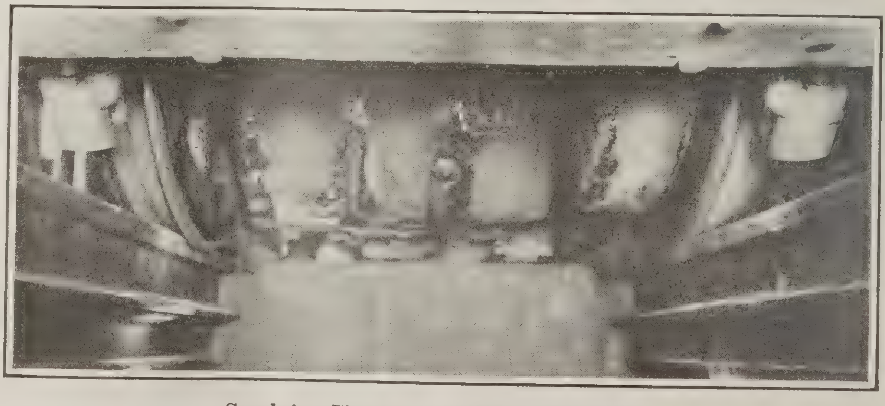
The device can be attached to the end of the sandpipe. A separate connection is provided for the conduit which carries the electric conductors leading to the heating element. With wet sand the end and interior of a sandpipe often get covered in such a manner that the outlet becomes closed. With this newly developed device the sand will always flow freely.

How the complete unit is installed on a mine locomotive is shown in the accompanying illustration. Inside the shell of the heater casting and around the lower end of the sandpipe is fitted the heating element. Nichrome wire inclosed in the housing but carefully insulated from a metallic tube forms the heating unit. For use on mine locomotives the voltage of the device is such that the units may be connected in series and take power directly from the trolley circuit.

## New Companies

**Banner Coal Co., Ltd.,** has been incorporated to develop and operate coal and other mines, with a capital of $60,000 and head office at Calgary, Alta., by Isaac Saunders, James P. Pearson, Wm. McKinnon and others.

**The Pittsburgh & Erie Coal Co.,** a Delaware corporation, has qualified to do business in Indiana, with a capital stock of $25,000 represented in the state. The agent for service of process in Indiana is H. Humphreys, Peoples Trust Co., Linton, Ind.



**Sandpipe Heaters on Mine Locomotive**

With devices such as these applied to the sandpipes of the locomotive, the sand always flows freely and reduces many accident hazards occasioned by clogged pipes.

COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
E. J. MEHREN, *Vice-President*

Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

R. DAWSON HALL
*Engineering Editor*

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## Would Avoid Suspension

TO THE MINE WORKERS' statement that the anthracite operators have planned a suspension that will enable them to sell a huge stock of coal that they are alleged to have accumulated, the operators replied through S. D. Warriner at the Atlantic City Scale Committee meeting saying that they were greatly concerned to avoid a suspension, that they sought for arbitration and were willing to operate their mines at the present scale after the lapse of the agreement until the arbitrators had given their decision on what the new wage agreement should be.

There is no question that the operators want peace, and that they are confident that they have the right on their side is shown by the fact that they are willing to accept arbitration. On the other hand the mine workers want a suspension. They want the public to demand a speedy opportunistic settlement that will be dictated by panic fear and so they refuse arbitration for reasons that have a hollow ring to them. A political settlement is what they desire. They know that the public will compel the operators to pay anything and everything that will result in the provision of coal for its household furnaces, and they overlook the fact that the people will, as ever, dictate a settlement and then by the simple expedient of buying a cheaper fuel, prevent the benefits of its terms from being experienced.

But they don't like arbitration. That is judicial, that concerns itself with the logic of circumstances and with that yardstick of fairness that the miners so volubly praise but fear to have applied. Just wait, they figure, till the public is panic sticken and we will make Warriner and his boys hand over their very hides to the union.

As a matter of fact what the operators are seeking is what the mine workers really need, for a rise in the cost of coal will drive anthracite out of the market, thus depriving the men of their jobs.

To illustrate this contention with an example from the bituminous field: The Jacksonville agreement was signed by men who never realized the force of the tide that was destined to sweep the union areas of the bituminous coal industry. It was a quiet pacific ocean on which the coal bark lay. The mine workers and even the operators felt they could trust themselves on those undisturbed waters. They little realized how the clouds gathering in non-union fields would sweep over that glassy sea and leave the mines useless wrecks. As Mr. Warriner in a manner pointed out: With a fair sky you may be disposed to laugh at the storm but if the storms are gathering the laugh is not wise.

The mine workers and the press of the anthracite region do not realize how already the anthracite mines are having the fight of their lives and that the hope of the industry will be swept away if the price of anthracite is raised. Nothing will help the bituminous fields and the oil men more than to have the miners turn on the operators and break down their defense against their common competitor.

Are the union miners seriously going to play again into the hands of the non-union operators? Are they ready once again to turn on the employers who are fighting their battle? The scale committee had a chance to discuss this matter with the men at home over Sunday. There was no meeting of the sub-scale committee from Friday till Tuesday. Let us hope that they made clear to the men back home how serious was the situation and how their hopes of a wage increase are vain or, if not vain, illusory and how the best plan is to sign up with the operators or leave the matter to arbitration.

However, perhaps the mine workers want another Jacksonville agreement to starve for and die for. Perhaps they delight to be martyrs to another folly. Perhaps they would prefer to see anthracite displaced by oil, gas, coke, power and bituminous coal. Perhaps they would like to see Government regulation. Here is their chance. Let them fight for the scale they have presented. They can have the martyrdom they prefer.

## Together or Alone?

NO ONE TODAY lives to himself alone, and associations of men in any one line of industry bring a sense of community interest that is necessary for the best results. Time was when the discussion of coal problems was bitterly sectional. Today coal men are realizing that the non-union and union operators have common difficulties and problems that will be best solved by composite judgment and will not find a solution in recrimination—we had almost written vituperation, for that was what was sometimes felt and expressed.

The National Coal Association has been headed by non-union and again by union men, now by easterners and again by mid-westerners and always with accord. It has been remarkable how the leadership has fallen into the control of varied interests year by year, by mutual consent and preference and how loyally has the rank and file followed its leader without any manner of sectional jealousy.

Who shall say that this work has not had its valuable result? There has been no attempt to find where the majority lay. Just now the non-union members of the East find themselves in the ascendant, but with a courtesy manifested not merely generally but universally, a man from the West, a union operator, has been selected as generalissimo for the coming year.

Banking is a competitive industry. The leaders in finance, nevertheless, meet in happy harmony, play golf together, visit each other's homes and hold common conferences. They have their rivalries but these do not menace the amenities of their mutual life.

Robert K. Cassatt, at the meeting of the National Coal Association, expressed the conviction of the banking interests in these days. He speaks in the first person as of an individual conviction but it is the consensus of banking opinion to which he gives utterance:

"In these days every industry must have a clearing house in the sense of a central organization. Investment bankers have such an association, as have all other important lines of activity with which I am familiar. And I have observed that the virility of an association and the degree in which it is supported by its members are excellent indications of the character and financial judgment of the men engaged in that industry."

Thus sectionalism, the worst evil of all the evils to which mankind is subjected, is destroyed. The best national interest is served by a patient following of the best minds of the industry as represented by its directorate. Year by year the leadership of the National Coal Association officials and the discussions of principles, such as marked the recent meeting at Chicago, will clarify the minds of the industry as to the needs of one and all and create a national harmony which the coal trade for many years lacked.

"Let me leave you," said Mr. Cassatt, "with . . . the suggestion that the proper vehicle through which to express many sound thoughts in the interest of your industry is the nation-wide organization of bituminous coal operators, the National Coal Association."

## Do Less and Have More?

IN GREAT BRITAIN miners' wages are too high to permit the coal industry of that country to ship coal to the Continent, so the mines are running irregularly and many are idle. In consequence the six-hour day is being advocated, in order that all may work. That will add to the cost and shut down more mines and make the mines that do work run more intermittently than ever. The miners seem to believe that, if they cannot succeed with one handicap, they might possibly do so if they loaded themselves with another.

The condition is quite like that in America. It is indeed "hands across the sea." Both the English and American miner believe that if your low output is preventing you from working, arrange to make it a little lower and your chances for steady work may be better; if wages are too high to permit the mines and factories to run, make them still higher and work less hours. The British miners have carried their follies a little further, perhaps, than ours. If that surmise be true, they are probably a little nearer a discovery that their hopes are fallacious. An *ignis fatuus* can be pursued just so far, and the further it is pursued the nearer the pursuer is to the ultimate enmiring. Perhaps we and our British cousins are near the point where we can begin to see matters as they are and begin all over again on a surer basis, ignoring the false lights that our imagination regarded as something that would guide to safety and happiness.

## Too Busy to Plan

OFFICIALS at coal mines are usually too busy to plan largely or well. Their duties hold them at home from year's end to year's end, and so long as a man sees nothing and hears nothing but what is to be seen and heard in his own environment he is not likely to grow fast. When an engineer or a salesman drifts in to see him, he tells the visitor he is too busy to talk, or he listens with a mind that drifts uneasily to the pile of letters and orders on his desk, to his telephone calls and to his unfinished and pressing labors which, for the nonce, must go unperformed. Thus harassed he is not the good listener and acute questioner that the opportunity for contact with the outside world should develop.

A better way of doing his work should not be lost to him because of his anxiety and impatience to get it done quickly in another way and one less economical and effective. One must not be too busy to think and to plan, or the company will be the loser. It may have a man or two less on the payroll, but in most plants many men could be saved if better systems were adopted.

## The Truth Might Help

THE New York *Evening Post* on July 11 said in a Washington dispatch: "As the result, only departmental experts who have a direct interest in coal have continued to study the problem, and their researches leave only one conclusion regarding the immediate situation.

"Nothing has been done either outside the industry or by the operators and miners themselves to break the 'vicious circle,' in the course of which each period of peace is followed by a period of mines closed by strikes, resulting in an artificial shortage and the public 'holding the bag.'"

S. D. Warriner on July 9, spokesman for the anthracite operators, at a conference called to make a new wage scale, said as follows:

"We wish to urge that provision be made at the outset against the possibility of a suspension on Sept. 1. Such joint action on our part would deserve public confidence. It can be accomplished by an agreement to the effect that if our respective committees are unable to agree upon any issues, such issues shall be referred to arbitration, upon the understanding that production shall be continued at the present wage scale until the arbitrators render an award.

"Let me say to you here and now that the operators are prepared to co-operate in any fair and practicable plan, not only to prevent a suspension next September, but to provide means to prevent suspensions in the future in order that public anxiety in this respect may be put at rest. This can be accomplished by a long-term agreement with provision for the adjustment of wage rates during that term so that wages may be conformed to changing economic conditions."

Surely a candid world will say that the anthracite operators are trying to meet the difficulty, as far as it is possible for them to meet it alone. "Nothing has been done" in their case does not mean that nothing has been attempted. We can only hope that the journalist quoted did not reflect with precision what he was told.

The same paper says later:

"Government officials are not inclined to participate again in arbitration, which would result in an increase in wages to anthracite mines, an adjustment that would come only after a period of strife during which coal prices would go soaring to the profit of the operators and at the expense of the consuming public."

We would say that the sentence suggests that the Government officials do not believe in an increase in wages but when they are placed on an arbitration board they would be compelled to grant such an advance by reason of a sinister pressure. If this statement is true it is a severe indictment of the arbitrament of Government officials.

# Miners Want Higher Pay Because of Labor Hazards

## They Forsake "Living Wage" Plea as Anthracite Parley Opens at Atlantic City—Operators Are Solidly Against Strike and Suggest Arbitration but Men Will Not Agree

**By R. Dawson Hall**
Engineering Editor, *Coal Age*,
New York City

**Two Principals of the Anthracite Negotiation**

S. D. Warriner (left), chairman of the Anthracite Operators' Conference, and John L. Lewis, international president of the United Mine Workers.

JUDGING by John L. Lewis' address at the open meeting of the scale committees of the anthracite operators and miners beginning negotiations for a new contract July 9 at the Hotel Traymore, Atlantic City, N. J., the emphasis of the United Mine Workers has been lifted from the demand for a "living wage" to a plea that the hazards of the coal industry have never been given due consideration in the fixing of a scale. The argument now is that the men at the mines have been paid for their services but not for their sacrifices. Mr. Lewis adroitly forgot the compensation which is paid to the injured in case of injury without death or to the victim's dependents in case death results. Only Andrew Mattey, president of District 7, and father of 18 children "now happily at work," pleaded that wages were inadequate for raising a family. This was the only reference to the point in the two days' sessions which opened the negotiations.

During the two days of general statements by both sides the operators persistently declared there should be no strike Sept. 1 and that such differences as may exist between operators and miners by that date should be arbitrated while coal production continues. They held for wage reduction or a material increase in the productivity of miners because prices to anthracite consumers cannot be raised without jeopardizing the whole industry for men and mine owners alike. The miners, of course, contended for wage increases and opposed arbitration. However, only a bare beginning has been made in the negotiations. An open session was held July 9 and a preliminary meeting of the subscale committee took place July 10 when adjournment was taken to July 14.

At the opening general session S. D. Warriner, president of the Lehigh Coal & Navigation Co. and chairman of the Anthracite operators' conference read the operators' first statement, printed in full on another page. He wisely sized up the situation, pointing out that the miners and operators are facing a crisis. The miners might haggle about what they termed justice and get a scale that represented what they demanded as their rights, only to impose them on the operators without managing to make the public accept their high-priced coal. In that case they would have a high scale but no jobs. Mr. Warriner made clear that the demands could not be granted, for they would destroy an industry already in jeopardy.

At the meeting sixty to seventy were present. The mine workers had thirty to forty of these. The meeting was opened by James Gorman. At the proposal of President Lewis of the miners, Judge Frank W. Wheaton, chairman of the board of directors, of the Lehigh Valley Coal Co., was elected presiding officer, Mr. Gorman then being made secretary.

Mr. Lewis was requested to present the claims of the mine workers, which he proceeded to do in a most eloquent manner. He said that these claims were always promulgated as "demands." Really they were not in any literal sense either demands or requests for consideration. In truth they were something less than demands but something more than requests. Contrary to the general belief the union officials were not doing the thinking for the men in the mines. They merely voiced the demands of the mine workers which were based on the bitter experiences of actual work. There was no need for either a learned mind nor a facile hand to lay down what they wanted. The union leader was only the attorney employed by them to present the case which they themselves had laid before him. It was impossible for them to get in touch with the leading minds among the anthracite operators, and Mr. Lewis said that it was necessary, therefore, to make that presentation of their case by and through their union.

He then read the demands which have been published at length in *Coal Age*. With tragic eloquence Mr. Lewis declared that it was a greatly moving thought that, since he had appeared before the operators two years ago to appeal for an increased wage, 1,000 of his people had been killed and 40,000 maimed and injured "in your mines." "Every man present," said he, "recognizes the exactions of the industry." The operators may advocate arbitration, but he did not recognize the right of any commission to decide coldly for his people what they should get for their lives or for a broken back. The professions do not permit a commission to decide what shall be paid for their services and why should a commission be allowed to fix a wage for men who were preparing to risk their lives in a most hazardous occupation?

He said it is true miners take their cases to courts but not to determine principles like the reward for undertaking hazards. Courts, in the main, merely interpret contracts. Mine workers believe in such interpretation, but not in determining what pay should be awarded to those who place their lives in jeopardy.

Mr. Lewis declared he could not see why the operators should oppose an equalization of rates between the various mines when the duties performed were precisely the same in each. He was even more emphatic in calling for what he termed the recognition of the United Mine Workers, but which now means solely the imposition of the check-off. Already the anthracite companies made check-offs for twenty-nine different purposes; why not add a thirtieth? Why should not the union participate with the operators in this instrument of collection? Were they alone to be denied?

The check-off would not be costly to the operator for he had the machinery in operation already, nor would it add to the cost of the coal and be an added burden on the consumer. Why deny to the employee that to which the employer believed that he, himself, was entitled? It could not be regarded as a violation of the law, for the Union did not demand that the check-off should be imposed on any employee without his signed authorization.

The check-off, he said, was not designed to strengthen the union. It did not need such support; it was too well established for that; but it did desire to save the costs of collection of union dues, the scores of thousands of letters, the communications between the secretaries and an immense number of men scattered in many directions. Men failed to pay dues, not from lack of desire but for inattention to detail. In every club could be seen posted the names of men who were delinquent in the payment of their dues, not from intention or from the lack of the wherewithal to pay them, but simply because they had allowed this small matter to slip their attention.

Rinaldo Cappelini, president of District No. 1, and Christ Golden, president of District No. 9, then followed. To Mr. Golden it appeared that the check-off would head off wildcat strikes and be a benefit to the operator. A grievance which particularly troubled the men in his district was that nothing had been done to promote uniformity of scale. The operators had promised to give it consideration. But two years had nearly passed, and nothing had been done. Were they to be patient and wait forever? The members of the carpenters' union and the members of the United Mine Workers labored together at carpentry work, the former receiving $1.12½ per hour and the latter from 75c. to 80c. He could not conceive that, measured by the yard stick of justice and fairness this difference in scale was justifiable.

Thomas Kennedy, secretary-treasurer of the United Mine Workers, said the check-off had received legislative approval. The operators by law were checking off taxation on their payrolls. Was it right that the United Mine Workers should be the only institution prevented from using the check-off? Mr. Kennedy supported Mr. Golden in his statement that it was wrong that two men working side by side at the same job should receive wages varying by 30c. per hour. To him also it seemed unjust that the operators who were receiving pay by the ton of 2,240 lb. should not also pay their men by that tonnage. The demands of the union as ultimately formulated represented a composite aggregation of over 1,000 resolutions presented at the Tri-district Convention. They were not the demands of the officials, they were the individual behests of the men on the job.

**Operators' Representatives at Anthracite Wage Parley**

Members of the sub-scale committee which is in conference with United Mine Workers' officials at Atlantic City. They are, reading from left to right, front row: J. B. Warriner, E. H. Suender, Thomas Thomas, Andrew Fine; standing: W. W. Inglis and Geo. B. Hadesty.

Andrew Mattey, president of District No. 7, called on the union officials and the operators to effect an agreement. Amid much laughter at his witty thrusts he called on those present to complete their own job and not to let Pinchot and Coolidge "scab on them." He tauntingly complained that certain operators, whom he would not shame by naming them, were actually buying coal for their own operations and neglecting their own.

At this point Mr. Warriner read the operators' statement declaring for lower wages or higher efficiency by miners, and against a suspension.

Mr. Lewis desired to debate Mr. Warriner's statements, but the chair had already ruled that there should be no debate after each party had in turn presented its case, and at Mr. Warriner's suggestion the presentation of claims was brought to a close.

The meeting voted that the operators appoint six members of a sub-scale committee and the miners an equal delegation to consider the question further and report to the scale committee. With this resolution the scale committee adjourned. The operators' representatives had already been elected at the meeting of the operators the prevous day. They are W. W. Inglis, president of the Glen Alden Coal Co., of Scranton, chairman; Andrew M. Fine, vice-president, Hudson

Coal Co.; Thomas Thomas, general manager, Lehigh Valley Coal Co.; Jesse B. Warriner, general manager, Lehigh Coal & Navigation Co.; E. D. Suender, general superintendent, Madeira-Hill Co.; and George Hadesty, general manager, Philadelphia & Reading Coal & Iron Co. Mr. Inglis was nominated by Frank H. Hemelright, chairman of the Conference Labor Committee, who had declined to serve, despite the pleas of his associates.

The union men hardly need naming as they are so clearly indicated by their standing in the organization; Rinaldo Cappelini, president, District No. 1; Andrew Mattey, president, District No. 7; Christ Golden, president, District No. 9; John L. Lewis, Philip Murray and Thomas J. Kennedy, president, vice-president, and secretary respectively of the international union.

James F. Dewey, commissioner of conciliation, U. S. Bureau of Labor, was at the meeting representing the Federal government, and David Williams, director of industrial relations of the Commonwealth of Pennsylvania, represented Governor Pinchot of that state. J. J. Walsh, another of Governor Pinchot's representatives, did not arrive in time for the meeting.

The operators' sub-scale representatives met on the morning of July 10 and in the afternoon the whole sub-scale committee had a session. Little definite progress was made at this first executive meeting beyond a preliminary discussion of market competition from anthracite substitutes. The committee chose Alvan Markle of the Jeddo-Highland Coal Co. as its joint chairman. Before adjourning for the week, it scheduled its second section for July 14 at 2 p.m. in the Traymore.

The operators went into the July 10 executive session holding strongly to their keynote, which is: "Let there be no strike." This position was restated for the operators by Mr. Warriner in the following public statement:

"We are reported to be indifferent to, if not actually in favor of, a suspension in order that we may dispose of large stocks of coal. On the contrary, our representatives have been instructed to urge upon the miners' committee the proposal that whatever may be the course of negotiations for a new contract both sides shall bind themselves that there shall be no suspension of production.

"The operators wish to have it clearly understood that they are opposed to a suspension under any circumstances. Because the parties in any dispute cannot agree by a given date is no reason why they should go to war. In this belief we are pressing the proposal that if our respective committees are unable to agree upon any issues, such issues shall be referred to impartial arbitration, upon the understanding that production shall be continued at the present wage scale until the arbitrators render an award."

The miners were expected to continue their implacable opposition to arbitration on two grounds. They fear the entrance of a third agency in the dispute on the ground that an "outsider" would practically be able to dictate the miners' mode of living. They are also said to fear that acceptance of the proposal might nullify progress in the subcommittee sessions, with the operators rejecting every demand until Sept. 1, at which time every issue would go automatically to arbitration.

## John Lewis Counters

President Lewis of the miners made a reply to the operators' statement thus:

"Statements made by anthracite operators that anthracite mine workers earn high incomes are not borne out by the facts. The United States Coal Commission spent an entire year and $600,000 of the people's money in making an investigation of the coal industry. In its report to Congress the commission said that out of a total of 45,678 outside day men employed at the anthracite mines 43,822 earned less than $2,000 a year, and only 1,856 earned more than $2,000.

**Principal Representatives of the Anthracite Miners at the Atlantic City Conference**

These officers of the United Mine Workers, reading from left to right, are: Andrew Mattey, president, District 7; James L. McAndrew, secretary, District 9; Thomas Kennedy, international secretary-treasurer; Christ Golden, president, District 9; John L. Lewis, international president; Philip Murray, international vice-president; Rinaldo Cappelini, president, District 1, and Enoch Williams, secretary, District 1.

"Approximately 22,000 earned less than $1,000. The men that earned between $1,000 and $2,000 had to work from 251 to 396 days in the year. The 1,856 men who earned more than $2,000 had to work from 292 to 470 days. And there are only 308 work days in the year.

"These are not the figures of the United Mine Workers of America. They are the official figures of the United States Government, and we must accept them as being true. To earn $1,000 a year, or $83 a month, a man had to work 292 days. To earn $2,000 a year, or $166 a month, a man had to work every day, including every Sunday and every holiday and 105 days of overtime. Where is the American citizen who, after reading these figures, will say that these workingmen should not have more equitable wages and a better opportunity to earn a living for themselves and their families?"

## But Is Mr. Lewis Correct?

Mr. Lewis' figures are based upon the report on "Earnings of Anthracite Miners," prepared by Anne Bezanson, but not issued as a formal Commission report. The 22,000 men mentioned by Mr. Lewis as earning less than $1,000 per annum include a very large number working less than half a year; in fact, the maximum average number of days worked in this classification was 228. Obviously, therefore, the statistics cover names that appeared on the payrolls of several collieries and, to that extent, represent duplications. Nearly 23 per cent of the 22,000 earning less than $1,000 per annum averaged less than 10 days; 3,286 of the 22,000 averaged 35 days and earned between $100 and $200 for that work.

The report on actual wage rates paid in the hard coal field, prepared by W. E. Fisher, showed that the company men were paid from 21 to 71c. per hour. Approximately 88 per cent of the number received between 51 and 71c. Of the 10 per cent receiving less than 51c., a little over three-fourths were boys. In both the Fisher and Bezanson reports, the wage rates and earnings given are those in effect prior to the 10 per cent increase awarded by Governor Pinchot in September, 1923.

### Lewis' Paints Colorful Picture

The apparently high accident rate dramatized by Mr. Lewis the first day of the joint conference is due, not to the extra-hazardous nature of anthracite mining, declare the operators, but to the thoroughness and the detail with which accident statistics relating to hard coal mining are kept. The Lewis picture of the anthracite region "as a shambles where yearly 20,000 men—400 a week—are carried out of the mines on stretchers," was characterized as "too highly colored to be taken seriously. . . . The stress now placed on the hazards of the employment as a reason for the wage increase suggests that this argument is resorted to because it is realized that comparison will show that anthracite workers' earnings are all really above those of other industries and that some other argument than the inadequacy of earnings must be found."

"If, as has been stated by the miners' representatives, 20,500 men are killed and 'maimed' yearly, the entire working force would have to be replaced every seven years—an obvious absurdity," adds the statement.

"Perhaps one-third of the anthracite mine accidents are compensatable—that is to say, serious enough to require that compensation be paid. The remainder include a scratch on the finger or a speck of coal dust in a man's eye. Every accident, however trivial, is investigated by company doctors and reported. That is the main reason for the large total.

"According to government experts, there are twenty more dangerous employments than anthracite mining, which is surrounded by every possible safeguard.

"There are 42,500,000 man days of work a year in the anthracite industry. Figuring that there are 6,500 serious accidents per year, it is apparent that a man takes the risk of being injured once in 6,545 days, or about twenty-four working years."

## Water Gas Can Now Be Made from Ordinary Midwest Coals

In Technical Paper 335, just issued by the Bureau of Mines, summarizing the results of work performed under a co-operative agreement between the Bureau, the Illinois State Geological Survey, and the Engineering Experiment Station of the University of Illinois, William A. Dunkley, an illuminating gas engineer, Department of the Interior, states that by the use of properly designed equipment the low-sulphur coals of the Middle West, not ordinarily regarded as first-grade fuels for gas or coke manufacture, can be made to give almost as good results in the generation of water gas as can be obtained from the more expensive high-volatile Eastern coals.

The extensive use of Illinois, Indiana, and other Midwestern coal in gas manufacture in place of coke from Eastern coals is important in that it would release an appreciable amount of coke for use in other industries. Furthermore, transportation of coal from Eastern fields would be avoided.

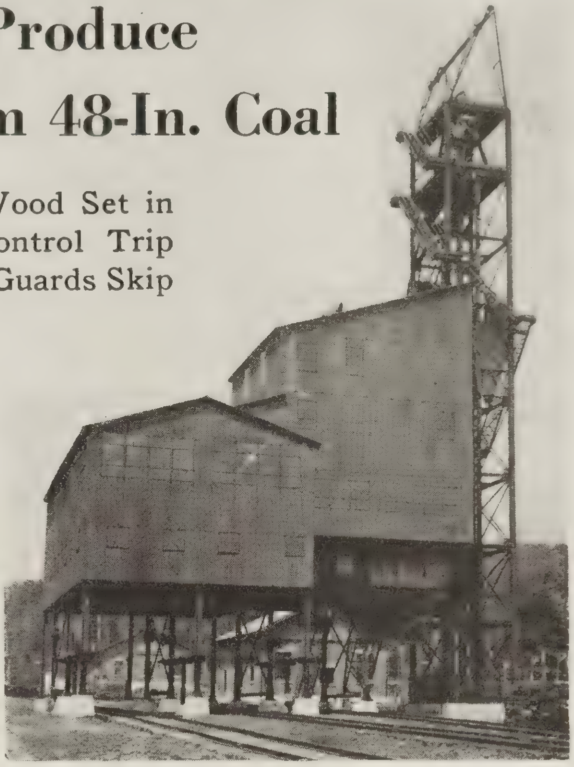
Under certain conditions of the fuel market the prices of coke and anthracite—the fuels commonly used in water gas manufacture—differ radically from those of bituminous coal. Such differences were marked during the World War especially throughout the Middle West. This stimulated the study of methods whereby bituminous coal might be used for making water gas. During the early attempts in this direction trouble was experienced. Although mechanical difficulties caused some annoyance, decreased production capacity and low fuel efficiency were even more discouraging.

After extensive experiments, however, operating methods gradually were improved and other difficulties were almost entirely overcome. Fuel consumption per unit of gas produced also was cut down, especially in the smaller sets, to such a point as to bring bituminous coal almost onto a par with low-volatile fuels, even at the same price per ton. The larger sized water-gas sets gave more trouble and the difficulties here encountered, as yet have not been entirely surmounted.

Market conditions are not now as favorable to the use of bituminous coal as they were formerly; nevertheless, it is still employed in several plants. Under certain conditions it effects marked savings in operating costs. The ability to utilize this material, unquestionably increases the flexibility of a water-gas plant under varying conditions of fuel supply.

# Kramer Mine Is Built to Produce 4,000 Tons a Day from 48-In. Coal

## Six-ton Skips Run in Guides of Wood Set in Steel Channels—Push Buttons Control Trip Feeder and Dump—Signal System Guards Skip



**By Alphonse F. Brosky**
Assitant Editor, *Coal Age*
Pittsburgh, Pa.

A NUMBER of uncommon features of design and construction of the shaft and tipple equipment are employed at the Kramer or No. 60 mine of the Northwestern Mining & Exchange Co., ten miles south of Du Bois, Jefferson County, Pa., on the Buffalo, Rochester & Pittsburgh R.R. Here, the coal being mined lies at a depth of about 300 ft., which, for a predetermined daily output of 4,000 tons in 8 hr., made advisable the installation of twin skips, fed by overturning two mine cars at a time in a rotary dump.

A dual signal system of electric lamps and gongs, within sight and hearing of the hoist operative and the skip attendant at the bottom landing, unifies two-man control of the loading and hoisting of the skips. Worthy of particular mention also is the fact that the auxiliary shaft is equipped with hoist, rope and sheaves which are duplicates of those provided for the main shaft.

The Kramer mine property consists of 2,700 acres of 42- to 48-in. Lower Freeport or "D" measure coal. The output of this mine is used as railroad fuel. When this operation reaches its maximum production, in addition to being the largest in its field, it will be registered near the top of the list of leading producers of Pennsylvania bituminous coal. It may become the largest low-seam, shaft, coal mine in the country. Because of that and because of the engineering involved in its construction and operation its features are of interest to the whole industry.

### THREE SHAFTS PROVIDED

This mine is gassy and therefore requires—and receives—the greatest possible degree of protection by method and equipment. At the same time its hoisting capacity is kept high. It is not so surprising, considering these requirements, that the Kramer mine is provided with three shafts: One for hoisting coal, the second for handling men, mine refuse and supplies and the third for ventilation purposes.

The coal hoisting shaft is 280 ft. deep to the bottom of the coal, below which is a 54-ft. pit for the car-dumping and skip-loading machinery. In the construction of the below-coal part of this shaft, 464 cu.yd. of concrete was poured. This indicates the size and massiveness of the pit.

The shaft measures 8 x 32 ft. inside and is equipped with twin 6-ton skips of the Lepley bottom-discharge type. The auxiliary shaft is 300 ft. deep, with inside dimensions of 12 x 20 ft., and is provided with two solid-car, self-dumping cages. A 6-in. partition divides the 12 x 18-ft. air and escape shaft into a 12 x 12-ft. airway and a 5½ x 12-ft. stairway. The concrete linings of all three shafts, which to solid rock are 2 ft. thick and from that point to the bottom are 1 ft. thick, are reinforced on 1-ft. centers vertically and on 2-ft. centers horizontally by ¾-in. twisted iron rods.

The construction of the skip shaft guides aids in maintaining their accuracy of alignment. The buntons, which are of 8 x 10-in. oak, are anchored at vertical intervals of 5 ft. by cast iron brackets set in the concrete lining. To these are bolted channels in 20-ft. sections, which receive and hold rigidly in place 7¾ x 10-in. guides of yellow pine.

Coal is hauled to the skip-shaft bottom in trips of 35 to 40 two-ton mine cars which are delivered by a trip feeder to a two-car, tandem, rotary dump. The mine cars are equipped with swivel couplings which allow them to be dumped without uncoupling. The approach to as well as the run-off from the rotary dump is on a 1½-per cent grade in favor of the mine cars to avoid delays in dumping so that, even though the trip feeder should get out of order, mine cars can be handled to the dump, of course at slower speed.

The trip-feeder and the rotary dump are interconnected electrically so that a single starting push button operated by the dump attendant controls the normal movements of both. Pushing of the button puts the feeder in motion advancing the trip to the dump, a distance equivalent to the length of two mine cars, after which the feeder and the trip stop. Then the rotary dump automatically turns over and rights itself, completing a dumping cycle. Power is applied through only three-quarters of the dumping angle and after a brief pause, is reversed, causing the dump to return to its starting position at which it is positively locked.

The arrangement is such that the dump will not operate unless the mine cars on it are exactly spotted.

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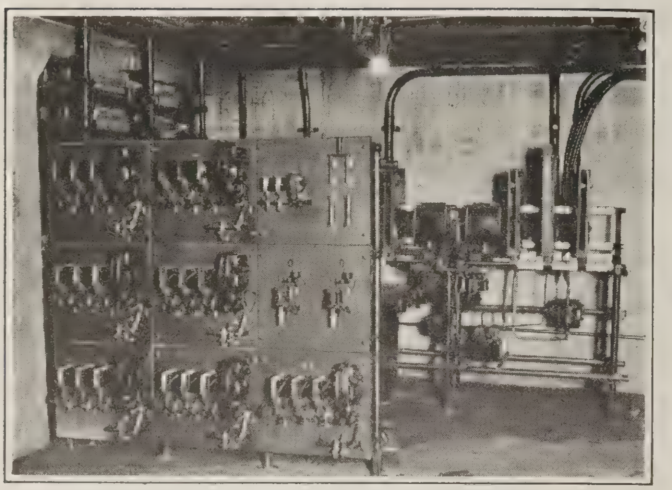
The headpiece shows the tipple and hoist houses at Kramer mine. When the headframe extends high above the roof of the tipple at a mine plant, as in this picture, one may be sure that coal is hoisted by skips. Large window bays admit ample light for efficient work on the picking tables.



**Contactor Room in Basement of Hoist House**

Good practice nowadays is to keep all or as much as possible of the noise out of the hoist room by putting the switching equipment and contactors in the basement. This is not a new idea by any means; it is being followed at many a mine.

Another emergency provision is a second push button which enables the operative to stop either the trip-feeder or the dump at any stage in its cycle. The speed of dumping and feeding are fixed to handle a trip at the rate of 6⅔ cars a minute. A third push button is provided which causes the dump to reverse to its normal position, if desired, after it is stopped; but ordinarily the entire cycle is completed without attention from the operative except a push on the starting button to begin and to end the cycle.

### Reduces Degradation

The coal, upon leaving the mine cars in the rotary dump, is guided by chutes to a pair of electrically operated rotary weigh pans. This type of weigh pan slides the coal gently and with only a slight fall to the chutes which carry it to the storage bin. Thus degradation is reduced to a minimum. None of the coal can lodge in the pan—a fault of many weigh pan installations which forces the owner to pay over and over again for a given weight of coal.

From the weigh pans the coal is directed by chutes to a 10-ton storage bin. Air-operated, undercut gates open and close the passages between the storage bin and 6-ton measuring pockets flanking the respective skips. Between each measuring pocket and its mated skip, when the skip is at the bottom landing, is a loading chute. These chutes are hinged to the lower ends of the measuring pockets. They retain a skip-load of coal in each pocket when they are up and, when opened they permit the flow of coal to the skips without spillage. The undercut gates and the loading chutes are actuated by individual air engines.

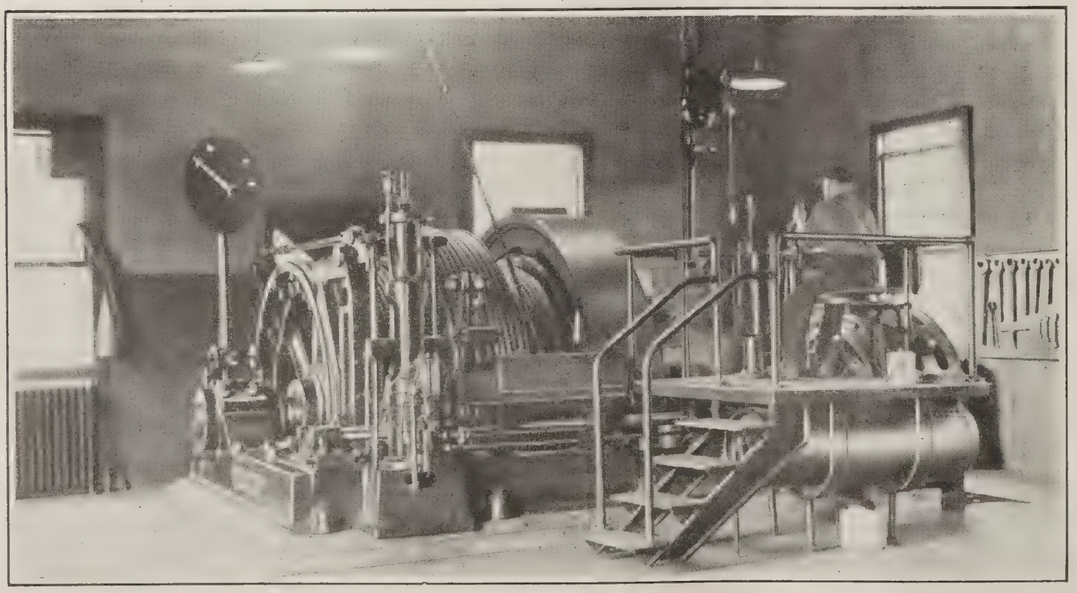
By an interlock mechanism which prevents mismoves and the signal system of gong and lamps, the skips are loaded, hoisted and dumped with precision. A manually operated lever controls the air valves which open and close the undercut gates. These gates are locked against movement when the skips are in their loading position at the bottom landing. If, after opening an undercut gate to fill one of the measuring pockets, the operative fails to close the gate, that skip with which the particular pocket is mated will close automatically and lock the gate against movement upon its approach to the bottom landing. The loading chutes are actuated by air valves which, likewise, are locked when the skips are away from their loading position.

### Arrangement of Signal Boards

On the hoist platform and in view of the operative is a signal board on which is mounted a gong between two lamps in a vertical row. A similarly arranged board is provided at the bottom for the skip-loading attendant. The two upper lamps, one on each board, are in a single circuit which is opened and closed by a switch simultaneously with the closing and opening of the air line to the undercut gates and loading chutes. When the air line closes, these lamps burn and when it opens they go out.

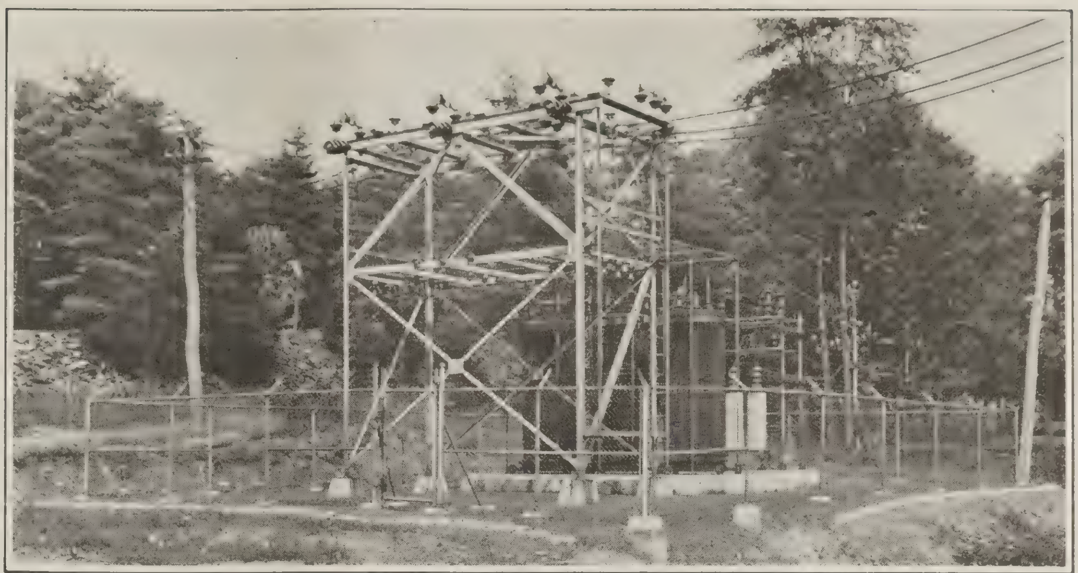
The gong and lower lamp on each of the two boards are connected in a single circuit by a skip-operated switch and a push button at the bottom. By means of this arrangement the hoist operative knows when to hoist and the skip attendant at the bottom can tell whether the loading chutes are open or closed.

When the chutes are open the switch is open and a signal to hoist cannot be given; but when the chutes are closed the switch is closed and the skip attendant notifies the hoist operative by pressing the push button. The closing of the circuit in this manner rings the gong and lights the lower lamp simultaneously at each of the two stations. The signal board at the bottom



**Hoist at Auxiliary Shaft**

This 400-hp. hoist is a duplicate of the one which raises and lowers the skips in the main shaft. It is equipped with all those safety devices which today make hoisting a comparatively uneventful job around the mine.



**Transformer Station**

These three 667-kva. transformers at Kramer mine step down current coming in at 33,000 volts to 2,300 volts. Power is transmitted to this mine from Helen Mills, Elk County, 34 miles away where the company operates a 4,500-kw. power plant.

of the shaft is also provided with two lamps which indicate whether the undercut gates are open or closed.

The two skips, which are hung in balance, discharge into a 25-ton storage bin on the tipple. The headframe over the coal-hoisting shaft is of all-steel construction, as is also that over the auxiliary shaft.

Except for the use of self-dumping cages in the auxiliary hoisting shaft as against skips in the main shaft, the auxiliary hoisting equipment is the same in both shafts. The duplicate hoists are driven by 400-hp. induction motors at a rope speed of 900 ft. per minute in a 43-sec. cycle. The drums are of the cylindro-conical type with 7- and 9-ft. diameters. Lang lay ropes of 1½-in. diameter are used for hoisting in each of the shafts.

The headframes are equipped with 10-ft., bicycle-type sheaves on self-oiling bearings of the Lepley type. These bearings will not freeze in the winter. They are lubricated by floating splash rings, a system of lubrication frequently applied to big electric motors. Take-up screws are provided for aligning the sheaves.

The advisability of equipping both shafts with duplicate hoists might be questioned. The Northwestern Mining & Exchange Co. has done this to enable it to handle a 6-ton locomotive on the cages of the secondary shaft, to provide a high safety factor in the equipment at this shaft where men must be hoisted and also to minimize the number of repair parts which must be kept on hand. Another reason is that all rock is hoisted from the secondary shaft to a 25-ton bin from which it is disposed by a 10-ton electric larry. The arrangement allows uninterrupted flow of coal to the tipple removing those complications which arise where coal and rock are handled alternately by the same equipment. Cars of rock in a trip are passed through the rotary dump without being overturned and later are hauled to the auxiliary shaft.

### WELL-LIGHTED TIPPLE

Galvanized sheeting of acid-resisting iron covers the sides and roof of the tipple which is lighted by steel-sash windows on the sides and by skylights on the roof above the picking room. One of the skylights can be raised to assist in ventilation for the comfort of pickers on hot days. Three sides of the picking room are lighted by a continuous panel of windows, making the place as light as a modern factory.

The tipple has a capacity of 600 tons an hour, loading on three tracks. Its equipment is designed to handle coal having the following percentages of sizes: Lump, 55 per cent; nut, 20 per cent, and slack, 25 per cent. Nut coal is loaded separately. However, the equipment can be regulated to load lump-and-slack, lump, picked run-of-mine, and lump-and-nut over either No. 1 or No. 2 track or both. On No. 3 track may be loaded nut-and-slack, nut, slack or emergency run-of-mine. The latter is chuted directly from the skip storage bin to this track without passing over the screens and picking tables.

Prepared run-of-mine is picked by sizes and later joined in passing to railroad cars. The smaller sizes are delivered to the loading chutes in advance of the lump so as to keep breakage at a minimum.

### UNCOMMON SHAKING SCREENS USED

Several features of the shaking screen are uncommon. The rig is made in two decks, the upper of which is provided with three screen areas and the lower with but one. In the first screen area of the upper deck are 2-in. square openings through which the undersizes are separated from the lump. The two lower screen areas on the upper deck separate the lump into two sizes, over and under 3-in.

This size separation of lump is effected to obtain a better separation of refuse on the lump picking table. This table is of the circular type, as is also the nut picking table. One size of lump is directed to the inside and the other to the outside annular zone of the lump picking table.

To eliminate vibration in the tipple structure the screen, which of necessity must be heavy to handle 4,000 tons in 8 hr., is built up in sections that are balanced against each other in driving. Each section is supported from the building structure by hanger rods at each end of which are removable cast iron bearing blocks. This method of support prolongs the life of equipment and effects a saving in power by avoiding excessive flange friction due to binding in roller-mounted screen rigs.

The trip-feeder, rotary dump, rotary weigh pans and the tipple were furnished by Heyl & Patterson, Inc., Pittsburgh, Pa., while the skips and skip-loading equipment were furnished by the Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

# Rock-Dust Tamped, Air-Cushioned Shots Increase Yield of Lump Coal in Experiments

## Tests by Maryland Experts Prove Also that They Reduce Consumption of Explosive and Suppress Flame Smoke and Fumes—Should Win Men's Favor

**By Dr. J. J. Rutledge**
Chief Engineer, Maryland Bureau of Mines,
Baltimore, Md.

Dr. J. J. Rutledge

IT APPEARS to be the general practice in mines to use more explosive than is necessary to bring down the coal. It is a common adage of the miner that "it is easier to pick the coal up than to pick it down." Again, powder and all other blasting supplies formerly cost much more than they do today. The present tendency, therefore, is for the miner to use them more lavishly. This results in a shattering of the coal and a reduction in the percentage of lump produced.

Binders in the coal also exert an influence. An explosive of a certain strength may be adequate to bring down coal but a much stronger one may be required successfully to disrupt a binder interstratified in the bed. At present an urgent demand for lump coal is in evidence; small coal is not wanted.

These facts render it apparent that some means must be found for reducing the size of the charge employed, decreasing the violence of the explosion or spreading the action of the explosive over a larger area of the coal. As a rule, only the second alternative is possible of adoption. The explosive force can be most readily limited by means of an air chamber within the shot hole. This also accomplishes a uniform distribution of the explosive force along a greater length of the hole than that occupied by the charge.

Use of air chambers is not entirely new. Many old miners, especially in brushing, formerly used mud balls in their tamping material in order to get a small air space. Application of the air chamber as here considered, however, had its inception in an article entitled "A New Way to Increase Lump Coal Production," by Dr. Alfred Stettbacher, of Zurich, Switzerland, published in the September, 1923, issue of the *Explosives Engineer*. This article described the use of rock-dust stemming in the coal mines of the Ruhr district of Germany since the war. The claim was made that the proportion of lump coal was increased as much as 50 per cent, accompanied by a decrease in the consumption of explosives amounting to from 20 to 40 per cent. In this country J. H. Horlick, Jr., of the Hercules Powder Co., Capt. W. J. German, of the Du Pont Co., and J. E. Tiffany and C. W. Nelson co-operating with the Carnegie Institute of Technology and the U. S. Bureau of Mines have performed and reported much valuable investigative work on cushioned blasting.

This subject was brought to my attention in October, 1924, by Clarence R. Claghorn, a consulting engineer of Baltimore. The law of Maryland requires the state Bureau of Mines to assist operators in improving their methods of mining and in increasing the recovery of coal. In compliance with the statutory provision, John B. Watkins, one of the district mine inspectors, was detailed to assist Mr. Claghorn in demonstrating the effectiveness of air-chamber blasting as well as that of rock-dust stemming. Some of the results of their work are here set forth.

Although the results of some of the tests conducted were not all that might have been desired, two outstanding benefits were noticeable. The first and most important was the fact that use of the air chamber decreases by from 20 to 50 per cent the amount of black powder necessary to bring down the coal; second, little powder smoke resulted from blasting when air chambers were employed.

Pasteboard tubes served as air chambers. These varied in length from 8 to 12 in. and from 1¼ in. to slightly over 1½ in. in diameter. They were waterproofed and fitted with caps at either end. When properly filled with limestone dust, 78 per cent of which would pass a 200-mesh screen, one 12-in. tube held 1 lb. Black FFFF blasting powder was the explosive used in most of the trials.

In accordance with Mr. Claghorn's suggestion that the advantages of rock-dust stemming be tested in conjunction with air-chamber blasting, a number of 12-in. tubes were filled with rock dust and used as part of the stemming in the drill hole. It was thought that detonation of the explosive would scatter this dust over the gob thus masking any coal dust present. It was believed that by this means the working faces practically would be rock dusted in somewhat the same manner that the gobs in the mines at Hanaford, Ark., are sprinkled with salt through the use of "dummies" filled with this material.

Experiments were conducted in a few of the mines of the Georges Creek and Upper Potomac regions of western Maryland during the fall of 1924. The coals here found are generally much softer than those of Illinois, Indiana, Ohio and other states and, consequently, the miners use their picks freely if the coal has not been machine undercut. Furthermore, such

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This article is from a paper entitled, "Air-Chamber Blasting in Coal Mines," read before a meeting of the Mine Inspectors' Institute of America at Peoria, Ill.

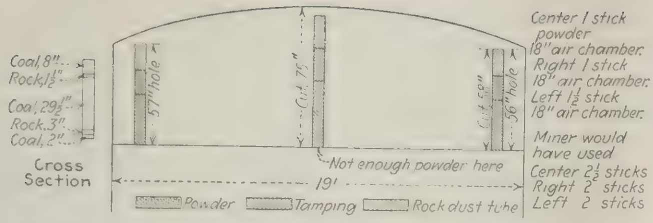


**Fig. 1—Loading in a 19-ft. Room**

Three sticks of powder were saved in this room over what the miner would have used by ordinary methods. Although too little explosive was used in the center hole, the coal was brought down in better shape than usual and far less smoke was made.

heavy shots, as are common in the states named, are here unknown. Solid shooting is prohibited by law. Some of the miners still use squibs, but safety fuse is the means generally employed in firing shots. Practically all the miners speak English and about 95 per cent are native born. As a class their natural thrift impels the practice of rigid economy in the use of explosives.

In these tests empty tubes constituting air chambers were placed next to the explosive charge, regardless of whether this was black or permissible powder. The remainder of the hole was firmly tamped with rock dust. Inasmuch as some of the miners used squibs it became necessary to provide a blasting barrel to guide the squib around the pasteboard tube. A feed line from an automobile formed an impromptu barrel that served the purpose fairly well until a supply could be procured from Illinois. In those cases where safety fuse was used this was carried along the bottom of the drill hole against the outside of the air chamber.

### LESS POWDER REQUIRED

By placing the explosive in the bottom of the hole and an air chamber between it and the stemming, the total disruptive force generated was distributed over the length of the charge plus that of the air chamber and its shattering action cushioned accordingly. Experiments were conducted with both black and permissible powders but best results were attained with black powder. When air chambers were used, about one-half the quantity of explosive was necessary to bring down a given amount of coal as when no air chamber was employed. The yield of lump coal, however, was greatly increased.

With black powder, loaded as above described, no flame was noted upon firing. It was hoped that the force of the explosion would blow the ground limestone from the drill hole and scatter it over the workings. It was found, however, that when this material was tamped fairly tight none of it was thrown into the air. Almost invariably the explosive seemed to expend its energy in compressing the rock dust instead of blowing it from the mouth of the hole.

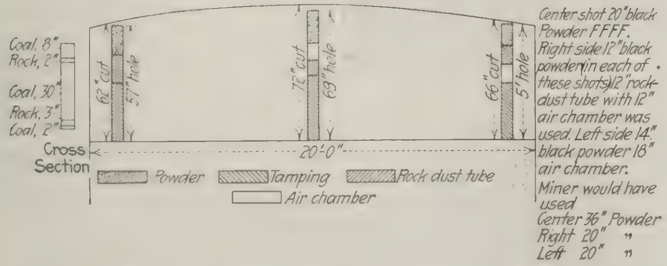


**Fig. 2—A 20-ft. Room Cushion-Loaded**

Here is a combination of air-chamber and rock-dust tube tamping, used in the center and at the right side of the room, with an air-chamber next the explosive on the left side. The saving of explosive over what the miner would ordinarily use was appreciable.

When air cushioning was used in breaking binders and partings the results were excellent. Binders, several inches in thickness, were generally broken into large pieces that could easily be handled by the loaders and separated from the coal adhering to them. The pieces of foreign matter were of such size that they could be picked out by hand without the aid of a shovel. The coal was thus kept cleaner by this method of blasting.

Although it should be remembered that the charges of explosive used in the coal mines of Maryland are small as compared to those used in most other states, yet, inasmuch as shooting is done by the miners while all other employees are at work, the smoke causes appreciable inconvenience. Naturally this smoke is most objectionable in narrow work such as at entry and air course faces. The use of air chambers decreased by about 50 per cent the amount of smoke given off in blasting.

Concerning the suppression of flame, the demonstrator reports: "I cannot state definitely that rock dust will eliminate all flame from a shot but will say that we were unable to observe any flame from any shot fired while using rock-dust tubes." The manner of loading some of the holes, the charges employed, and the cross sections of the beds are shown in the accompanying drawings.

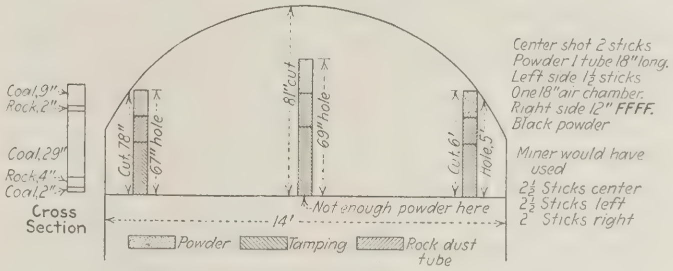


**Fig. 3—Cushion-Blasted Cross Cut**

Although the charge of explosive was admittedly too light in the center hole, yet results were fairly satisfactory. It is well known that in shooting coal, a heaving rather than a shattering action is desirable. The air chamber seems to deaden or muffle the force of the explosive, giving the heaving effect necessary.

The following facts were established from these experiments:

(1) The rock-dust stemming was not projected into the atmosphere either when it was tamped loose or when placed inside pasteboard tubes. In every shot fired, however, the stemming was firmly tamped and never left loose in the drill hole.

(2) No flame was observed when either black blasting powder or permissible explosive was used with an air chamber.

(3) The yield of lump coal, even in beds where the coal was of the softest character was increased by the use of the air chamber. The results obtained were conclusive in this regard.

(4) Little or no smoke or fumes were evolved when the air chamber was employed. Some shots were tried in a fire-clay mine and gave results highly gratifying to the management, as frequent blasting is necessary in mines of this kind.

(5) In every instance a saving in explosive was noted. So marked is this economy that it is believed the miners would be glad to purchase the necessary tubes themselves. Inasmuch as these tubes may be procured at a delivered cost of less than 1c. each, the operator might advantageously furnish them to the

miners gratis. Their cost would be far more than outweighed by the increased yield of lump coal obtained.

It is my opinion that an air chamber in front of a charge of explosive affords a factor of safety. If the miner has used too large a quantity of explosive the air chamber furnishes room in which the disruptive force generated may expand, thus venting a portion of its energy while the balance takes effect on the coal. The explosive force is distributed throughout the portion of the hole occupied by both the charge and the air chamber. This causes the coal to be broken down in larger lumps than would be the case if no air chamber were employed. The air chamber thus forms the miner's safeguard both in respect to the quality of coal produced and the efficient use of the explosive employed.

### Educational Work Necessary

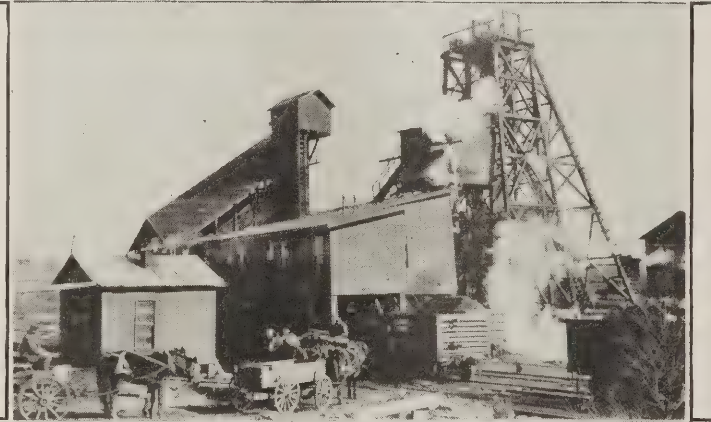
Nearly every practical miner, who after years of work at the face has reached a position of responsibility, will stoutly maintain that all drill holes, especially those employed in shooting off the solid, should be firmly tamped from the charge to the collar. Such men do not take kindly to the air-chamber method of shooting and it is difficult to induce them to consider it at all. Moreover, the laws of some states require that charges be tamped solidly to the mouth of the drill hole. Indeed, I am told that one mine inspector recently instituted legal proceedings against a man who tried the air-chamber method of blasting. It will be seen, therefore, that much educational work remains to be done before mining men in general accept air-chamber blasting as good practice. The mining laws of some states will have to be amended before the benefits of this method of blasting may be enjoyed by coal operators doing business within their boundaries.

Tests made in certain western Pennsylvania mines as well as some in Illinois have demonstrated that the quantity of explosive necessary to bring down the coal can be greatly diminished by the use of air spacing. The Pennsylvania experimenters found that best results were obtained, both as regards the percentage of lump coal produced and the shape in which it was brought down, by placing the air space in front of the charge. In these tests three 1¼x8-in. cartridges were pushed to the bottom of a 2-in. bore hole, without slitting or ramming. A spacer was next pushed back against the charge of explosive. This afforded an air chamber 24 in. long in front of the charge. The balance of the hole was then tamped tightly with moist clay.

Another plan tried for distributing the explosive force was the substitution of 1¼x8-in. for 1¾x6-in. cartridges. In this case a reduction in the weight of the charge used was obtained, as well as better results in blasting.

## Operations of the Hartman Coal Corporation in Kentucky

Victoria No. 11 mine (above), Morton's Gap, in the western Kentucky field where the No. 11 seam averages 78 in. in thickness. This mine has a daily capacity of 1,200 tons.



The Victoria No. 9 mine (left) of the Hart Coal Corp., near Madisonville, Ky. Part of the headframe is new, having been rebuilt to replace that portion destroyed when an explosion occurred in the mine last October.

White City mine (below) of the Hart Coal Corp., at White City, Ky. This mine was formerly the property of the Kingston Coal Co., of Kingston, Pa.

# Mine Electrical Man's Work Makes Him Resourceful

## Under Adverse Conditions He Often Has to Take Equipment Apart as Though Transporting It in Africa—Work Never Ends

BY AN ANTHRACITE ELECTRICAL ENGINEER

WHEN a young man enters the employ of a coal company and joins the staff of the electrical organization, he has certainly settled himself upon a job which will give him a broad variety of training. A few experiences which I have had will illustrate this.

The other day an electrical engineer for a large coal company told me that a friend of his working for a street railway company asked him if he had large transportation problems such as are found in street railway systems. As a matter of fact, this coal mine electrical engineer had under his supervision five times the electrified trackage that the street railway engineer had in that same area, to say nothing of the mine haulage system outside the territory of the traction company.

**The Father of Them All**

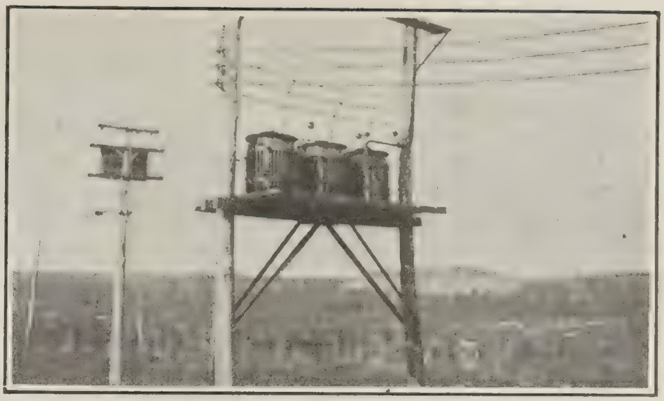
This automatic substation, the first one installed in any coal field, went into service for the Lehigh Valley Coal Co. in November, 1921. It is equipped with a rotary converter which is started and stopped by means of a push button located about one-half a mile from this station.

Why, some of the coal companies in our region generate and use more electrical power than is required for any of the largest cities in the same territory! Thus plenty of opportunity is presented to the mine engineer to learn all that the public utility engineer must know about steam and electric generation, transmission, distribution, switching, protecting and operating.

This electrical energy must often be converted from alternating to direct current and applied at many different voltages. Thus, the mine man encounters almost every type of direct- or alternating-current problem.

With some mining companies, the electrical engineer is in charge of all the equipment to which an electric motor is connected. This means that he must know about traffic management and also be a hoisting, hydraulic, and ventilation engineer, not to mention a few other kinds of expert.

The electrical work the mine electrical engineer must do is certainly widely varied. Often he has to apply ideas and methods used in many other industries. The use of the automatic substation illustrates the point.



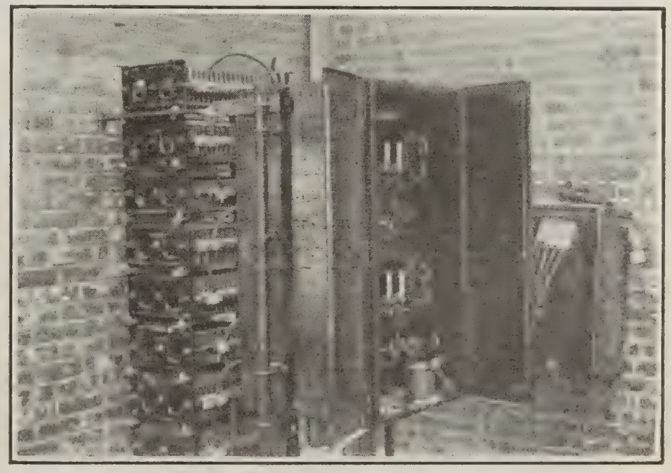
**Temporary but Serviceable Installation**

Before a permanent installation of equipment can be made, temporary power service often is required. This looks like doing the work twice, but how else can power be supplied for lights and construction equipment.

Distribution of direct current for use in the mines for haulage, pumping, hoists and so forth, in the most economical fashion has been greatly aided in the last few years by the adaptation of the railway automatic substation to meet mining needs. In an accompanying illustration is shown the first automatic station placed in service in any coal field. It was installed by the Lehigh Valley Coal Co. near Hazleton, Pa., in November, 1921. Here may be seen one of the great advantages of the automatic. Its location is central to the load. The messenger feeder construction extending out from both sides of the building can be seen plainly.

This station, about a quarter of a mile from the nearest hoisting engineer, is controlled by a switch in the hoist house. The station itself, though readily accessible for inspection, is located in the middle of a field near the "patch," partly surrounded by mine caves. The messenger feeder lines terminate at points where the cables are dropped through boreholes into the mines. Two feeders from this substation enter the mines in this manner.

Electric line work about the mines ofttimes affords an electrical engineer the best practice in the world. In daily overcoming difficulties and doing something new, he becomes well fitted in a few years to face almost any situation that is likely to arise. Company railroads shift frequently, strippings require more room, a subsidence breach opens out dangerously near the



**Where Electric Equipment Went in Quicker than Bricks and Roofing**

Sometimes the installation of electric equipment in a new building proceeds faster than the construction of the building itself. These hoist resistance grids were set up within walls but with the sky for a roof.

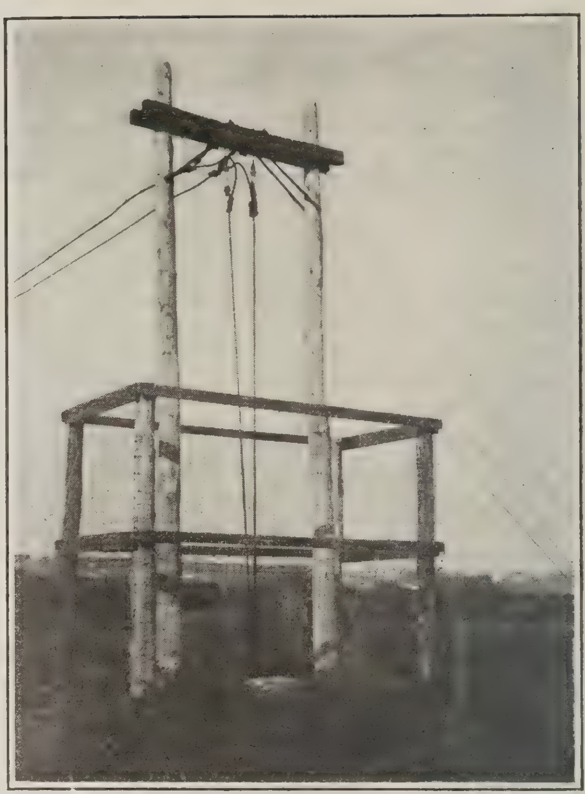
equipment under his supervision, or a new dump starts—the linemen must get busy to preserve his line and keep it in operation. He is forever on the jump.

A common occurrence is to have a mine-cave hole open up right under a pole—such things usually happen on holidays. Ask any lineman, he'll tell you. To keep going up to schedule, when the force at the colliery is low and labor is scarce, these men frequently have to dig their own holes, blast, clear and burn brush, and then take up the tools of their own trade and set up the poles and string the wires. These duties are particularly difficult when the gang is limited and the time allotted for the work is short, as so often is the case.

A set of accompanying photographs presents a sort of "movie" of the operations involved, employing but a handful of trained linemen and a group of "hands" often different at each job each day, whose efforts have to be kept co-ordinated by the line foreman. After many trying delays and usually with a great rush at the end to get finished over the weekend, ready for Monday, the line shapes itself again, the "lokie" can proceed over its new roadbed and the foreman can puff his pipe in satisfied contemplation of a line comparing right well with the big brothers which the public service companies erect with their complete facilities, standardized material and fully trained forces.

**Line Construction Job "in Motion"**

Unusual conditions at the mines often call for service from all sorts of workmen. Often a subsidence or changes in surface track systems require quick construction of power lines. This work must be done by men employed at various types of jobs around the mines, nevertheless, the grade of work done by them under adverse or emergency conditions compares right well with that done by the permanent gangs of the public utilities.



**Puts Power Where It Is Needed**

The automatic substation provides a means of supplying direct current directly into load centers. Here is the place where the feeders drop into the mines.

When a new slope breaks its way through the side of a mountain possibly a mile from the nearest surface road and the executive office approves an appropriation for an automatic substation and electric hoist to be located there, the electric construction engineer usually strokes his chin, views the surroundings, and wonders how soon Ford will perfect the "Lizzieplane."

In time he sees a crude "road" broken through by the mine teams hauling props for the workings, and he watches the precarious angles at which the wagons careen up and down the hillside. He can't figure on tractor haulage to transport his machinery or even use a heavy winch. He is practically dependent on these wagons of light capacity for his transportation problems. So he accepts the inevitable and sets about tearing his equipment apart limb by limb.

Mining conditions may necessitate overtime work to get the electrical equipment at the new slope going. The illustration showing three transformers on poles gives a view of such a location with the main colliery slate bank visible in the distance. Here are shown the power company's line, its metering pole and the coal company's "temporary" substation—one that has given service for over a year to an air compressor, fan and, more recently, a hoist. In an interior view of the hoist house can be seen the stack of grids for the permanent hoist and the contactor panel around which the walls were built after the hoist had been completely wired up. The brightness at the top of the picture is a clear indication of the absence, as yet, of a roof. Power on the spot was necessary, however, and the electrical engineer, in spite of difficulties, made certain that it was delivered.

# Illinois Mining Institute Discusses Machine Loading And Rock Dusting

ROCK DUSTING and mechanical loaders were the main subjects this summer before the Illinois Coal Mining Institute on its annual boat trip on the Mississippi River. A large group of coal mining men, consulting engineers and equipment salesmen made the three-day tour on the new steamer, Cape Girardeau, from St. Louis, Mo., down the river and back with stops at the towns Herculaneum, Chester, Commerce and Cape Girardeau. The party returned to St. Louis on June 21, having enjoyed a combination vacation and technical training tour.

On June 19 the party made a 40-mile trip by autos to the Flat River lead district where they were the guests of the St. Joseph Lead Co., the St. Louis Smelting and Refining Co., and the Desloge Consolidated Lead Co. A group went underground at each of these mines where they saw several types of mechanical loaders, including the St. Joseph type of Thew, the Myers-Whaley, and the Conweigh. In the afternoon the groups made an inspection trip through the concentration, flotation, and power plants. The Lead Belt golf course was placed at the disposal of the golf fans.

In the evening the members had the satisfaction of hearing from an old associate concerning mining practice in Great Britain, France, and Belgium. J. T. Ryan, vice-president of the Mine Safety Appliances Co., showed an interesting set of slides and called attention particularly to the new developments in the Kent and Yorkshire fields of England.

One afternoon on the boat was given to the subject of rock dusting, the program including the following papers: "Coal Mine Explosion Hazards and Safeguards," by J. E. Jones, safety engineer, Old Ben Coal Corporation, West Frankfort, Ill.; "Recent Developments in Rock Dusting in Europe," by J. T. Ryan; "Rock-Dusting Costs," by George C. McFadden, assistant to the vice-president, Peabody Coal Co. A paper on "Rock Dusting in Pennsylvania," by T. G. Fear, superintendent, Inland Collieries Co., of Indianola, Pa., was read by Mr. Ryan. Mr. Fear reported that about 100 mines are now rock dusting in Pennsylvania and West Virginia, practically all of this development having come in the last eighteen months.

A lively discussion followed these papers. J. H. Haskins, state inspector for the Illinois Department of Mines, suggested the appointing of a committee to co-operate with federal and state officials and with other associations in the formulating of plans, standard practice, and rules for rock dusting in Illinois. President Smith will name such a committee.

G. E. Lyman, general superintendent of the Madison Coal Corporation, described conditions at the new No. 12 mine at Cambria, Ill. In addition to dusting with rock, the company is using rock dust for tamping at various mines and practically has eliminated fires from shots. At one mine it previously had been necessary to use four fire-runners. These are no longer required. G. C. MacVean, of the Southern Gypsum Co., spoke briefly on the use of gypsum as rock dust. Thomas English, of the Illinois State Department of

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**Down the Mississippi River on the Steamer Cape Girardeau**

At the right are the officers and committees of the Illinois Mining Institute. They are, reading from left to right, front row: William E. Kidd, John E. Jones, J. A. Jefferis, Frank F. Tirre, J. A. Garcia; second row: George K. Larrimore, D. D. Wilcox, E. G. Lewis, Charles Gottschalk, H. E. Smith; third row: L. E. Young, A. C. Callen and Captain W. H. Leyhe.

Below, at the left, is the new steamer Cape Girardeau, which carried the Institute members on their annual outing down the Mississippi River. The illustration below, at the right, shows the mining men embarking on the Cape Girardeau after a day's trip in the lead district. During the three-day trip stops were made at Herculaneum, Chester, Commerce and Cape Girardeau.

Mines, reviewed safety work and spoke of the necessity for hearty co-operation with the department.

J. A. Garcia, who presided over the Saturday afternoon and evening meetings, pointed out the fact that many men were present solely on account of the papers to be presented on mechanical loading and made an appeal for Illinois operators generally to study the equipment on the market and the mining practice best adapted to the operation of machines. It was agreed that none of the papers on the subject would be published and no detailed report of the discussion was to be recorded in order to encourage a free and general discussion.

Prof. A. C. Callen, head of the mining department of the University of Illinois, first presented a general paper on loading machines and emphasized the advantages that would come from concentration of work and closer supervision if loading machines were installed generally.

Charles Gottschalk, consulting engineer, of Evansville, Ind., gave a paper on "Methods of Mining Suitable for Mechanical Loading." In his opinion it will be possible to develop efficient loading practice in connection with room-and-pillar mining. He urged concentration of operations, provided there was no interference with underground transportation. The successful application of loading machines, he said, will result only from hard, patient work by the organization at the mines, careful analysis of the problem, and original thinking.

C. S. Sandoe, general superintendent of the West Virginia Coal Co., cited the essential problems which would have to be solved before loading machines could be considered a commercial success. W. L. Strawn, of the United Iron Works, Kansas City, Mo., gave a brief report on the use of conveyors in long-wall mining in the southwest and pointed out how these conveyors could be used in the panel system. Inspector Haskins showed that concentration of workings would result in reduction of accidents.

### Machines Increase Opportunities

Lee Haskins, superintendent of the J. K. Dering Coal Co., at Eldorado, Ill., stated that the experience of his company was limited but that he believed in the ultimate successful installation of loading machines in Illinois. J. D. A. Morrow, Joy Machine Co., Evansville, Ind., gave an inspirational address on the opportunities in the coal mining industry as a result of mechanical loading. He suggested that point of view, originality of mind, and conviction that success was reasonably certain were essential to any organization attempting to introduce loading machines.

I. N. Bayless, superintendent of the Union Colliery Co., Dowell, Ill., gave data on the operation of the two Goodman power shovels and one Myers-Whaley machine. He pointed out various practical problems related to the use of loading machines in room-and-pillar work in mines in Illinois, and gave it as his opinion that machines would be used successfully. J. E. Barlow, Goodman Manufacturing Co., described briefly the use of the scraper loader as manufactured by his company.

Frank Westwood, electrical engineer, Southern Coal, Coke & Mining Co., St. Louis, stated that the Wilson loading machine was being used in his mines but did not give any data on the tonnage being handled. W. C. Evans, vice-president of the Crescent Coal Co., Peoria, Ill., referred to problems of the Peoria field in which the modified system of longwall mining is being sought in order to permit the use of loading machines. John L. Clarkson, general manager, Clarkson Coal & Mining Co., Nashville, Ill., was called on to describe a new loading machine that is being built for his company in St. Louis. He then discussed ways and means for cleaning mechanically-loaded coal underground.

In his talk on the cost of rock dusting, Mr. McFadden said that at first it seemed an enormous task to rock dust a 20-year-old Franklin County, Illinois, mine along the standards recommended by the U. S. Bureau of Mines and the Illinois Department of Mines and Minerals. However, upon carrying out such a program at Mine 19, operated by his company, the Peabody Coal Co., the initial dusting proved to be a simple job.

### Enumerates Rock-Dusting Costs

Rock dust received at the mine in open cars was sacked and delivered to a 75-ton storage room provided on the shaft bottom, and then distributed during the night shift along 105,000 lineal feet of roadway, air course and room necks which covered all open entries whether used or abandoned. In addition thereto rock-dust barriers containing 8 and 16 troughs to the barrier were provided and are maintained in the entrance of each entry throughout the mine.

The cost of improvements, consisting of truck, fan, motor, cables, hopper, tubing and storage bin, amounted to $1,065. Labor and material cost for the initial dusting, which provided slightly over 2 lb. per foot distributed on roof, ribs and floor of entry, and 80 lb. of dust per barrier trough, were as follows:

| | |
|---|---|
| 160 tons rock dust, delivered in storage bin on shaft bottom | $1,104.00 |
| 154 trough barriers | 884.16 |
| Labor dusting haulage roads | 361.00 |
| Labor dusting air courses | 520.00 |
| Labor and material cost | $2,869.16 |

For the initial dusting the average cost, including labor and material for distribution of rock dust and erection of barriers (allowing for depreciation on equipment) amounted to 2¾c. per foot of open entry.

In repeating for second and subsequent dustings, which it is proposed to perform every six months or sooner, if required, there will be a small increase in length of main and cross entries. With increased length of entries, added barriers, maintenance of barriers in place and continued dusting of roadways and air courses at 6-months intervals, it is estimated that the average cost based on the present wage scale for this important safety measure will be 1.6c. per ton on the output for the next 10-yr. period.

### Pioneers Continue Practice

"The Old Ben Coal Corporation is now starting its ninth season with rock dusting, the first season being the winter of 1917-1918," said Mr. Jones in his paper on dusting. "The practice at first was to install rock dust in such quantity and manner at all intersections of entries and at 500-ft. intervals so that dense clouds of the rock dust would be thrown into suspension in the event of an explosion to extinguish the flame. Collapsible overhead barriers on haulage roads, platforms on roadsides and troughs in trackless passages was the equipment used to contain the rock dust.

"Nine explosions have occurred, seven of which reached a rock-dust zone where the flame was extinguished by the first dust in the path of the explosion. Two were not of sufficient intensity for flame to reach the dust zone, although the force of these threw the rock dust into suspension. Two were of enormous intensity in force and flame and undoubtedly would have been disastrous had it not been for the rock dust installations.

"Yet with such perfect operation with the equipment there was that possibility of an overhead barrier being delayed in its action until the flame had passed, or that the barrier had been accidentally or mischievously tripped just prior to the explosion so total dependence could not be placed on barriers, because there was possibility of failure and hand dusting of roof and ribs in the vicinity of overhead barriers was done for a distance of 100 ft. in all available directions from each. The locations then left unprotected were the panel entries inby room No. 1 and all other entries between rock-dust zones. The need of rock dusting such unprotected territory and the need for a machine to do the work was apparent, and while a machine was in process of development some of the Old Ben mines were being rock-dusted by hand.

"The machine we developed, (two are now in operation) thoroughly coats all surfaces on haulageways and openings 30 ft. from the track. The problem of rock-dusting aircourses, however, is not so simply solved. It costs more to rock dust trackless passages than haulage ways. The method now in force is to blow dust into the aircourses at openings at regular distances, allowing the ventilating current to carry the dust as far as it will. This method does not result in a good, rock-dust coating on the roof, but gives a fair coating on the ribs and a thick coating on the floor. The dust coating on an aircourse floor usually remains dry for an indefinite length of time, since the fire clay usually is covered by a layer of dry, fallen, top coal.

### DUSTING AIRCOURSES NOT SUFFICIENT

"However, full dependence is not placed on the rock-dust coating of aircourses, for dust in troughs is installed at all intersections of the aircourses with other entries. Full dependence is placed in the dust coating of haulageways, for it is a simple matter to keep the ash content on the roof and ribs greater than 70 per cent. In addition, however, dust trough barricades are installed in wide places along haulage roads at 500-ft. intervals to give additional protection, but primarily to have rock dust in quantities available in the event of a mine fire.

"It has been found that the best time to coat the mine with rock dust is in the summer and fall when the mine surfaces are damp and the rock dust sticks better than in winter. An effort is made to have the rock dusting of each mine completed before the arrival of cold weather.

"An important factor of safety is the knowledge of the methane content of the mine air of each air division and the ash content of the mine dust. Sampling and analyses determine these, the analyzing being done in the Old Ben laboratory. Samples of dust are collected by the vacuum method because of the greater speed of collection than by dust-and-pan method and because of minimum loss of dust in locations where the mine air velocity is high.

"The samples of roof and ribs and the floor samples are taken separately. The average of the cross-section is determined by doubling the figure representing the ash content of the roof, ribs and floor and dividing by three. The surface of the roof and ribs is double that of the floor. By this measure the average ash content of haulage roads in six large mines that had been dusted six months prior to sampling gives an ash content of 74.8 per cent through a 100-mesh sieve.

### AVERAGE ASH CONTENT MISLEADING

"At first it would seem that redusting is not necessary with such a high ash content. This average, however, is from analyses that vary from 53 per cent to 90 per cent ash with many samples showing 58 per cent ash content. These lower readings are always found on the main haulage roads where the ventilation velocity is high and where long, fast-traveling trips move. Both these factors produce a sweeping action that tends to blow the rock dust into suspension. It must also be considered that new territory is developed that must have its initial dusting.

"The status of rock dusting in Illinois is favorable. A number of mines having a potential capacity of 100,000 tons per day are protected by dust or are in process of getting this protection. They employ, under normal working conditions, approximately 15,000 men underground. These operations are all in the extreme southern end of the Illinois coal field where the greatest explosion hazards of the state exist.

"To fully protect the mines against explosions, all of the mines having an explosion possibility—this condition determined not by experience but by inspection and analyses—must be safeguarded. The practice of rock dusting has proven to be practical in application, efficient in performance, harmless to mine and men and reasonable in cost."

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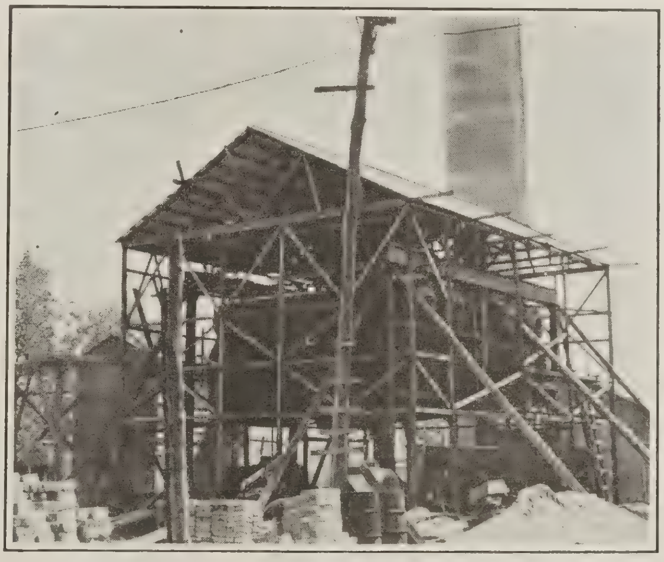
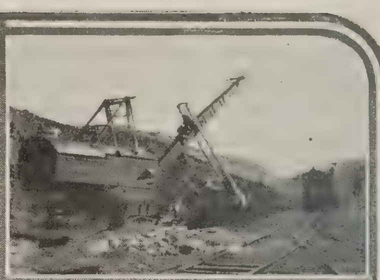


**Further Modernization and Electrification Necessitate New Boilers for Kentucky Mine**

Two 500-hp. Keeler water-tube boilers are being installed at No. 1 mine of the Norton Coal Mining Co., Nortonville, Ky. Refuse from the picking tables will be crushed and burned on inclined, overfeed stokers. Natural draft will be supplied by the 165-ft. concrete stack, in the background. The engine room equipment of the new power plant will consist of one 300-kw., 2,300-volt, alternating-current unit and one 300-kw., 250-volt, direct-current unit. The new equipment will replace an old plant containing four 150-hp. hand-fired boilers and several direct-current generators. Hoisting by steam will be continued, but it is planned to replace the old hoisting engine with a new one, in the near future.

# News Of the Industry



## Public Seems to Expect Government To Intervene in Event of Coal Strike; Obligation Might Devolve on Congress

**By Paul Wooton**

Washington Correspondent of *Coal Age*

Intimations from official quarters that the federal government is not going to pull anyone's chestnuts out of the fire this time, if a coal strike is precipitated, is being met with some skepticism. The federal government under similar conditions in the past, it is argued, has been loud in its declarations that it would keep hands off, but in the end generally has been inveigled into intervention.

This reasoning, however, fails to take into consideration that there has been some change in national thinking since last there was an emergency in coal. Any policy other than one of "hands off" would run counter to the political philosophy of the administration. According to the doctrine President Coolidge has been preaching the states must rise to their responsibilities. If any governmental intervention should be necessary doubtless he will feel the states, who have some authority to back them up, should do it. Federal officials are about to be fed up on undertaking tasks to which their legal authority does not extend. They have clearly in mind the ineffectual effort made during the last strike to exert influence when their only weapon was persuasion. Moreover, it must be apparent to all that there is no political reward for such endeavors, which usually draw little but abuse from all quarters.

### Congress Might Get Job

If a situation should arise where federal action could not be avoided, in view of the feeling among officials and of the policies of the administration, it would seem more likely than not to pass the responsibility on to Congress, possibly with a reminder that a commission of its creation studied the coal question exhaustively and made certain recommendations. Sight also should not be lost of the fact that reasons for calling an extra session of Congress have accumulated to the point where a coal strike might furnish the added demand necessary to cause the legislators to be assembled.

Attention also is called to the fact that the federal government has intervened so many times in the past when an emergency in coal has arisen that the public has come to regard that as the usual procedure. There is a widespread impression that the federal government will look out for domestic consumers at least.

The report on consumers' stocks issued last week by the U. S. Geological Survey in a general way shows that consumers of bituminous coal evidently are not nervous over the prospect of any interference with distribution. Their stocks are down to normal for this season of the year. It shows that the great stocks laid in in anticipation of a possible strike in 1924 now have been liquidated. Thus an influence which depressed the market for more than a year has been removed.

The report makes it very clear that consumers are not in a position to forego new supplies for any considerable period, which is likely to prompt heavy buying the minute consumers take seriously the threatened suspension in the union field.

### Consider British Situation

The other important circumstance which the anthracite conferees will not forget is the possibility of a strike in the British Isles. The importance of strikes in both countries at the same time can be exaggerated easily, as the amount of coal that can be shipped across the Atlantic naturally is limited. A strike in Great Britain, however, would take out of the country a considerable quantity of the best coal at a time when the entire non-union production would be needed to supply domestic requirements. With the mines of the Ruhr in a position to produce much more coal than ever before, the amount of European business which would come to the United States would be limited. The non-union fields, now in a position to handle export business, probably would be called upon to supply Great Britain's customers in this hemisphere and a much larger proportion of the bunker trade.

The British situation is being watched closely in Washington, more because of the lessons which we can learn from the developments in that situation than for the influence which simultaneous strikes might have on the coal business in this country. The British situation is believed to have reached a point where a comparatively small additional loss of business has brought about a serious situation. Sales are not running far below the boom year of 1923, but the losses in exports have been made up partly by an improved domestic demand. Purchases for industrial consumption within Great Britain, however, have not been made, to any great extent, at the mines which have suffered most in the loss of export business. This has shifted the demands on certain areas to such an extent that mines in the Forest of Dean, in South Yorkshire and in Nottinghamshire, for instance, are having difficulty in filling their orders and are offering premiums to secure men.

### *Buy Hard Coal Early, Says Lehigh Valley R.R.*

The Lehigh Valley R.R. devoted a large portion of a recent report on operating conditions to an analysis of the present coal situation. The company said in part:

"We again take this opportunity of calling the attention of the members of the Atlantic States Shippers Advisory Board to the importance of urging upon their members, as well as of users of anthracite coal, the desirability of placing their orders and receiving their winter's supply of coal during the summer months.

"If dealers and consumers of anthracite coal will order and receive their coal during the summer months, it will not only insure them a full supply for the winter if there should be a suspension when the existing agreement with the anthracite miners expires on Sept. 1, but it will result in reducing the peak load in the fall when all other traffic is at its height, assisting the railroads materially in maintaining the excellent service now being rendered."

One of the things which is discouraging the operators in South Wales and in Northumberland and Durham is the prospect of permanent loss of export trade. They are not in a position to compete successfully in many markets with German coal, while an increasing amount of the Italian trade is certain to be lost because of hydro-electric developments. The same applies in a more limited way to France, where also domestic coal production, with the rehabilitation of all its own mines, again is large.

Neither the coal owners nor the mine workers in Great Britain have forsaken the profit-sharing principle which has formed a part of recent agreements. The real bone of contention is the amount of the minimum wage which is to be paid the mine workers. Evidently the demand of the operators for an eight-hour day is submitted for trading purposes. Hours of labor in coal mines are limited to seven hours by statute. That limit cannot be exceeded by a premium. Legislation must be obtained before that demand could be attained, and no such legislation is in prospect.

One of the fundamental troubles with Great Britain is that the cream of its coal is gone. After centuries of mining even those generous deposits have reached a point where recovery is becoming much more expensive.

### Criticism Puzzles Commission

At the Federal Trade Commission a loss to understand why it should be criticized for issuing its report on premium anthracite is professed. It is stated that the delay in its issuance was due to the fact that all of the commissioners had not had an opportunity to make their studies of the report. It is admitted that there is nothing new in the report, but in that connection attention is called to the fact that a demand suddenly has developed for the report of the Harding Coal Commission, which likewise contains no information which has been gathered in recent years.

On the other hand many see in this report an effort to throw a monkey wrench in the machine at a critical moment. There is a loss to understand how the report could have any constructive purpose, since it is based on a very small amount of coal. Looking at the matter strictly from a public standpoint the issuance of the report is widely regarded as having undesirable.

The Federal Trade Commission always has had great hope of winning the Maynard case. It is just conceivable that this report is put out with the idea of paving the way for current reporting on costs, if the legal barrier should be removed.

## Utilities Consume More Coal And Less Oil in May

Public utility power plants in the United States consumed 2,962,049 net tons of coal in May, according to a report by the U. S. Geological Survey. This compares with 2,959,593 tons in April. Fuel oil consumption by utilities in May totaled 679,655 barrels, compared with 698,811 barrels in April.

The average daily production of electricity by public-utility power plants in May was 167,200,000 kw.-hr. about $2\frac{1}{2}$ per cent less than the average daily output for April. The usual seasonal decline in the daily production of electricity has continued from January to May at about the same rate as during the same months of 1924.

The daily production of electricity by the use of water power during May was about 3 per cent less than for April, which makes April the peak month for the year. Usually the month of May has the highest average daily output of the year.

© Keystone View Co.

**John Markle**

President of the Jeddo-Highland Coal Co., one of the large independent producers of anthracite, who sailed July 3 on the Majestic for a trip through Europe that will occupy at least four months. Mr. Markle lives in New York City.

## Says Ohio Coal Industry Faces Worst Year

Ohio probably will suffer its greatest slump in mining this year, Jerome Watson, mine division chief, declared when figures were submitted by Otto W. Brach, head of the statistical division of the state Department of Industrial Relations, showing that production in 1924 had decreased 26 per cent from that of 1923 and that nearly 300 more mines had been closed than in 1923. A further reduction in output of perhaps 30 per cent was forecast for 1925.

As compared with 40,904,275 tons of coal mined in Ohio during 1923, only 30,077,290 tons was produced in 1924. Belmont County produced 10,973,530 tons as compared with 12,676,797 tons during 1923. Jefferson County produced 4,348,329 tons; Athens County, 2,972,483 tons; Guernsey County, 2,633,807 tons; Harrison County, 2,422,023 tons; Perry County, 1,795,700 tons, and Tuscarawas County, 1,065,926 tons.

Mines operating in Ohio in 1924 numbered 1,082, as compared with 1,301 in 1923. It was estimated by Mr. Watson that slightly more than half as many mines have been operating during 1925 as were in 1923 and figures thus far obtained indicate material reductions in production.

The chief means of mining coal in 1924 was by use of machines, which produced 26,130,946 tons. Strip mines ranked next with 2,414,471 tons. Coal picked by hand resulted in a production of 1,531,873 tons. The decreases were evenly distributed over the three methods of production.

Tonnage reported from other counties was: Carroll, 344,719; Gallia, 12,298; Hocking, 710,946; Holmes, 27,221; Lawrence, 112,826; Mahoning, 56,998; Medina, 6,336; Meigs, 223,792; Morgan, 182,294; Muskingum, 380,788; Noble, 493,201; Scioto, 1,868; Stark, 462,552; Summit, 14,694; Vinton, 86,043; Washington, 1,619; Portage, 83,396; Jackson, 160,937; Coshocton, 237,673, and Wayne, 7,289 tons.

## Hard-Coal Operators to Run Two Traveling Shows

So successful was the Traveling Educational Exhibit of the Anthracite Coal Operators which closed at Bethlehem, Pa., early in June, that two traveling exhibits have been planned for the coming season. An Eastern exhibit will get under way at Portland, Me., on July 20 and a Western exhibit starts from Syracuse, N. Y., on Aug. 31. The Eastern exhibit, after a week in Portland will visit Nashua, Worcester, Providence, New Haven, Springfield, Montclair, Trenton, Reading, Camden, Wilmington and Washington. The Western exhibit, after a two weeks stay at Syracuse, will go to Buffalo, Toronto, Detroit, Grand Rapids, Chicago, Ft. Wayne, Toledo and Cleveland. In most of these cities the exhibit will remain a week, and in a few cities two weeks.

The new traveling exhibits will be on a more elaborate scale than the first, because they will attempt to enlighten the public on all of the advantages of using anthracite and will more nearly live up to the slogan earned by the first exhibit as "The Traveling University of Old King Coal." Approved heaters and coal-saving appliances together with devices for improving combustion, such as special grates and blowers, will be shown. There also will be devices that stoke a heater and draw off the ashes automatically, and appliances for making an ordinary heater burn the small sizes of anthracite. Cooking by coal will not be overlooked, as a range for this purpose will be among the exhibits.

A store or showroom in the heart of each city is hired for the exhibit. To these the public is invited through newspaper advertising, and combustion experts and heating engineers in charge will answer questions of those who call.

These exhibits are purely educational in scope and nothing is sold. Practical demonstrations show how to coal a heater properly, how to fix it for the night or in moderate weather so that it will give the maximum of heat with the use of the smallest quantity of coal.

There is an abundance of printed literature distributed free. "How to Cut Down the Cost of Heating Your Home" is a brochure full of facts for those who want to save, and an interesting leaflet, "Which Fuel," which describes the advantages and disadvantages of all fuels now being used for heating the home.

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Advices were received in the New York financial district last week that the United States Coal Co., with J. O. Bledsoe, St. Albans, W. Va., as a central figure in the project, is being organized to take over several coal producing properties in Kentucky and West Virginia. It is said that the consolidation plans have advanced to the point where terms are being smoothed over between interested parties and that several banks have agreed to finance the new company, which will have an annual capacity of 75,000,000 tons.

## Mine Accidents in May Killed 181; High Rate Due to Major Disasters

Accidents at coal mines in the United States in May, 1925, resulted in the loss of 181 lives, according to reports from state mine inspectors to the U. S. Bureau of Mines. The death rate for the month was 4.15 per million tons of coal produced, as compared with 3.45 in the preceding month and 3.33 for May, 1924. The increased fatality rate was due mainly to an explosion at Sanford, N. C., on May 27, in which 53 lives were lost, and to an explosion at Piper, Ala., on May 31, which killed 6 men. Without these two disasters the death rate for the month would have been 2.80 per million tons of coal mined.

For bituminous mines alone the reports showed 143 fatalities, including the two explosions referred to above. As the production of bituminous coal in May was 35,474,000 tons, the fatality rate was 4.03, as compared with 2.98 for May, 1924, and 3.20 for the month of May during the ten years 1915-1924. For anthracite mines alone the death rate from accidents in May was 4.67 per million tons based on a production of 8,134,000 tons, as compared with a death rate of 4.78 for May last year and a ten-year average rate of 5.55.

Records for the first five months of 1925 show that 930 men have lost their lives in accidents at the mines. The total production of coal during the period was 234,978,000 tons, hence the fatality rate was 3.96 per million tons. For the corresponding months last year the rate was 4.82. The five-month rate for bituminous mines alone was 3.59 in 1925 and 4.73 in 1924, while for anthracite mines alone it was 5.90 as compared with 5.29 in 1924. Production records show an output of 37,259,000 tons of anthracite and 197,719,000 tons of bituminous coal during the first five months of the present year.

Six major disasters with a total loss of 154 lives occurred during the first five months of the present year, as compared with 5 disasters and a loss of 384 lives for the corresponding months of 1924. A "major" disaster is defined as an accident causing 5 or more deaths. The fatality rate per million tons based exclusively on major disasters was 0.66 for the months of January to May, 1925, and 1.59 for the same period last year.

## *Big Saving in Change From Oil to Coal*

The Water Board of Kansas City, Mo., has decided to switch from oil to coal for fuel at its pumping station. This decision was based on an estimated saving of $40,000 per annum, according to word received from W. L. A. Johnson, general commissioner, Southwestern Interstate Coal Operators' Association.

## Bureau of Mines Extends Safety Work

An extension of the work of the Bureau of Mines for greater safety in mining operations is the purpose of a new subdivision of the Safety Service of the Bureau, which began to function July 1, coincidentally with the transfer of the Bureau to the Department of Commerce from the Department of the Interior, according to an announcement by Dr. D. A. Lyon, acting director.

J. J. Forbes, who has served as district engineer in Alabama, has been designated as the chief of the new subdivision, which will be known as the Safety Extension Service. The new subdivision, with the Mine Safety Service, which, under D. J. Parker as chief engineer, has performed notable rescue work at numerous mine disasters and trained thousands of miners in mine-rescue and first-aid methods, will make up the Safety Service of the Bureau, under Dr. T. T. Read, Safety Service Director.

In addition to co-operating with local chapters of the Joseph A. Holmes Safety Association in promoting interest in accident prevention and first-aid training in mining communities, the new Safety Extension Service will, in co-operation with the Mine Safety Service and the Mining Research Division, make field demonstrations and exhibits to illustrate and explain the safety methods, equipment and procedure recommended by the Bureau of Mines.

## Coal-Mine Fatalities During May, 1925, by Causes and States

(Compiled by Bureau of Mines and Published by *Coal Age*)

| State | Underground | | | | | | | | | | | | Shaft | | | | | Surface | | | | | | | Total by States | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Falls of roof (coal, rock, etc.). | Falls of face or pillar coal. | Mine cars and locomotives. | Explosions of gas or coal dust. | Explosives. | Suffocation from mine gases. | Electricity. | Animals. | Mining machines. | Mine fires (burned, suffocated, etc.). | Other causes. | Total. | Falling down shafts or slopes. | Objects falling down shafts or slopes. | Cage, skip or bucket. | Other causes. | Total. | Mine cars and mine locomotives. | Electricity. | Machinery. | Boiler explosions or bursting steam pipes | Railway cars and locomotives. | Other causes. | Total. | 1925 | 1924 |
| Alabama | 4 | | | 6 | | | | | | | | 10 | | | | | | | | | | | | | 10 | 6 |
| Alaska | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Arkansas | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 0 |
| Colorado | 1 | | 1 | | 1 | | | | | | | 3 | | | | | | | | | | | | | 3 | 4 |
| Georgia and North Carolina | | | | 53 | | | | | | | | 53 | | | | | | | | | | | | | 53 | 1 |
| Illinois | 2 | | 3 | | | | 1 | | | | | 6 | | | | | | | | | | | | | 6 | 3 |
| Indiana | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Iowa | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Kansas | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Kentucky | 6 | | 3 | | | | 1 | | | | | 9 | | | | | | | | | | 1 | | 1 | 10 | 17 |
| Maryland | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 0 |
| Michigan | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Missouri | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Montana | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| New Mexico | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 2 |
| North Dakota | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Ohio | 3 | | | | | | | | | | | 3 | | | | | | | | | | | | | 3 | 10 |
| Oklahoma | | | | 1 | | | | | | | | 1 | | | | | | | | | | | | | 1 | 0 |
| Pennsylvania (bituminous) | 11 | | 6 | | | | | | 1 | | | 18 | | | | | | | | | | | | | 18 | 14 |
| South Dakota | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Tennessee | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 5 |
| Texas | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Utah | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 1 | 3 |
| Virginia | 2 | | 1 | | | | | | 1 | | | 4 | | | | | | | | | | | | | 4 | 3 |
| Washington | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 0 |
| West Virginia | 14 | 1 | 5 | | | | 3 | | 6 | | | 29 | | | | | | 2 | | | | | | 2 | 31 | 24 |
| Wyoming | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Total (bituminous) | 46 | 1 | 19 | 60 | 1 | | 4 | | 8 | | | 139 | | | | | | 2 | | | | 1 | 1 | 4 | 143 | 96 |
| Pennsylvania (anthracite) | 16 | 2 | 6 | 4 | 2 | | | | | | 2 | 32 | 1 | | | | 1 | | | | 1 | 1 | 3 | 5 | 38 | 37 |
| Total, May, 1925 | 62 | 3 | 25 | 64 | 3 | | 4 | | 8 | | 2 | 171 | 1 | | | | 1 | 2 | | | 1 | 2 | 4 | 9 | 181 | |
| Total, May, 1924 | 59 | 9 | 29 | 4 | 4 | | 10 | 1 | | | 6 | 122 | | | | | | | 2 | 1 | | 2 | 6 | 11 | | 133 |

# Writ of Error Saves Bittner from Jail Sentence; Federal Observers Study Conditions in West Virginia

A writ of error and supersedeas granted by Judge M. O. Little, in the West Virginia Supreme Court on July 10, in Charleston, stays the sentence of Van A. Bittner, chief international union representative in northern West Virginia, who was to have started to serve six months in the Monongalia County jail in Morgantown on charges of contempt of court on Sunday, July 12. The writ is returnable next January.

Bittner had made temporary arrangements to have others take active charge of the work in northern West Virginia, although he probably would have continued to generally supervise the strike from prison.

In addressing a miners' mass meeting in Fairmont Theater in Fairmont several months ago Bittner is alleged to have referred to "infernal injunctions" and intimated that when they ran counter to the rights afforded him under the Constitution of the United States the injunctions would be violated. In his address the speaker made a scathing attack on an official who had an injunction in Monongalia, an adjoining county to Marion, and the attention of Judge I. Grant Lazelle, of Morgantown, was called to his utterances.

### Says Notice Was Too Late

As a result he summoned Bittner to appear before the court and after delivering a decision which required almost one hour to complete, fined Bittner $500 and imposed a sentence of six months in jail. Counsel for the defense in appearing before Judge Lazelle contended that Bittner never had notice served on him about the Continental Coal Co. injunction until after he had delivered the address.

Unquestionably the effort to jail Bittner has had a reaction in the region, and miners, who are naturally sympathetic, seem to be impressed with the alleged spirit of sacrifice that the union leader was willing to undergo.

In the first four days of last week non-union mines in northern West Virginia produced 5,012 cars of coal against 731 cars loaded by union mines. The open-shop plants loaded 1,311 cars on July 7, which was within five cars of the non-union peak of 1,316 cars, established June 30. Union mines produced 223 cars of coal July 9, which is more than was loaded on that basis for several weeks. On the average there were 151 non-union mines at work daily, while 10 union plants continued to work.

Mine No. 1 of the Gilbert-Davis Coal Co., in Scott's Run, has resumed operation on a union basis, according to reports. Some time ago the South Penn Coal Co., in the run, opened up on a union basis, it is reported.

It is reported from authentic sources that representatives of the U. S. Department of Labor are in the northern West Virginia coal fields making an investigation. The exact purpose of their visit is not generally known, but it is presumed that they came because of a telegram that Van A. Bittner, chief international representative of the United Mine Workers, sent to Secretary of Labor James J. Davis, calling attention to the alleged abrogation of contract by the Consolidation Coal Co., the largest signatory to the Baltimore agreement in the region.

During the lull over the Fourth of July the United Mine Workers made an effort to get across some effective organization work quietly. As a result when Monday, July 6, arrived the working force at Pinnickinnick was reduced. The union miners claimed that the mining force was so curtailed that it retarded production greatly. The company said that 113 men were at work Monday and later in the week asserted that additional old employees had returned to this and other mines in the region.

The Consolidation Coal Co., which seems to have made it a rule not to open a mine unless there is business in sight for it to work five days a week, did not start any additional mines last week. It is reported that probably the next mines that it will open will be New England mine, at Watson, adjoining the city limits of Fairmont, and the mine at Monongah, which is joined to it by a breakthrough. The Robey mine of the Hutchinson Coal Co., near Lumberport, Harrison County, began work July 6, with a number of its old force of men, it is reported.

A conference of all the International organization force in the region was held in Fairmont July 8, when the entire situation was gone over. International representatives of the United Mine Workers will visit every local union in the field this week, it was said. It is believed that it is a move to strengthen the morale of the union miners, which up until this time has been firm.

### Lewis May Pull Through

The union miners held a series of mass meetings over the field last week, some of them outdoors, despite daily thunderstorms in the upper Monongahela Valley. General strike talk has been afloat for several weeks in the region and interest rekindled by this may help John L. Lewis to pull through in the region, after what everybody regarded "a lost cause" from the beginning. Some observers, however, hold firm to the belief that the union was beaten from the start, is defeated now and will be totally routed in northern West Virginia.

Attorney Thomas C. Townsend, of Charleston, general counsel of the United Mine Workers, happened into Fairmont last week and admitted that plans are under way for an organization campaign in the non-union fields of southern West Virginia. It is reported that he attended a conference several weeks ago at the residence of Attorney W. A. Glasgow, in Philadelphia, when legal phases of the drive were considered.

**Paved Boulevard at Lynch, Ky.**

This unusual highway—for a mining town—owes its existence to the foresight of the United States Coal & Coke Co., owner of the Lynch Mines, which realizes the importance of good roads in otherwise isolated communities. The square building on the corner to the right is the mine office, and adjoining it is the bathhouse.

Various local unions all over the region continue to pass resolutions pledging loyalty to the United Mine Workers and adherence to the Baltimore wage agreement.

The West Fairmont Shaft operation, which is in the limits of the City of Fairmont, is reported by the Consolidation Coal Co. to be turning away men daily, having more applicants than it can employ. It is said that twenty-five or thirty men who entered Pinnickinnick a week or two after it was started were "salted" there by the miners' union to foment a strike and disorganize the working force. In this effort the union was unsuccessful, the company asserts.

## Coal River Collieries Plans Increased Capacity

Plans were announced July 10 for an expansion of operations by the Coal River Collieries Co. in Boone County, W. Va. One mine which now produces from 1,000 to 1,200 tons daily is to be increased in capacity to 5,000 tons daily. A contract has been awarded by the collieries company for the construction of twenty-five miners' houses at Seth.

Sale to the Chesapeake & Ohio Railway Co. of the Coal River & Eastern R.R., a ten-mile line in Boone County, W. Va., has been definitely closed between the two companies at a price agreed upon by both sides, according to an announcement by the Coal River & Eastern company at Huntington July 10.

The Coal River & Eastern R.R. runs from Seth to Prenter. It was built by the Coal River Collieries Co., which is owned by the Brotherhood of Locomotive Engineers, to serve mines of that company located about ten miles from the main line of the Chesapeake & Ohio's Coal River division.

Approval by the Interstate Commerce Commission is necessary to complete the purchase, which includes only the main line and excludes switch and spur tracks.

## Court of Inquiry Ordered In British Mine Dispute; General Tie-Up Threatened

Stanley Baldwin, the British Premier, made formal announcement in the House of Commons July 13 that the government has decided to establish a court of inquiry to investigate the causes of the present dispute in the British coal mining industry. The chairman of the court will be H. P. MacMillan, a Scottish lawyer, who, though not a Labor Party man, has some sympathy with labor's aims. The second member is Sir Josiah Stamp, president of the London, Midland & Scottish Ry. The third is W. Sherwood, a trade-union leader and organizing secretary of the Municipal Workers' Association.

The appointment of this court had been communicated to the miners' leaders assembled at Scarborough for a federation meeting before it was announced in the House. They agreed to appear before it.

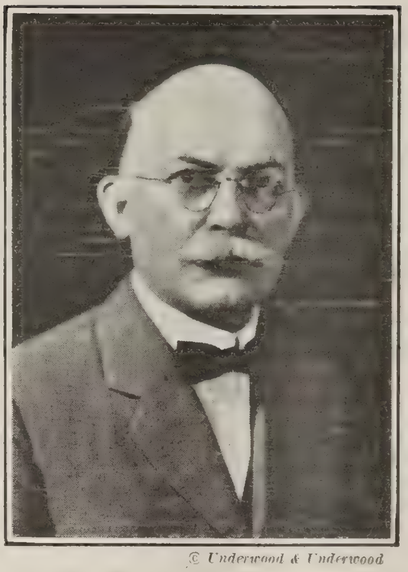
The government's first step toward intervening in the dispute was to name W. C. Bridgeman, First Lord of the Admiralty, as government conciliator. He was formerly Secretary of Mines and is well known and popular with both the mine owners and miners.

The government took a hand when the Executive Committee of the Miners' Federation decided to oppose the employers' demands for an eight-hour working day and a reduction in wages, at the same time refusing to enter into further negotiations until the mine owners' proposals were withdrawn.

The owners declined to withdraw their notices but declared their willingness to meet the Miners' Federation "in a conference upon the question of taking up the discussions at the point where they were suspended." The new offer of the owners was passed on to the miners and the committee of the Miners' Federation made a brief response, expressing "regret to learn that the coal owners have refused our reasonable request."

With the direct actionists in a strong position in the General Council of the Trades Union Congress, there is a threat of a general strike of 5,000,000 workers if the dispute of miners and mine owners is not satisfactorily composed. A. J. Cook and other radicals have been trying to bring about a quadruple alliance of miners, railwaymen, engineers and transport workers to call a general tie-up in the event of the owners refusing to come to terms.

Since the Beckley Pocahontas Coal Co. was sold at public sale not long ago in Raleigh County the new owners have effected a reorganization of the company and have given it a new name —Lecony Smokeless Coal Co. of Besoco, with H. E. Moran, of 32 Broadway, New York City, as president; Richard R. Conant, of the same address, as vice-president and secretary-treasurer, and P. A. Grady, of Besoco, as general manager. This company was sold to the new owners for the sum of $35,000. It had changed hands in 1920 for $750,000. The property of the company is located on Stonecoal Creek, in Raleigh County, West Virginia.



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**Charles W. Bryan**

Nebraska's former governor announces that he is going into the coal business again next fall. He says he will be the largest wholesaler in the state.

## *Bryan to Sell Coal Again*

Charles W. Bryan, ex-Governor of Nebraska, announced, July 6, at Parsons, Kan., that he intends to enter the coal business again in his state next winter. Mr. Bryan said he had contracted for a large supply of southeastern Kansas coal while in Pittsburg that day, to be distributed through Nebraska this winter. As larger operators denied having dealt with Mr. Bryan, his contract evidently was made with small producers.

"When I was Governor," he said in Parsons, "I tried to get retailers to furnish coal at a reasonable price. They refused, so I bought coal by the carload and sold it to distributors in carload lots. They, in turn, sold it to the people at $5 a ton less than the retailers. I estimate that this saved the people of Nebraska millions of dollars a year. I sold to dealers in 150 towns. The coal, I found, cost $3.25 a ton. The freight rate was $3.50, making $6.75 the cost to the retailers. They sold the coal for $14.50, which made a net profit of $7.75 a ton.

"Last winter I told the people that I would furnish them coal this winter at a reduced price. I am going to do this and I am probably the largest wholesale coal dealer in the State of Nebraska."

Mr. Bryan explained that he will not sell the coal at cost. "That would not be a good business proposition," he said.

## Bureaus Transferred July 1; Adivsory Committee Named

No formalities surrounded the transfer of the Bureau of Mines from the Interior Department to the Department of Commerce on July 1. Dorsey A. Lyon, acting director, on that day was an early caller at the office of the Secretary of Commerce, where Judge S. B. Davis, the Department's solicitor, is holding forth in the absence of Secretary Hoover and Assistant Secretary Drake. Judge Davis affixed his signature to the documents which require the approval of the Secretary at the beginning of the fiscal year and the Bureau of Mines became an integral part of the Department of Commerce.

The transfer of the mineral resources division of the Geological Survey to the Bureau of Mines was accompanied by an informal assembly of the personnel of the mineral resources division in the meeting room of the Bureau of Mines, where F. J. Katz, head of the division, introduced each member of his staff to Dr. Lyon. In welcoming them into the Bureau, Dr. Lyon expressed the thought that their work might become more interesting, as the division is made up of those accustomed to deal with economic phases of the industry, which now are to be emphasized.

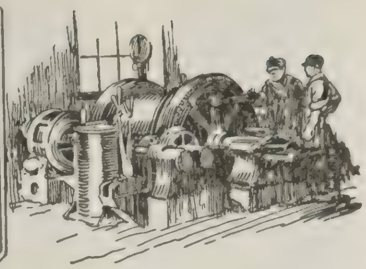
In the Bureau of Mines the title of the division will be that of "Mineral Resources and Statistics." Mr. Katz will report directly to the assistant to the director. This classification of the new division is temporary. There is no desire to make it permanent until the views of Secretary Hoover's advisory committee can be obtained.

Due to the absence of secretary Hoover there has been some delay in launching the work of the advisory committee, of which J. V. W. Reynders, the president of the American Institute of Mining & Metallurgical Engineers, is chairman. A meeting is imminent, however, as it is recognized as being highly desirable for the committee to be working in the absence of Secretary Hoover, so that its perfected recommendations may be laid before him on his return, about Aug. 1.

The American Mining Congress has named L. S. Cates, its president, as its representative on the committee. James F. Callbreath, secretary of the Congress, has been designated as his alternate. The National Coal Association has named J. G. Bradley to serve on the committee, while the United Mine Workers has selected Philip Murray. H. Foster Bain also is to be a member of the committee because of his intimate knowledge of the Bureau's work. As this is written, the other organizations which will be asked to designate members of the committee have not been determined upon finally.

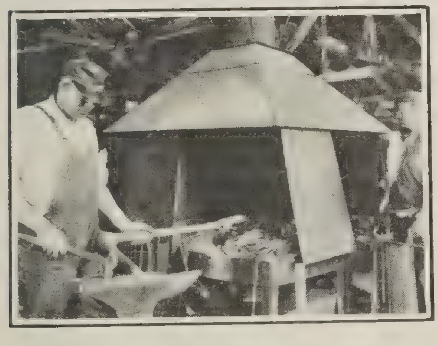
A first-aid contest was held July 1 at Ebensburg, Pa., for the championship of Cambria County with 24 teams participating. First prize was won by the Penelec Coal Corporation team, which averaged 99⅖ per cent for the five events. The prize was a huge silver trophy cup presented by Charles M. Schwab, of the Bethlehem Steel Co., controlling the Bethlehem Mines Corporation. The Monroe Coal Mining Co., of Revloc, won second honors with an average of 98 per cent, and third place went to No. 2 team from the Rich Hill Coal Mining Co., whose score was 97.33 per cent. The judges were state mine inspectors, including 10 past presidents of the Coal Mining Institute of America.

# Practical Pointers For Electrical And Mechanical Men



## Grouping of Forges Saves Space In Overcrowded Mine Shop

Many coal mine shops are more or less crowded and ample room in which the men may work is somewhat at a premium. Theoretically, a blacksmith with his forge and anvil should require a certain floor area in which to work, and this area cannot be reduced appreciably if efficient work is to be performed. As a matter of fact, forges may sometimes be arranged in such a way that the entire group may occupy less space than would its constituent elements if set singly. This is particularly true if the floor area available is approximately square.



**Four Forges Under One Hood**

Each blacksmith has his own forge but one hood serves the entire group. The fires are separate yet less floor space is required than if each forge was installed as a separate unit.

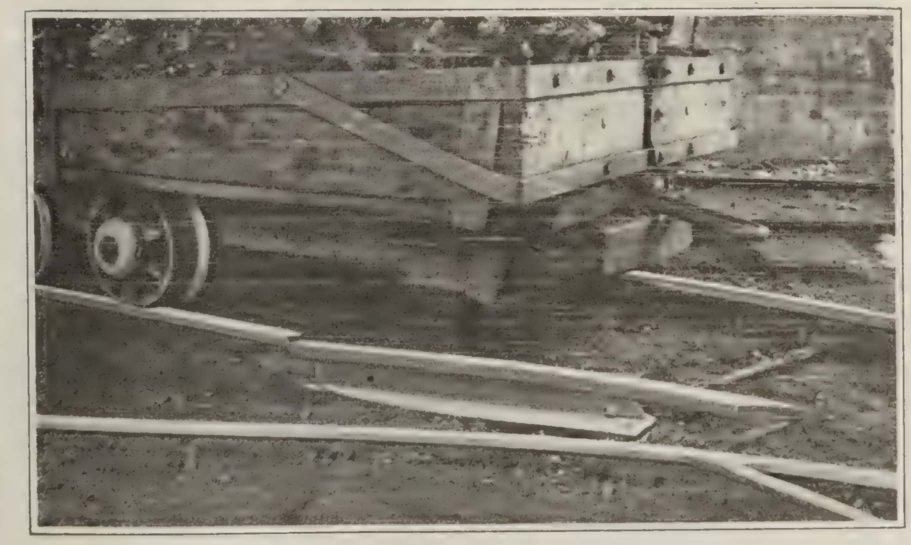
In the accompanying illustration made from a photograph taken in the shops of the Kingston Coal Co., Kingston, Pa., may be seen a group of four forges built up as a single unit and provided with a common hood. Four separate blowers are installed so that each fire may be controlled independently of all the others. Each smith stands at his own particular side of the grouped forges and in no wise interferes with the work of the others. To all intents and purposes his movements are as free and unhampered as if he had his own individual forge installed as a separate unit.

One interesting detail of this arrangement deserves special mention, namely, that the side plates extending from the smoke hood to the hearth frame are hinged at the top so that they may be folded up out of the way should a large or odd-shaped piece of work be encountered. This arrangement permits the heating of long pieces of straight or curved stock at a point near their middle, the heating of wagon or buggy tires and similar pieces preparatory to upsetting, and like jobs. It is, of course, possible to arrange a hood of this kind so that it can be raised and lowered, although the one here shown is stationary.

### Jump-Over Switch Serves at Mine for Ten Years

An old device which time has failed to displace is the jump-over switch or rail for use in place of a frog where it is an advantage to have minimum track friction and to have the two rails at slightly different elevations.

The photograph shows one of these switches which has been in service ten years at mine No. 2 of the Hazard Blue Grass Coal Corp., at Hazard, Ky. This switch is located about 20 ft. from the kick-back dump. The loads approach by gravity. The flange of the front wheel forces the jump-over rail into position thus providing a smooth crossing about 2 in. above the rail of the empty track. After the car has passed over, the switch is pulled back by a coil spring, thus clearing the rail of the empty track ready for the car as it is kicked back from the dump. Where the grade is naturally limited it is a distinct advantage to have the track friction minimized by the use of a continuous rail such as made possible by this device.



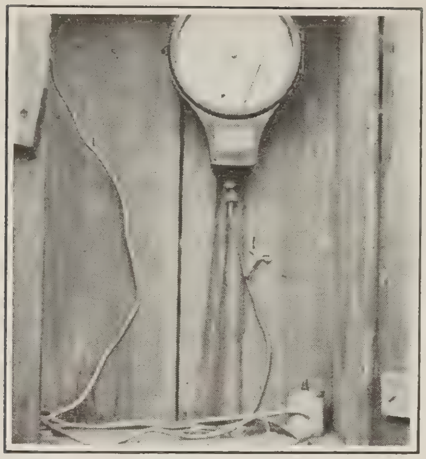
**Cross-over Switch Has Long Service Record**

Time has failed to bring about the replacement of this device by a better one. This jump-over switch has been in use ten years at mine No. 2 of the Hazard Blue Grass Coal Corp., at Hazard, Ky.

### Pumped Water Is Metered Over Glass Weir Lip

All the water pumped from the No. 2 shaft of the Susquehanna Collieries Co., near Williamstown, Pa., is metered. This is consistent with many other practices of obtaining accurate data on machinery employed by this company.

The interesting feature of the weir used at No. 2 shaft is the method by which accurate results are obtained for long periods. The edge of the weir is not a hardwood board; instead, it is a thick piece of plate glass with a beveled edge. Almost



**Meter Records Quantity of Water Pumped**

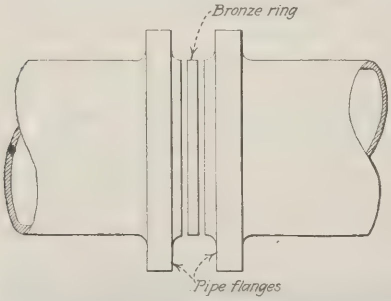
Accurate results are obtained by a 6-ft. glass weir lip. The chart indicates the volume of water raised during any period of the day.

any other material used for this purpose would require frequent replacement because of the gritty and acidulous nature of the water.

The accompanying illustration shows a meter connected to the measuring device. Thus daily records showing variations and the quantity of water raised are always obtained.

## Bronze Ring in Pipe Lines Gives Working Clearance

When long pipe lines are laid tightly together without some kind of spacing ring between the ends of the various sections it is always difficult to make a repair or change to the line.



**Ring Makes Repairs Easy**

Pipe sections are readily removed when spacing rings are placed at alternate joints.

At the mines of the Susquehanna Collieries Co. pipe lines are installed with a machine-faced bronze ring at alternate pipe joints. With this arrangement, a section of pipe can be removed or replaced easily. The rings are about ¼ in. thick and permit plenty of clearance whenever work must be done on the line.

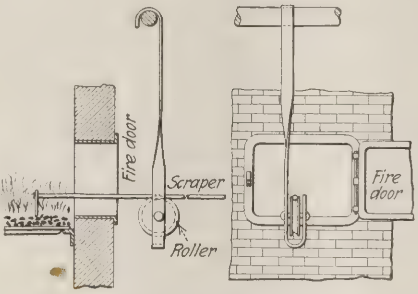
If the pipe stands vertically or nearly so it usually is difficult to remove a section if some clearance cannot be obtained. With a removable spacing ring at the joints, as described, sufficient clearance is easily obtained.

The ring is installed between two pieces of fabric which permit the joint to be pulled up tightly preventing leaks. The illustration shows how the material is assembled.

## Roller Rest Makes Fire Cleaning Easier

The long scraper used to level off or pull the fire under a hand-fired boiler is usually heavy enough to cause any fireman to feel tired at the end of the day if he uses it frequently.

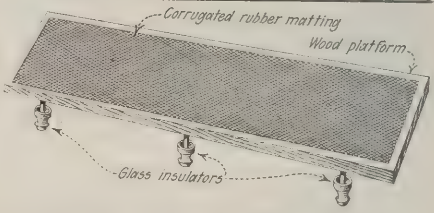
At the Shamokin power house of the Susquehanna Collieries Co. near Mount Carmel, Pa., one of the workmen has devised a rest for the scraper which makes its use much easier. This rest consists of an arm with a hook on one end and a roller on the other. The accompanying illustration shows how it is hung in front of the fire door. When the scraper is in service the fireman rests the long handle on the roller instead of dragging it on the bottom of the fire door.



**Reduces Fireman's Labor**

The scraper rod rests on the roller and thus the work of leveling the fire bed and cleaning the furnace is made much easier.

Incidentally this power house will soon be fired with pulverized fuel.



**This Platform Is Extra Safe**

Not being satisfied with the mere insulating qualities of rubber laid on a control-room floor, one coal company makes its switches safe to operate by the method here shown. Dirt and dust easily get ground into rubber matting.

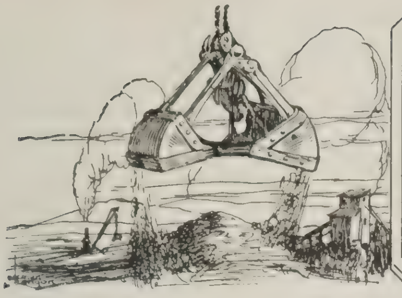
## Fan Exhaust Heats Water for Boilers and Wash House

At a mine of the O'Gara Coal Co. near Harrisburg, Ill., an unusual method of obtaining heated water for the wash house and boiler room, is employed. In the mine yard, not far from the power house and miners' wash room stands a large steam-driven mine fan.

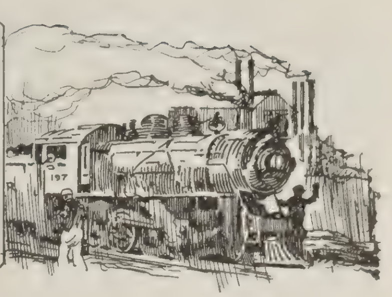
Like nearly all such units, this fan must be operated continually and therefore consumes a large quantity of steam. By means of special arrangements made at the fan, the exhaust steam pressure of the engine is sufficient to force the steam into a large heater which receives water of normal temperature. The heat energy of the exhaust steam warms the incoming water and raises its temperature sufficiently high to be used either as boiler feed water or for the wash room. The fact that this fan is so near the boiler house that the heat losses are low makes this method of heating water attractive.

**A Fan Designed to Save the Exhaust Heat Units**

Whether the mine is operating or idle the fan is one of the most important devices on the property. Usually, it must run continuously. This one is equipped with a water-heating tank which utilizes the heat in the exhaust steam.



# Production And the Market



## Bituminous Coal Market Is Brighter; Anthracite More Active

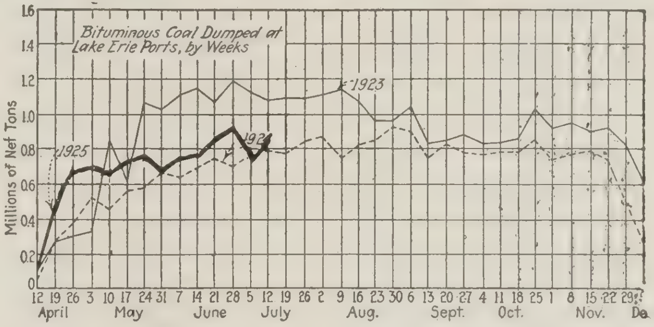
Despite the comparative sameness of day-to-day conditions in the soft-coal market, orders being scarce and prices floundering in the depths, the trade seems somewhat more cheerful. Some intrepid operators, in fact, have had the hardihood to announce an early advance in prices, among them Hazard (Ky.), Franklin County (Ill.) and West Virginia producers. These changes are expected to be reflected quickly in Indiana and Illinois coals, producers of which are preparing for an improvement. Meantime the trade is somewhat at a loss to understand the continued indifference of Midwestern consumers of steam coal. An interesting development of last week was the purchase of a large tonnage of 2-in. screenings at $1.55 by a strong Franklin County operator from a mine controlled by a large mail order concern, which was about to offer it to the stockyards at $1.50. This held the price fairly firm at $1.75.

Kentucky coal is moving somewhat better, but prices in western Kentucky are unsatisfactory, screenings selling as low as 90c. Eastern Kentucky, however, is maintaining better prices. Business at the head of the lakes continues quiet, awaiting developments. Receipts at the docks for the first six months of this year were nearly 1,500,000 tons above those of a similar period a year ago. On the other hand, shipments off the docks fell more than 4,000 cars short of those of the first six months of 1924. Conditions are practically unchanged in the Southwest, being somewhat duller in Utah.

At Cincinnati the firmer tendency in evidence a week ago has disappeared and the market finds itself in much the same condition as in late June. Domestic trade is picking up in southern Ohio and the steam trade is about normal. Little change for the better is in evidence in eastern Ohio and Pittsburgh. The New England and other Eastern markets are somewhat firmer.

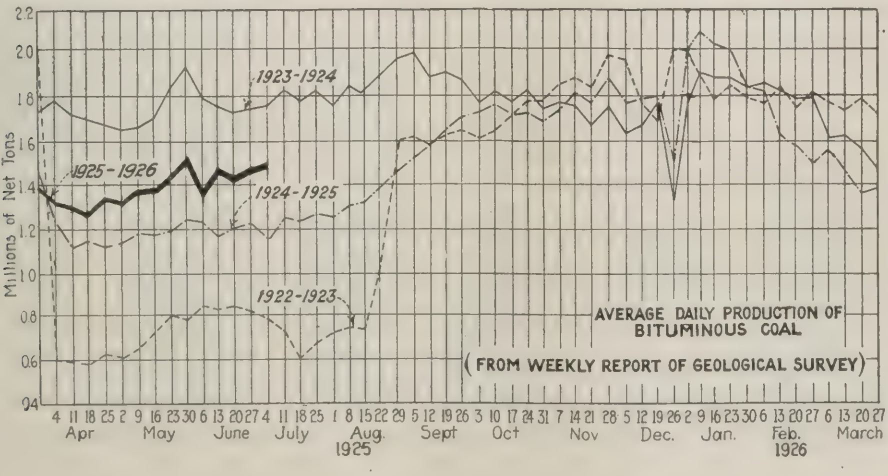
As expected, the anthracite market shows a marked increase in firmness as a result of the strike talk in the air. Demand is better and independent coal prices reflect a stronger tendency than a week ago. The upturn came none too soon, as some of the smaller mines were faced with the prospect of curtailing operations or suspending.

Bituminous coal output in the week ended July 4 is estimated by the Geological Survey at 7,381,000 net tons, compared with 8,671,000 tons in the preceding week and 5,913,000 tons in the corresponding week a year ago. Anthracite production in the week ended July 4 was 1,514,000 net tons, compared with 1,844,000 tons the week before and 1,296,000 tons in the same week last year.



*Coal Age* Index of spot prices of bituminous coal receded slightly during the week, standing on July 13 at 160, or $1.93, compared with $1.94 last week.

Dumpings at Lake Erie ports during the week ended July 12, according to the Ore & Coal Exchange, were: Cargo, 784,370 net tons; steamship fuel, 47,520 tons—a total of 831,890 net tons, compared with 780,300 tons in the preceding week. Hampton Roads dumpings in the week ended July 9 totaled 468,804 net tons.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| June 20 | 7,434,000 | 8,402,000 |
| June 27 (*a*) | 7,608,000 | 8,671,000 |
| July 4 (*b*) | 5,913,000 | 7,381,000 |
| Daily average | 1,183,000 | 1,476,000 |
| Cal. yr. to date | (*c*) 235,685,000 | 239,170,000 |
| Daily av. to date | 1,512,000 | 1,531,000 |
| **ANTHRACITE** | | |
| June 20 | 1,823,000 | 1,788,000 |
| June 27 | 1,918,000 | 1,844,000 |
| July 4 | 1,296,000 | 1,514,000 |
| Cal. yr. to date | (*c*) 46,441,000 | 45,949,000 |
| **COKE** | | |
| June 27 (*a*) | 125,000 | 128,000 |
| July 4 (*b*) | 94,000 | 118,000 |
| Cal. yr. to date | (*c*) 6,098,000 | 5,350,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Anticipates Improvement

There are unmistakable signs that conditions will improve greatly in the Chicago coal market during the next thirty days to six weeks, and far-sighted coal men are already taking steps to provide for this market improvement.

The Franklin County operators have announced that effective Aug. 1 there will be an increase of 25c. a ton on domestic sizes and some of the big producers of West Virginia splint coal, who have lately begun to cut quite a figure in the Middle West, notified their trade to look for an increase on July 15. These people contemplate raising the price of 3-in. block from $2 to $2.25 and of 6-in. block from $2.25 to $2.50. The Hazard operators, who feature somewhat in the Chicago market, contemplated an increase as of July 15 from $2.30 to $2.45 on one grade and from $2.50 to $2.65 on another. This improvement in circular prices is going to make itself felt very quickly on Illinois and Indiana coals, as it will enable the producers of these coals to increase their prices as well. Smokeless operators are having no difficulty in maintaining a minimum price of $3 and it was confidently expected that before the middle of the month the price on good smokeless lump and egg would be $3.25, with mine-run somewhere around $2 to $2.15.

The situation on steam coals in the Chicago market is difficult to understand. It is pretty well known that Chicago industries have no large amount of tonnage in storage; nevertheless they maintain blithely that there is no need to bother about coal as there will be plenty. One mine in Franklin County, controlled by a mail order concern, had so much fine coal on track that it was going to offer a large tonnage of 2-in. screenings to the stockyards at $1.50. One of the stronger Franklin County operators heard of this and purchased the coal at $1.55, which kept the market on Franklin County screenings reasonably firm at $1.75. Industrial coals from Indiana, central Illinois and the Standard district continue to lag on the Chicago market. Some west Kentucky coal is being sold from day to day, but most of it at low prices. Those "in the know" are firmly of the belief that steam coals will advance with domestic sizes during the next thirty days.

The situation in the Williamson, Franklin County and Saline County fields remain unchanged. The tonnage of domestic sizes moving out is unusually small for this season. Steam sizes are moving fairly well and some mines are crushing coal to make screenings. There is a little railroad tonnage from the deep-shaft mines but the bulk of it seems to come from strip mines. The shaft mines are giving one and two days a week to those that are working, while the strip mines are working nearly every day and are shipping a lot of mine-run and some screen sizes, and are doing some crushing.

There is no change in the price situation although Frank-

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | July 14 1924 | June 29 1925 | July 6 1925 | July 13 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.85 | $2.85 | $2.85 | $2.75@$3.00 |
| Smokeless mine run | Columbus | 2.20 | 1.85 | 1.85 | 1.75@ 2.00 |
| Smokeless screenings | Columbus | 1.30 | 1.30 | 1.30 | 1.25@ 1.40 |
| Smokeless lump | Chicago | 3.60 | 3.10 | 3.10 | 3.00@ 3.25 |
| Smokeless mine run | Chicago | 1.85 | 1.85 | 1.85 | 1.65@ 2.10 |
| Smokeless lump | Cincinnati | 3.75 | 2.85 | 2.85 | 2.75@ 3.00 |
| Smokeless mine run | Cincinnati | 1.80 | 1.85 | 1.95 | **2.00** |
| Smokeless screenings | Cincinnati | 1.35 | 1.25 | 1.30 | *1.25* |
| *Smokeless mine run | Boston | 4.30 | 4.25 | 4.20 | **4.20@ 4.35** |
| Clearfield mine run | Boston | 1.80 | 1.80 | 1.80 | *1.65@ 1.95* |
| Cambria mine run | Boston | 2.20 | 2.10 | 2.05 | *1.90@ 2.10* |
| Somerset mine run | Boston | 1.95 | 1.90 | 1.90 | *1.75@ 2.00* |
| Pool 1 (Navy Standard) | New York | 2.70 | 2.55 | 2.55 | 2.40@ 2.70 |
| Pool 1 (Navy Standard) | Philadelphia | 2.80 | 2.60 | 2.60 | 2.45@ 2.75 |
| Pool 1 (Navy Standard) | Baltimore | .... | 1.85 | 1.85 | 1.80@ 1.95 |
| Pool 9 (Super. Low Vol.) | New York | 2.10 | 2.00 | 2.00 | 1.85@ 2.15 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.00 | 2.00 | 1.85@ 2.20 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.85 | 1.75 | 1.75 | 1.65@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.80 | 1.85 | 1.85 | *1.75@ 1.90* |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.70 | 1.70 | 1.60@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.65 | 1.60 | 1.60 | 1.55@ 1.65 |
| Pool 11 (Low Vol.) | New York | 1.55 | 1.55 | 1.60 | *1.50@ 1.65* |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.40 | 1.40 | 1.35@ 1.45 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.50 | 1.50 | **1.40@ 1.65** |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.50 | 1.50 | 1.45@ 1.60 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.35 | 1.35 | 1.30@ 1.45 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.40 | 2.40 | 2.30@ 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.20 | 1.50 | 1.50 | 1.40@ 1.60 |
| Kanawha lump | Columbus | 2.10 | 1.85 | 1.85 | 1.75@ 2.00 |
| Kanawha mine run | Columbus | 1.50 | 1.40 | 1.40 | 1.35@ 1.50 |
| Kanawha screenings | Columbus | 1.00 | 1.05 | 1.15 | 1.10@ 1.20 |
| W. Va. lump | Cincinnati | 2.10 | 2.10 | 2.25 | 2.00@ 2.50 |
| W. Va. gas mine run | Cincinnati | 1.35 | 1.50 | 1.55 | *1.35@ 1.50* |
| W. Va. steam mine run | Cincinnati | 1.35 | 1.30 | 1.40 | *1.25@ 1.40* |
| W. Va. screenings | Cincinnati | .95 | 1.10 | 1.15 | *1.10@ 1.15* |
| Hocking lump | Columbus | 2.45 | 2.15 | 2.15 | *2.00@ 2.30* |
| Hocking mine run | Columbus | 1.70 | 1.50 | 1.50 | 1.40@ 1.65 |
| Hocking screenings | Columbus | 1.35 | 1.30 | 1.30 | 1.25@ 1.40 |
| Pitts. No. 8 lump | Cleveland | 2.35 | 2.20 | 2.20 | 1.90@ 2.50 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.85 | 1.80 | **1.80@ 1.90** |
| Pitts. No. 8 screenings | Cleveland | 1.10 | 1.40 | 1.40 | **1.40@ 1.50** |

| Midwest | Market Quoted | July 14 1924 | June 29 1925 | July 6 1925 | July 13 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $2.75 | $2.60 | $2.60 | $2.50@$2.75 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.70 | 2.00 | 2.00 | 1.75@ 2.25 |
| Central Ill. lump | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Central Ill. mine run | Chicago | 2.10 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central Ill. screenings | Chicago | 1.65 | 1.75 | 1.75 | 1.65@ 1.90 |
| Ind. 4th Vein lump | Chicago | 2.60 | 2.60 | 2.60 | 2.50@ 2.75 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.70 | 1.80 | 1.80 | 1.65@ 2.00 |
| Ind. 5th Vein lump | Chicago | 2.35 | 2.25 | 2.25 | 2.15@ 2.40 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.55 | 1.50 | 1.50 | 1.40@ 1.60 |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.25 | 2.25 | 2.25 |
| Mt. Olive screenings | St. Louis | 2.00 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.15 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.45 | 1.70 | 1.50 | 1.50 |
| West Ky. block‡ | Louisville | 2.10 | 1.35 | 1.35 | **1.25@ 1.60** |
| West Ky. mine run | Louisville | 1.60 | 1.10 | 1.10 | **1.10@ 1.40** |
| West Ky. screenings | Louisville | 1.25 | 1.05 | 1.10 | *.90@ 1.15* |
| West Ky. block‡ | Chicago | 2.05 | 2.00 | 2.00 | 1.90@ 2.15 |
| West Ky. mine run | Chicago | 1.60 | 1.35 | 1.35 | 1.15@ 1.60 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.20 | 2.00 | 2.00 | 1.80@ 2.25 |
| Big Seam mine run | Birmingham | 1.80 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.00 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block‡ | Chicago | 2.10 | 2.45 | 2.45 | 2.30@ 2.65 |
| S. E. Ky. mine run | Chicago | 1.50 | 1.70 | 1.70 | 1.60@ 1.85 |
| S. E. Ky. block‡ | Louisville | 2.10 | 2.10 | 2.10 | **2.00@ 2.50** |
| S. E. Ky. mine run | Louisville | 1.55 | 1.55 | 1.55 | *1.35@ 1.50* |
| S. E. Ky. screenings | Louisville | .95 | 1.10 | 1.10 | *1.00@ 1.15* |
| S. E. Ky. block‡ | Cincinnati | 2.50 | 2.30 | 2.25 | **2.25@ 2.50** |
| S. E. Ky. mine run | Cincinnati | 1.45 | 1.50 | 1.55 | *1.25@ 1.50* |
| S. E. Ky. screenings | Cincinnati | .90 | 1.10 | 1.15 | *1.00@ 1.25* |
| Kansas lump | Kansas City | 4.50 | 4.00 | 4.00 | 4.00 |
| Kansas mine run | Kansas City | 3.50 | 3.00 | 3.00 | 3.00 |
| Kansas screenings | Kansas City | 2.50 | 2.50 | 2.50 | 2.50 |

* Gross tons, f.o.b. vessel, Hampton Roads.

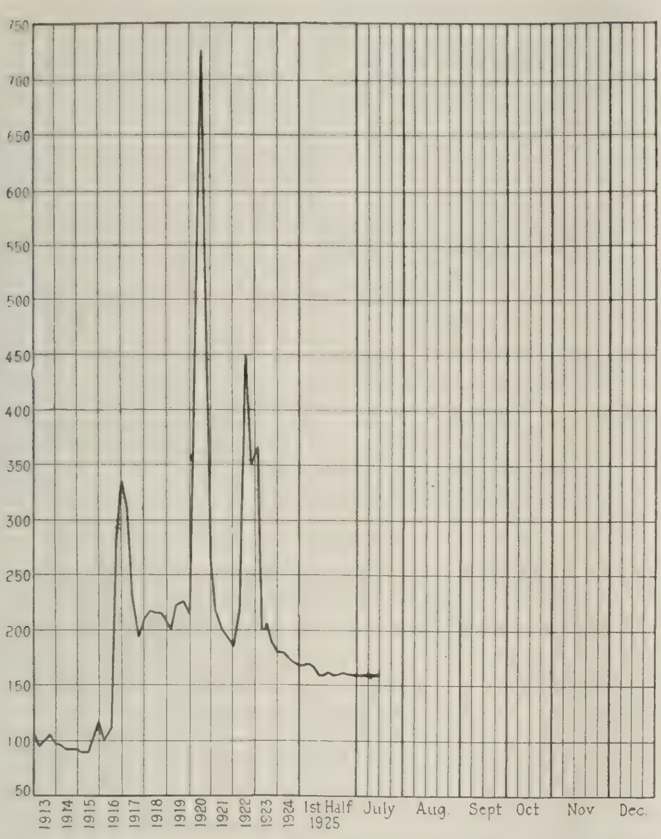
† Advances over previous week shown in **heavy type**; declines in *italics*.

‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | July 14, 1924 | | July 6, 1925 | | July 13, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | .......... | $8.00@$8.95 | .......... | $8.15@$8.80 | .......... | $8.15@$8.80 |
| Broken | Philadelphia | 2.39 | .......... | 8.80@ 8.95 | .......... | 8.70 | .......... | 8.70 |
| Egg | New York | 2.34 | $8.75@$9.00 | 8.55@ 8.95 | $8.50@$8.75 | 8.55@ 8.80 | **$8.60@$8.75** | 8.55@ 8.80 |
| Egg | Philadelphia | 2.39 | 8.90@ 9.60 | 8.90@ 8.95 | 8.80@ 9.40 | 8.60@ 8.80 | 8.80@ 9.40 | 8.60@ 8.80 |
| Egg | Chicago* | 5.06 | 7.99@ 8.10 | 7.94@ 8.00 | 7.86@ 8.50 | 7.54@ 8.28 | 7.86@ 8.50 | 7.54@ 8.28 |
| Stove | New York | 2.34 | 9.00@ 9.25 | 8.55@ 9.20 | 8.75@ 9.25 | 9.05@ 9.30 | **9.00@ 9.35** | 9.05@ 9.30 |
| Stove | Philadelphia | 2.39 | 9.25@ 9.90 | 8.95@ 9.10 | 9.40@ 9.75 | 9.05@ 9.20 | 9.40@ 9.75 | 9.05@ 9.20 |
| Stove | Chicago* | 5.06 | 8.30@ 8.40 | 8.24@ 8.34 | 8.22@ 8.70 | 8.02@ 8.20 | 8.22@ 8.70 | 8.02@ 8.20 |
| Chestnut | New York | 2.34 | 8.60@ 9.00 | 8.55@ 9.05 | 8.25@ 8.50 | 8.55@ 8.80 | 8.25@ 8.60 | 8.55@ 8.80 |
| Chestnut | Philadelphia | 2.39 | 8.75@ 9.70 | 8.90@ 8.95 | 8.80@ 9.65 | 8.70@ 8.80 | 8.80@ 9.65 | 8.70@ 8.80 |
| Chestnut | Chicago* | 5.06 | 8.08@ 8.23 | 8.18@ 8.24 | 8.14@ 8.35 | 7.79@ 8.10 | 8.14@ 8.35 | 7.79@ 8.10 |
| Pea | New York | 2.22 | 4.50@ 5.25 | 5.50@ 6.00 | 4.75@ 5.50 | 5.00@ 5.80 | 5.00@ 5.50 | 5.00@ 5.80 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | 5.50@ 5.75 | 5.00@ 5.40 | 5.50@ 5.75 | 5.00@ 5.40 |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 5.91 | 4.91@ 5.36 | 4.69@ 5.00 | 4.91@ 5.36 | 4.69@ 5.00 |
| Buckwheat No. 1 | New York | 2.22 | 2.00@ 2.50 | 3.00@ 3.15 | 2.00@ 2.40 | 2.50 | **2.00@ 2.50** | 2.50 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | 2.15@ 2.75 | 2.50 | 2.15@ 2.75 | 2.50 |
| Rice | New York | 2.22 | 1.50@ 2.15 | 2.00@ 2.25 | 1.75@ 2.00 | 2.00 | 1.75@ 2.00 | 2.00 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | 1.85@ 2.00 | 2.00 | 1.85@ 2.00 | 2.00 |
| Barley | New York | 2.22 | 1.00@ 1.50 | 1.50 | 1.35@ 1.50 | 1.50 | 1.35@ 1.50 | 1.50 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | 1.40@ 1.50 | 1.50 | 1.40@ 1.50 | 1.50 |
| Birdseye | New York | 2.22 | 1.10@ 1.50 | 1.60 | 1.50@ 1.65 | 1.60 | *1.35@ 1.60* | 1.60 |

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1952 | | | 1924 |
|---|---|---|---|---|
| | July 13 | July 6 | June 29 | July 14 |
| Index | 160 | 160 | 160 | 162 |
| Weighted averaged price | $1.93 | $1.94 | $1.94 | $1.96 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

lin County domestic sizes will be increased on Aug. 1 as per circulars mailed out this week. Lump and egg will be $3; No. 1 nut, $2.75. In the Duquoin field conditions are unchanged. A couple of mines are getting a few days a week and the others are idle, and every mine has "no bills" on track. In the Mount Olive field conditions are unusually quiet. A little railroad coal is moving out and some mine-run is being crushed. In the Standard district a few mines are working a little and they have a lot of unbilled coal on hand, except screenings, and there is no unusual demand for these.

The St. Louis retail trade continues quiet—practically nothing being delivered. The most noticeable decrease is in the higher grade coals such as anthracite, smokeless and Arkansas as well as coke. The higher grade Illinois coals are practically at a standstill and only the cheap coals are moving on summer apartment business, and this is going at a loss. There is no indication that the situation will show much improvement in the next few weeks. Wagon-load steam is unusually quiet and there is no real activity in carload steam. Country domestic continues quiet and country steam is difficult to find. There is no change in prices.

### Kentucky Movement Heavier

Louisville shippers report better inquiry, but no actual increase in business as a result of the threatened anthracite strike. General coal movement from Kentucky appears to be a trifle better than it had been. Western Kentucky has been offering a larger supply of screenings, but general prices are far from satisfactory. Screenings are reported selling as low as 90c., while the top on best block coal is said to be around $1.60.

Eastern Kentucky is getting a good movement and has been able to maintain screenings at $1, with best block at $2@$2.25, and specialty coals selling all the way from $2.25 to as high as $3. Steam coal is moving well as a result of industries and railroads being busy. Domestic coal is starting to move a little better and lake movement is the best that eastern Kentucky has ever handled.

It is reported that a good many eastern Kentucky mines are running full. Several companies in the Elkhorn fields are adding long strings of miners' houses and boarding houses, putting on more men, and increasing tonnages. Western Kentucky strip mines are reported at about capacity, but shaft mines are operating one to three days a week.

### Northwest Industrial Demand Not Dead

Trade at the head of the lakes is still dead, but there is some sign of life in industrial demand. Salesmen are being kept on the road, but are doing nothing but spot business. All are waiting for future developments in the mining business.

When bids were opened in Virginia, Minn., for 20,000 tons of splint screenings two of the dock companies and three local dealers all quoted at the market, $4. It is thought the contract will be divided.

A new schedule of rates between Kentucky mines and Wisconsin, Minnesota, Iowa and North and South Dakota which is to go into effect July 19 will raise the rate on Pocahontas into the Twin Cities and will give the docks the advantage of an additional 25c. a ton.

Prices are steady, with the exception of Pocohontas lump, which is now $7 at the dock.

Figures on shipments from the docks since the first of the year disclose that 95,214 cars went out during the first six months of this year, whereas last year 99,503 cars were shipped. In June 11,955 cars were shipped from the docks. This compares with 13,401 cars in June of last year and 12,302 cars in March of this year.

Forty-two cargoes were received at the local docks last week, as compared with 51 the week before. Of these, seven were hard coal. Eleven cargoes are reported on the way from lower lake ports, of which one is anthracite.

Receipts at the docks for the first six months of the year came to 1,420,556 tons above the first six months of 1924, according to figures of the District Engineer's office. There was an increase of 214,908 tons in hard coal and of 1,205,648 in soft coal. During last month 151,939 tons of hard coal and 1,295,190 tons of soft coal was received. This brings the total for the first six months to 537,317 tons of soft coal and 2,871,537 tons of soft coal, a grand total of 3,408,854 tons.

The coal trade in Milwaukee is a little better than it has been, but, considering the strike outlook at the hard-coal mines, the consumers in this section are rather apathetic. Dealers report from 30 to 50 per cent less coal in household bins at the present time than on the average in July. The docks are well supplied, but managers yearn for a demand that will make room for further receipts toward carrying them through the winter of 1925-26.

Receipts by cargo up to July 1 total 311,355 tons of anthracite and 805,018 tons of bituminous coal—an aggregate of 1,116,373 tons. Up to the same date of 1924 the receipts were 281,138 tons of anthracite and 586,612 tons of bituminous coal—867,750 tons in all. Receipts for July of this year, up to the 9th, total 94,546 tons—18,500 tons of anthracite and 76,046 tons of bituminous coal. All-rail receipts at Milwaukee during June were 4,320 tons of anthracite and 29,855 tons of bituminous coal.

### Southwest Prepares for Livelier Market

Conditions in the Southwest have changed little since last week. There is a light threshing and school demand, but activity is increasing in the field in preparation for the livelier market expected the latter part of this month and next. There has been no change in the Kansas shaft-coal market, but that for Kansas shovel is a little firmer at $3@$3.50 for lump, $3@$3.25 for nut, and $2.50 for screenings and crushed mine-run, the same price as is asked for shaft screenings.

Conditions are unchanged in the Colorado coal business. Mines are operating about two days a week. The operators do not look forward to any change for the better until the last week in July in preparation for abnormal movement on account of the rate reductions which go into effect Aug. 4. Prices have undergone no change.

The Utah trade describes the coal market as a little duller than it has been at this time of the year for some time. This is explained by the fact that no storage rates have been offered this year. Everyone is still convinced that storage rates are not worth while. Industrials outside of the mines and smelters are taking very little coal. Leading operators say they are producing just about enough slack to supply the demand. Dealers other than the mine-owned yards are taking no storage coal. There are quite a few "no-bill" cars on the tracks, consisting of larger sizes of coal. Working time is around two days a week. The labor and car situations are good.

### Cincinnati Situation Puzzling

The Cincinnati market continues to have difficulty in getting its bearings. Mine-run, which showed signs of strength, after an advance of 10c.@15c. has fallen back almost to the status of the last week in June. Domestic is still in the ruck, and while slack still holds at $1.10@$1.15 it does not carry with it the assurance it did last week.

The tonnage movement continues steady and strong, though some embargoes have been imposed by the Baltimore & Ohio against Toledo shipments, but this has caused no tremendous backing up of loads. Country dealers and retailers have by no means responded to the anthracite situation.

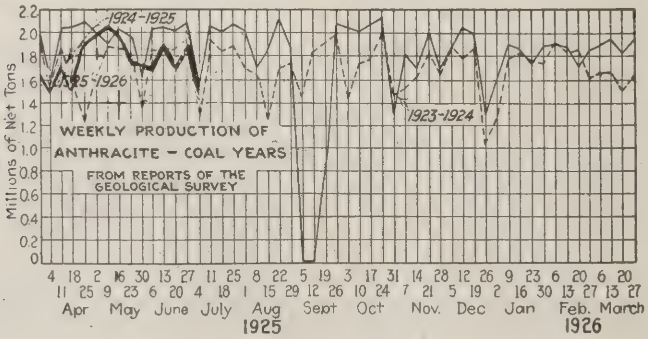
In smokeless the situation is much the same. Only one firm is quoting July deliveries of lump at $2.75, the rest of the standard people making the basis $3. Egg is getting most of the attention, being quoted $2.25@$2.50, with nut at $2.25. Mine-run jogs along with a slightly better feeling; there are practically no $1.75 quotations, most of the New River and Pocahontas firms holding for $2. Screenings have dropped back to $1.25.

Heavy rains have interfered with barge movement on the river but are a blessing in that they will hold the water to a level that will permit free movement for some time. The movement is running here and down-the-river ports to 12,000 to 15,000 tons a week.

### Domestic Trade Increasing at Columbus

At Columbus domestic trade is showing more activity in all directions and producers as well as wholesalers believe that domestic trade will show a considerable increase during the remainder of July. Retailers are beginning to be anxious as to stocks, which are low. Strength is appearing in many lines of domestic coal, particularly in smokeless and splints. Advances in prices are looked for around the middle of the month.

Steam trade is about normal with only a few contracts being made. The larger consumers are still content to buy on the open market rather than enter into agreements, but with reserves rapidly decreasing it is believed that better buying will develop soon. Railroads are taking a considerable tonnage and public utilities also are good buyers. School coal is moving and proposals for tonnage for municipalities and public institutions are being asked for. Country dealers are placing small orders to take care of the threshing trade in farming sections. On the whole the steam trade shows a better tone although the volume of business has not increased to any marked degree. It is believed that the worst of the slump is over, however, and that August will show much better business in every way. Lake trade is progressing satisfactorily with some tonnage going from Ohio mines. Railroads leading to the lower lake ports are crowded with coal trains.



Production in the Pomeroy field has increased owing to the opening of additional mines on the 1917 wage scale.

The eastern Ohio market, so far as demand is concerned, has suffered another sinking spell and activity in orders or inquiries is almost totally absent. Lagging industry, coupled with hand to mouth buying for current needs only has exerted undue pressure upon market tone, and this is keenly felt in view of the small tonnage being shipped from Ohio mines in the Lake trade.

However, slow demand has in no wise affected spot prices, as operators are unable to cut any further. Competition is keen with stripping coal and non-union coal from the South in most all the industrial centers, but prices in many instances are already below the actual cost of production at Ohio mines under the union wage scale. Slack and screenings are scarce and the spot prices thereon are 5c. per ton higher than a week ago. This is due to the small amount of these grades being produced.

The week ending July 4 witnessed the lowest production in this field of any week in several years. Total output was only 183,000 tons for the five workdays, or about 31 per cent of potential capacity.

### Prospects Brighter at Pittsburgh

The Pittsburgh coal market is described in some quarters as quieter still but this is regarded as practically impossible. There is no open market inquiry of any consequence except for slack, and occasionally for gas nut. Other business is done between consumers and their regular sources of supply with but little negotiating, prices having long ago been shaken out so thoroughly that there is little to talk about. General prospects as to consumption of coal have improved. The steel industry has had scarcely more than half as much decrease in production since the March peak as occurred a year ago.

Another week has passed without any definite developments as to mines in the district reopening at a reduction from the union scale, and there is no sign that anything along this line will occur in the near future.

The Buffalo market is weak and unsteady, some offices having closed because they cannot be maintained at a profit. There is not quite as much complaint of West Virginia encroachment as there was. Certain Allegheny Valley and other Pennsylvania operators, who have lately started up under reduced miners' wages, say that they can compete with West Virginia and in fact they are obliged to if they would stay in business.

The Canadian trade is not in good condition. So many complications have come up that the expected advantage from the giving up of the freight-prepayment rule has about been lost. There is no change in the price situation.

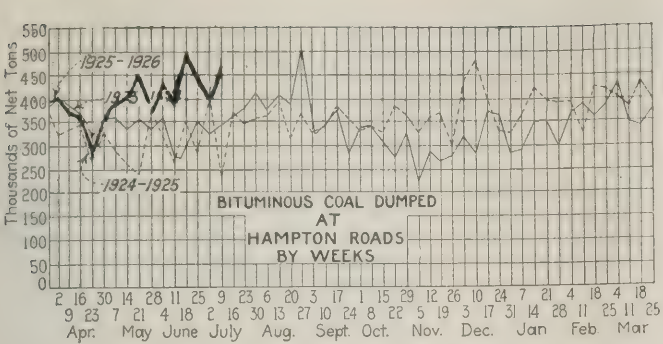
As a result of the predictions of an anthracite strike in the fall, Toronto householders have been laying in large stocks of coal, dealers having been literally swamped with orders for the past two weeks. With the exception of stove coal, supplies are plentiful, and there is little difficulty in filling orders. Prices remain unchanged, as follows: Anthracite, $15; Welsh anthracite, $16.50; Pennsylvania smokeless, $5.85; steam lump, $6.40; slack, $5.60; coke, $12.

### Firmer Front in New England

The trade in New England has the impression the market is in rather better form than had been the case for several weeks. Less coal appears to be sent forward to the piers on consignment, and while no new buying has materialized there seem fewer soft spots than have been characteristic hitherto. Perhaps part of the reduced output is because of the holiday, but several of the Hampton Roads agencies appear to have adopted a firmer attitude toward sales at less than the $4.25@$4.40 range that is their present aim.

Only scattering inquiry has developed thus far for spot coal f.o.b. vessels at Norfolk and Newport News for coastwise delivery. Volume shipments are confined to contracts, and there are no indications now of further contract tonnage being closed for the next few weeks.

On cars at Mystic Wharf, Boston, as well as at Providence and Portland the situation is somewhat better in hand, but there are still openings for the purchase of either spot coal or for deliveries through September and October at levels that are about the same as those that have prevailed since early spring. A range of $5.20@$5.25 is by no means impossible, especially at Boston, but among the smaller shippers there is a more determined effort to



realize \$5.30@\$5.35. While \$5.40 is mentioned we have heard of no actual sale at this figure, unless possibly for extremely small tonnages.

There also is a firmer attitude on the part of retail dealers in this territory, who up to July 1 seemed to throw caution to the winds in their desire to place coal in anticipation of constant arrivals on seasonal arrangements. It is understood that \$7.50 per net ton delivered is the present retail basis in Boston, although a large proportion of the year's tonnage was definitely sold on a much lower level.

On Pennsylvania coals all-rail there is no news. The situation drags along with no relief in sight. A few large shippers are struggling to increase output with a view to reducing overhead, but on present mining costs orders come hard.

### Freer Movement at New York

Bituminous coal users at New York are watching developments in the hard-coal situation, wondering how long the expected suspension will last and to what extent it will affect the soft-coal industry.

There is a freer movement of coal, but no changes in prices, so far as classified coals are concerned. Quality coals frequently are offered at from 15c. to 20c. below current quotations for the better grades, while individual producers of the best grades frequently quote 10c. higher than the maximum market quotations for those classes of coal.

Buyers here are not anxious to increase their standing orders. Contract coals are moving freely, but free coals are hard to move unless an attractive offer is made. There is very little of Pool 1 coal offered at the local tidewater piers.

At Philadelphia the looked-for improvement after July 1 is slow to present itself. There are days now when improvement is noticeable, but it quickly vanishes. It does seem at times as if the moderate buyer is beginning to look to his supplies and is ordering somewhat better than ordinarily. Stockpiles around all plants, except the utilities, however, are meager for this season.

Even if there is a hard-coal suspension it will take a long time to affect soft coal, as the anthracite companies have millions of tons in storage. The threat of a general strike, including soft coal, is looked upon as mere talk.

Tide conditions are unchanged. The only expectation of better business lies in the direction of bunkering.

The soft-coal industry at Baltimore is largely living for the future. There are promising signs for the near future in the home field and a strong expectation that the export and bunker business is due for an increase. The expectations of improvement are based on expected troubles in the coal fields here and in Great Britain.

### Birmingham Market Featureless

The Birmingham market is devoid of any features of special interest. Inquiry for spot domestic is said to be slightly better than it was in June; more coal is moving on contracts and mines are managing to book enough business to move the surplus high-grade coals without unreasonable delay, but much solicitation is required.

Steam demand is just about as it has been for some weeks as a whole. Some agents and brokers report inquiry as showing a little strength as compared with last month, and production records would seem to indicate a slight gain in movement of commercial coal, but buying for the most part is still on a hand-to-mouth basis. Prospects are said to be good for further displacement of oil in favor of coal on the part of industries in this territory. There is no change in bunker trade, consumption in this direction being about normal for the season. Prices are unchanged.

### Strike Gossip Stiffens Anthracite

Strike talk has strengthened the anthracite market at New York. Demand has increased and independent coals are bringing better prices than last week. Preparations are under way for increasing the quantity of Welsh coal imported into this market by the establishment of agencies with local houses. It is believed that the coal can be delivered at prices below those charged for Pennsylvania anthracite.

Operators of small mines admit that if market conditions had not improved during the last week or ten days they would have been obliged either to curtail output or suspend operations entirely

Stove is the size most asked for and egg is in fair shape. Chestnut continues to drag along, with pea coal increasing in demand, especially along the line. Rice and barley are being stocked in large quantities by the smaller operators. No. 1 buckwheat is in fair condition.

The Philadelphia hard-coal situation fails to improve, and the retail trade is just dragging along. There is some increase of buying due to the strike threat, but it is far less than was expected. Retail dealers seem more inclined to buy, although their difficulty is to find room for additional coal. Occasionally blocks of pea and nut sell a little off price, but as a rule operators are shutting down for a day or two rather than cut prices. Of course, company producers are holding to their schedules.

Pea has become draggy during the past week and chestnut is at its heels. Stove is in strongest demand. Egg is moving only fairly well. Steam sizes are troublesome and the independents are willing to take a cut on both buckwheat and rice to move them. Barley is perhaps in better demand.

Although the air is full of rumors regarding the likelihood of a strike in the anthracite regions there is no general response from Baltimore consumers in the matter of storing against the needs of the coming fall and winter. There are some exceptions, such as the award of a contract by the city for 6,000 tons of hard coal for immediate delivery. Consumers seem to wait until the last minute before ordering, and this condition has become more pronounced with each raise in the price.

The Buffalo anthracite trade is about as quiet as it ever is at this time of the year. As a rule consumers are not paying much attention to the prospect of a fall strike, which a good many people regard as pretty certain to take place.

The coke trade has not shown much life lately and it will be quiet till the fall coolness starts the house furnaces up. Then, if prices remain as low as they are, the trade ought to show a good activity.

The lake trade is quiet. For June the shipments were only 296,400 tons, as against 383,900 tons in June last season, and for the season to July the shipments were 986,964 tons, as against 854,000 tons to the same date last season.

### Connellsville Coke Market Drags

The Connellsville coke trade is not at a settled gait until improvement comes in the iron trade. There have been no developments in the past week and there can hardly be any in the future, until some change occurs in the position of consumers. Most of the blast furnaces that use purchased Connellsville coke are out and those now in will certainly stay.

Contract furnace coke remains nominal at \$3@\$3.25, there being no negotiations. Spot furnace coke remains at \$2.75@\$2.85, on the basis of small lot buying by non-metallurgical consumers.

Spot foundry coke is moving slowly, at \$3.75@\$4.25 as the general range, hitherto quoted, but with sales chiefly at \$3.75@\$4. There hardly will be more activity until foundry operations increase.

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## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended June 27, 1925 | 991,341 | 159,473 |
| Previous week | 982,600 | 153,663 |
| Week ended June 28, 1924 | 908,251 | 144,753 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| June 30, 1925 | 307,495 | 109,404 | | |
| June 22, 1925 | 308,825 | 111,820 | | |
| June 30, 1924 | 356,389 | 162,343 | | |

# Foreign Market And Export News

## British Coal Market Still Dull Despite Possible Tie-Up

Events appear to be moving rather rapidly in the Welsh coal industry. At the end of June the employers gave notice of the termination of the national wage agreement with the miners on July 31. Therefore South Wales has entered an anxious period, and although for several weeks past conditions have been very depressed and trade has not shown any revival, much may happen in the course of the next month.

A rise to the highest point for eighteen months in South American freight rates impedes business in this direction and, with growing stocks and consequent tying up of rolling stock, the collieries are working irregularly. The low level of the lira and franc contribute to making a negligible new inquiry from France and Italy. Spain is the busiest spot at the moment, although buying is below the average. Coaling depots are holding off.

The Newcastle coal trade was not upset so much as usual by the race week holidays, there being little to upset. In the coal fields there was less dislocation, too, as so many miners are idle in any case. Pits continue to close down, and though two of the big groups which were expected to suspend have been able to carry on it is only on a day-to-day notice system. Prices on all grades are substantially unchanged, but in no case is there a testing in the market. Inquiries are scarce and mainly on account of small Continental gas concerns for small parcels.

Output by British collieries in the week ended June 27, a cable to *Coal Age* states, totaled 4,420,000 tons, compared with 4,465,000 tons in the preceding week.

### Hampton Roads Trade Reacts To Strike Rumors

Business at Hampton Roads last week began to react slightly to rumors of the impending strike. The trade was reluctant to sell in advance of twenty days deliveries, although mines in this territory were not increasing their production in anticipation of a possible walkout.

Strike rumors had not served to strengthen prices, however. Some fairly heavy foreign movement took place during the week, but was regarded as simply a flurry which frequently occurs. The tone of the market was fairly strong.

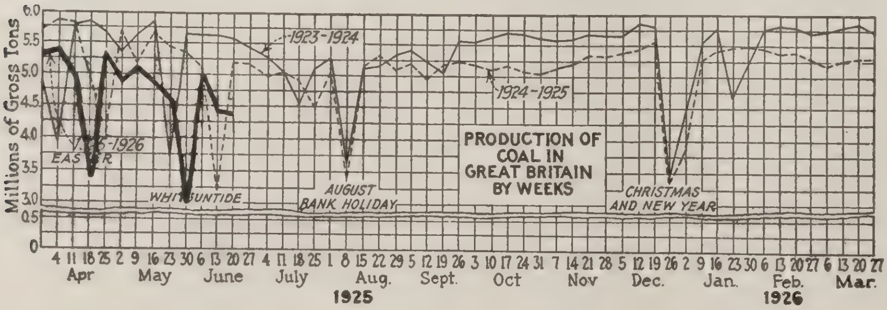
### Industrial Demand Subnormal In French Market

The French coal market is weaker. Demand from power plants, metallurgical works, certain branches of the textile industry and glass works are below normal. Sugar factories alone seem decided upon increasing their orders, in view of the autumn campaign. Owing to these conditions, prices for industrial coals, although not officially changed, are subject to concessions. Foreign competition also obliges French collieries to show some conciliation, in order not to lose business.

Import licenses on German fuels have not yet been re-established and the Nord, Etat and Orleans railways have objected to granting reduced freight tariffs from the Nord and Pas-de-Calais to the Western region. The Orleans and Midi railways, however, have agreed to make concessions for the transport of coal from the center region toward Bordeaux and the ocean side.

The coal output in May was 3,829,000 tons for twenty-four working days, against 3,919,000 tons in April for twenty-five working days. The daily output in May was 159,530 tons for 310,686 persons employed, as against 156,760 tons in April for 312,381 persons employed, and 136,147 tons, the 1913 monthly average for 203,208 persons employed.

The May coke output was 255,000 tons, which means that for the first time the prewar average of 245,000 tons in 1913 has been exceeded. It should be noted that the mines in northern France, which were wrecked when flooded by the Germans during the war, are now producing more than before the war. The daily output of such mines is 95,000 tons, which is 3,708 tons greater than the daily average in 1913.



### Export Clearances, Week Ended July 11, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For West Africa: | |
| Ital. Str. Fortunato, for Dakar | 6,109 |
| For France: | |
| Fr. Str. P. L. M. 15, for Rouen | 5,583 |
| Nor. Str. Hellen, for Marseilles | 6,209 |
| For Italy: | |
| Span. Str. Astor Mendi, for Porto Ferrajo | 6,854 |
| Ital. Str. Valsavoia, for Porto Ferrajo | 7,700 |
| Ital. Str. Clara Cannis, for Venice | 4,225 |
| For Nova Scotia: | |
| Nor. Str. Factor, for Halifax | 2,273 |
| Br. Str. Trickenham, for Sydney | 7,477 |
| For Danish West Indies: | |
| Nor. Str. Annavore, for Curacao | 5,006 |
| For New Brunswick: | |
| Dan. Str. Christiansborg, for St. John | 4,679 |
| Nor. Str. Speed, for St. John | 1,520 |
| For Canada: | |
| Nor. Str. Thorsdal, for Three Rivers | 3,156 |
| Ital. Str. Monte Nevoso, for Montreal | 7,005 |
| Br. Str. Wabana, for Quebec | 7,406 |
| Nor. Str. Cubano, for Montreal | 7,321 |
| Br. Str. Kamouraska, for Quebec | 7,164 |
| Br. Str. Daghild, for Quebec | 11,349 |
| For Mexico: | |
| Nor. Str. Alaska, for Santa Rosalia | 2,510 |
| For Brazil: | |
| Br. Str. Dovenby Hall, for Rio de Janeiro | 3,632 |
| Br. Str. Induna, for Rio de Janeiro | 7,000 |
| Br. Str. Pensilva, for Pernambuco | 6,136 |
| For Cuba: | |
| Nor. Str. Askeladden, for Havana | 3,792 |
| Br. Str. Berwindmoor, for Havana | 9,471 |
| For Dutch Guiana: | |
| Amer. Schr. Emerett, for Paramaribo | 962 |
| For Argentina: | |
| Swed. Str. Sagoland, for Puerto La Plata | 7,995 |
| For Newfoundland: | |
| Br. Str. Shearbrook, for St. Johns | 2,471 |
| For Canal Zone: | |
| Nor. Str. Frem, for Cristobal | 300 |

FROM BALTIMORE

| | Tons |
|---|---|
| For Cuba: | |
| Nor. Str. Wascana | 4,000 |
| For Chile: | |
| Br. Str. Apsley Hall, for Antofagasta (coke) | 1.467 |

### Hampton Roads Pier Situation

| | July 2 | July 9 |
|---|---|---|
| N. & W. Piers, Lamberts Pt.: | | |
| Cars on hand | 1,839 | 1,368 |
| Tons on hand | 117,458 | 84,656 |
| Tons dumped for week | 111,958 | 130,388 |
| Tonnage waiting | 20,000 | 22,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 908 | 787 |
| Tons on hand | 67,050 | 51,000 |
| Tons dumped for week | 85,150 | 91,676 |
| Tonnage waiting | 5,160 | 2,891 |
| C.&O. Piers, Newport News: | | |
| Cars on hand | 4,648 | 2,391 |
| Tons on hand | 186,725 | 114,065 |
| Tons dumped for week | 161,002 | 196,511 |
| Tonnage waiting | 6,990 | 12,200 |

### Pier and Bunker Prices, Gross Tons

PIERS

| | July 3 | July 10† |
|---|---|---|
| Pool 1, New York | $5.40@$5.70 | *$5.35@$5.60* |
| Pool 9, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 10, New York | 4.50@ 4.60 | 4.50@ 4.60 |
| Pool 11, New York | 4.25@ 4.50 | 4.25@ 4.50 |
| Pool 9, Philadelphia | 4.65@ 4.90 | 4.65@ 4.90 |
| Pool 10, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 11, Philadelphia | 4.25@ 4.30 | 4.25@ 4.30 |
| Pool 1, Hamp. Roads | 4.20 | **4.25** |
| Pool 2, Hamp. Roads | 4.08 | **4.10** |
| Pools 5-6-7, Hamp. Rds. | 4.00 | 4.00 |

BUNKERS

| | July 3 | July 10† |
|---|---|---|
| Pool 1, New York | $5.65@$5.95 | *$5.60@$5.85* |
| Pool 9, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 10, New York | 4.75@ 4.85 | 4.75@ 4.85 |
| Pool 11, New York | 4.50@ 4.75 | 4.50@ 4.75 |
| Pool 9, Philadelphia | 4.80@ 5.05 | 4.80@ 5.05 |
| Pool 10, Philadelphia | 4.60@ 4.80 | 4.60@ 4.80 |
| Pool 11, Philadelphia | 4.45@ 4.65 | 4.45@ 4.65 |
| Pool 1, Hamp. Roads | 4.30 | 4.30 |
| Pool 2, Hamp. Roads | 4.15 | **4.20** |
| Pools 5-6-7, Hamp. Rds. | 4.10 | 4.10 |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | July 4 | July 11† |
|---|---|---|
| Admiralty, large | 24s.6d.@26s. | **26s.6d.** |
| Steam smalls | 15s.6d. | *15s.@15s.6d.* |
| Newcastle: | | |
| Best steams | 17s.@17s.6d. | **17s.@18s.** |
| Best gas | 18s.6d. | *18s.* |
| Best bunkers | 15s.@16s.3d. | **17s.@18s.** |

† Advances over previous week shown in **heavy type**; decline in *italics*.

# News Items From Field and Trade

## ALABAMA

Judge Elbert H. Gary, chairman of the board of directors of the United States Steel Corporation, is scheduled to arrive in Birmingham this week for a visit of several weeks. Developments of importance are expected to follow his trip, which will be his third trip to the district in the past three months, during which he has closely inspected the properties of the Tennessee Coal, Iron & Railroad Co. and its subsidiaries.

The Alabama By-Products Corporation, Birmingham, has been awarded an order for a large amount of coal to be consumed by the American Sugar Refining Co. in the New Orleans territory, replacing oil in the Louisiana sugar fields it is announced. The contract will require approximately 700 tons per day, which will be shipped from the Alabama fields by the Warrior River barge line.

The Woodward Iron Co., Woodward, of which Frank H. Crockard is president, is sinking a shaft, air shaft and slope at the new Crockard mine, near Mulga. Dormitories and a dining hall are under construction and hoisting and power house, boiler house, machine shop and blacksmith shop are to be built. The mine will be served by a 4½-mile switch, now under construction, and the output will go to the washery at Woodward, to be manufactured into coke for use in the manufacture of pig iron for the company.

The State Board of Mine Examiners will hold its mid-year session in the offices of Chief Mine Inspectator Charles H. Nesbitt July 27-30 for the consideration of applications for certificates of competency to hold positions as mine foremen and firebosses in Alabama coal mines. These examinations are held semi-annually in January and July.

## ARKANSAS

Mines of the Fort Smith-Spadra Coal Co. are now operating on a union basis, according to William Pendergrast, manager. Recently the management announced that the 1917 wage scale would be adopted and an explanation of the recent change was refused. The mines are said to be running at practically normal capacity since the readoption of the 1924 contract. Previously miners in the local field and from Denning picketed the mines and paraded in automobiles in the streets of Alix, Denning and Altus. Four mines are running open shop in the union field and it is reported union miners are attempting reorganization of these mines under the 1924 wage agreement.

## COLORADO

The State Industrial Commission on June 30 handed down an award allowing the Leyden Coal Co., operating mines in Jefferson County, to reduce the wages of its miners to the 1919 scale, amounting to a cut of 20 per cent. The company, along with numerous other companies operating in the northern Colorado field, had asked permission to reduce to the 1917 scale—about a 30 per cent cut. The miners protested and the matter went to hearing before the commission. The award is identical with those made in ten other cases in the northern field.

Colorado coal mines produced 604,393 tons in May and 3,943,374 tons during the first five months of this year, according to the monthly report of James Dalrymple, state coal mine inspector. The report shows that for the first five months of 1925 there has been a decrease in coal production in Colorado from the figure for the same period of 1924, which was 4,403,647, or a decline for 1925 of 460,273 tons. In May, Las Animas County led in coal output with a total of 243,832 tons.

## ILLINOIS

The Scott-Smith Coal Co., of St. Louis, operating a large strip mine at Duquoin, has sold its entire holdings to a number of business men of Duquoin, headed by James McSherry. The mine was owned by E. J. and Thomas Scott, both of St. Louis, and was managed by M. D. Maguire, of Duquoin.

The Nason Coal Co. is operating its mine at Nason full time, producing about two thousand tons of coal per day. The payroll is running from $40,000 to $50,000 every two weeks. The company recently received the contract for supplying the city of Woodstock with coal after that city had completed the chemical analysis of the coals of the four lowest competitive bidders.

Edwin H. Conrades has resigned as president of the Merchants and Manufacturers Investment Co., holding company for the Donk Brothers properties. He has been succeeded by Erle S. Ormsby, who was vice-president. It is understood that the holding company is to dissolve and that the stockholders will exchange their holdings for Donk Brothers Coal & Coke Co. stock, share for share. The holding company, capitalized at $1,000,000, was formed to handle the various Donk Brothers properties, which included approximately 30,000 acres and three railroads. The railroads were sold several months ago. The stock of the Donk Brothers Coal & Coke Co. is said to have a book value of approximately $325 a share.

The Chicago, Wilmington & Franklin Coal Co. has announced plans for opening Orient Mine No. 1, at Orient, for the balance of the year. The mine, one of the biggest producers in the state, has been closed down for a month or six weeks.

A. D. Lewis, formerly assistant director of the State Department of Mines and Minerals of Illinois, has been named as director, succeeding Martin Bolt, who died June 23. Governor Small made the appointment on July 3. Mr. Lewis is a brother of John L. Lewis, president of the United Mine Workers.

The Astoria Fuel Co., Astoria, has resumed mining operations. This is known as the Bucher mine.

The Fairbury Coal Co., Fairbury, operating the west mine at that town, has abandoned the workings to the north of the shaft on account of bad roof and low grade of coal and is now driving entries to the southwest into a field where the roof is good and a satisfactory grade of coal obtained. Rooms are being provided for about twenty miners.

A. W. Hinkle has sold his mine near Astoria to John Wherley and Charles Butler, for a consideration of $3,500.

After being unused for several years, the coal mine at Rutland has been leased for a year by August Calvetti and Veness Copp, who will soon place the property in a workable condition.

Mathew O'Donnell will open a new mine on his farm near St. Augustine, where a 4-ft. bed of coal is located only 30 ft. below the surface. Coal was mined there many years ago. This will make the sixth mine to be operated in the vicinity of St. Augustine.

## INDIANA

The Bickett & Shirkie Coal Co., of Terre Haute, has filed a certificate of dissolution with the Secretary of State.

The contract for providing the city schools of Indianapolis with coal for the coming winter, entailing an expenditure of nearly $100,000, has been awarded to the Peoples Coal & Cement Co., of Indianapolis, and the Indianapolis Coal Co. on a joint bid of $5.37

for West Virginia coal. The Allied Coal Co. received the contract for 9,018 tons of Indiana lump at $4.18 and 8,488 tons of screenings at $3.48.

Coal mines in Sullivan County, many of them down since April, are gradually resuming work, and prospects are bright for increased activity in the field. Peerless, one of the best mines in the county, is at work again. Baker mine may start working in the next ten days. Ebbw Vale mine and the mine of the City Coal Co. are working and some of the shafts of the Vandalia Coal Co. are working part time. Glendora and Reliance mines have been working a few days each week all summer and their schedule will be increased soon.

### IOWA

The Pearson Coal Co. has struck a good bed of coal at a depth of 45 ft. at the new coal mine which the company is sinking near Hawleyville.

### KANSAS

The appointment of four members to the State Mine Examining Board was announced by Governor Paulen, July 6. R. A. Gray and Fred Kempster, both of Pittsburg, were reappointed. William Devlin, of Scammon, and John B. Fulton, of Frontenac, will be new members of the board. At a meeting of the four appointees in Pittsburg, July 8, Prof. J. A. Yates, of the State Teachers' College, at Pittsburg, was selected as the fifth member of the board. This will be the fifth year Professor Yates has served in this capacity. Mr. Gray and Mr. Fulton represent the operators, Mr. Kempster and Mr. Devlin, the miners. The first examination by the new board will be in Pittsburg July 18.

J. S. Patton, who has a lease on the Hamilton Coal Co. mine No. 7, near Frontenac, has announced the mine will reopen on a co-operative basis. Every worker in the mine, which ordinarily employs eighty men, will be expected to buy shares in the company, with a maximum of ten shares, par value $100 each, to a man. Each purchaser will be required to pay cash for one share, 25 per cent of his net earnings to be deducted each month until the remainder of his allotment is paid for. In the lease are included 850 acres of coal land. Matt L. Walters, president of district 14, United Mine Workers, has announced that district officers will not sanction the plan.

The Verdigris River Coal Co., controlled by Eastern capital, has obtained options on approximately 31,100 acres of coal lands about four miles southwest of Independent. The coal bed is down about 800 ft. and is thick and of good quality.

The Western Coal & Mining Co., it is reported, will within 30 days begin sinking shafts for two large mines. One will be near Arma in Crawford County while the other will be at Minden, Mo., just across the state line. The former will employ 350 men and the latter 250 after development, but it will be some time next year before the workings are far enough advanced to employ a large force of men. The Western now has seven mines working in this field but two or three of them are using only small shifts and will be worked out by the first of the year.

Mine No. 20 of the Western Coal & Mining Company near Arma, set a new production record for the Kansas field on June 30, when it loaded 1,553 tons of coal. The previous record was 1,529 tons, by the same mine, about a year ago.

The Jackson-Walker Coal & Mining Co. has leased its No. 17 mine, a large shaft near Frontenac, to James Murphy and Samuel Thornberg. The lease is for ten years. Improvements costing $3,000 will be made before the mine is started, late in July. It had been idle since April 1. The new firm will place its coal on the local markets. Leasing this mine leaves the Jackson-Walker without a mine to be operated by itself, all the mines controlled by the company being leased.

### KENTUCKY

Joseph Briscoe, receiver for the Stevens Branch Coal Co., of Alphoretta, has received permission of Judge A. M. J. Cochran of the U. S. District Court for eastern Kentucky to lease this property to a company which will be incorporated under the Kentucky laws and will be composed of gentlemen from that state.

Reports from Pineville and other eastern Kentucky sections show that there has been some interruption to coal mining since July 1 on account of heavy rains and electrical storms, some mines having been flooded as a result of cloudbursts sweeping down valleys, while power lines have been down and in trouble as a result of lightning striking them.

Bloodhounds were responsible for the capture of Howard Childress, charged with an attempt to burn the tipple of the Mary Helen Coal Co., in Harlan County. Officers had to fire into a shack in which he had taken refuge, before he gave himself up.

C. W. Fleming, president of the Elkhorn Coal Corporation, of New York, recently announced at Fleming that his company had let contracts for fifty additional miners' homes at the Wheelwright plant of the company and was considering as many more at the Hemphill mines. Carpenters are now at work on 100 new miners' homes at McRoberts, for the Consolidation Coal Co.

All of the property of the Alma-Thacker Coal Co., which had headquarters in Columbus and which operated three large mines in Pike County, Kentucky, was purchased at receivers' sale June 15 by Attorney D. N. Postlewaite, of Columbus, representing a syndicate which probably will take over the mines and start operations. The property consists of modern equipment for three mines, 100 acres held in fee simple and a lease on approximately 3,000 acres more. The company went into the hands of receivers about a year ago when Robert L. Laylin, of Columbus, and Glenn Deaton, of Kentucky, were named receivers. Mr. Postlewaite bought in the property for $5,000 subject to the approval of the federal court in Kentucky.

Fred G. Hatton, president of Hatton, Brown & Co., Inc., receiver for the Himler Coal Co. of Himlerville, Ky., announces that production at the mines is being steadily increased. Judge Hough, in the federal court at Columbus, ordered the mines to resume operations soon after the receiver was named. About 200 men are employed and it is hoped to have the tonnage brought up to about 1,600 daily soon. The company holds about 3,000 acres of coal lands on a lease. A portion of the tonnage produced is going into the lake trade.

### MISSOURI

The sinking of the shaft at the new coal mine on the Watson Brothers farm, south of Richmond, is again under way after delays due to water. All the water has been pumped out and work resumed. The shaft is now down about 50 ft. It is thought the shaft will have to be sunk about 80 ft. No more trouble is expected from water.

C. H. Krause, vice-president and treasurer of the Willis Coal & Mining Co., of St. Louis, Mo., states that the *Coal Age* report of June 25th that his company had gone into voluntary bankruptcy was incorrect. Instead, the action was an equity receivership brought about by some of the stockholders and creditors of the company for the purpose of protection and conservation of the property "during this time, when the entire coal business in Illinois has been having hard times to contend with."

### MONTANA

Steps are being taken for the formation of the Montana East Belt Coal Co., to operate a property near Great Falls. The trustees will be Edward Reese, George D. Ayers and H. N. Stockett. "The coal is almost anthracite and the best left in the Northwest," said Mr. Reese. "It lies flat and in a property having an area of 1,500 acres. The three coal seams are 6 to 18 ft. thick and separated by streaks of slate an inch thick. The covering is sandstone and the base is fireclay. The covering is 400 ft. in thickness. The coal is above the water level and has been entered by seven tunnels. The Great Northern Ry. and the Anaconda Copper Mining Co. have mined in the district for many years."

### NEW YORK

Percy E. Barbour has announced his resignation as assistant secretary of the Mining Institute of Mining and Metallurgical Engineers and as editor of *Mining and Metallurgy*.

Creditors of the New York & Brooklyn Fuel Co., of 113 Ninth Street, Brooklyn, protested last week to Bankruptcy Referee McDonald in Brooklyn against accepting the $800,000 bid of

Courtesy Bertha-Consumers Co.

**Playground at Rachel Mine**

The Bertha-Consumers Co. does its part in keeping the younger element contented, as is attested by the playground at its Rachel mine, at Rachel, W. Va. Slides, swings and other amusement features are provided. The building in the background is a school maintained by the company.

the Lee Coal Co., of Wilkes-Barre, Pa., and 17 Battery Place, Manhattan, for the company's plant and the $8,000 offer of R. M. Egan & Co., Inc., of 1 Broadway, Manhattan, for 2,000 tons of coal in the plant.

On account of the Maher Collieries Co., of Cleveland, going into a combination, the Buffalo office, opened several years ago by O. E. Southard as resident manager, closed July 15. Mr. Southard may continue the business on his own account.

## OHIO

The attitude of public officials in the Pomeroy field, where the labor situation has been intense recently due to the reopening of several mines and efforts of United Mine Workers officials to call the men out, is strikingly shown in the action taken by Meigs County, O., commissioners, who, July 9, appropriated $2,000 to take care of the salaries of deputy sheriffs appointed to guard properties of the Pittsburgh Coal Co., the Statler Essex Co. and the Great Lakes Mining Co. A tipple of the Pittsburgh Coal Co. was burned in that district more than a week ago.

Armed guards are patroling the substations of the Southern Ohio Power Co., which furnishes electrical energy for the Pomeroy district, following recent disorders between union and nonunion coal mining factions. All undergrowth has been cut away for a considerable distance around the property and powerful lights have been set up on the premises. The company furnishes power to all the mines and other business enterprises.

## PENNSYLVANIA

Lightning on July 10 struck the coal tipple of Montour mine No. 9 of the Pittsburgh Coal Co., 2½ miles northwest of McDonald, and set it on fire. Firemen were unable to check the blaze and the tipple was destroyed with a loss of $100,000. The building was equipped with the most modern machinery, having been built in 1917. It served two shafts. The tipple was more than 500 feet long.

The biennial convention of District 1, United Mine Workers, will be held July 20 in the Wilkes-Barre Y. M. C. A.

Mine No. 2 of the Rosedale Coal Co., located at Poland, the tipple of which was burned several weeks ago, resumed operations on July 7, and on a nonunion basis. Over 50 miners have been employed by the company and loading at the outset was at the rate of about 400 tons a day. It is stated by officials of the company, however, that the mine will be operating in full within a year. When running to capacity the Poland mine has a daily output of about 1,000 tons and employs about 150 men. The mine of the same company at Morgantown, on Scotts Run, is being operated on a full-time basis and independent of any agreement with the union.

As was expected, the board of directors of the Lehigh Valley Coal Co. at its meeting June 30 declared a dividend of $1.25 per share on the certificates of interest in the capital stock to be distributed by the trustees on Aug. 1 to certificate holders of record on July 11, 1925, who have filed affidavit of non-ownership of Lehigh Valley Railroad Co. stock, as provided in the final decree of the U. S. District Court, Southern District of New York, dated Nov. 7, 1923.

The Reading Co. during the month of May, 1925, transported 1,324,784 tons of bituminous coal as compared to 1,285,587 tons in May, 1924.

A public statement that probably will bring an end to the factional disputes in progress for months at the Woodward colliery in Edwardsville of the Glen Alden Coal Co. has been issued by John L. Lewis, international president of the United Mine Workers. Mr. Lewis has declared that local union 1145, Woodward colliery, headed by Adam Dunn, has "the full co-operation of the international organization while it complies with our constitution and contract."

The Ruth Coal Co., of Natrona, has gone into bankruptcy. The first meeting of creditors has been called for July 21. The schedules show assets of $16,340 and liabilities of $29,672.94.

## UTAH

E. E. Jones, superintendent; Joseph Parmley, chief clerk of the Utah Fuel Co. at Castlegate, and other employees of the company in Carbon County, together with a number of other men were on June 30 released from the Carbon County jail on heavy bond to stand trial in connection with the lynching of a negro murderer near Price some weeks ago. The trial is expected to come up in the fall. The men will be charged with first degree murder. The negro's crime was of a particularly savage character and the accused are heroes in the county.

## WEST VIRGINIA

Belief is expressed here that something definite will develop in the $100,000,000 coal merger in northern West Virginia within a short time. Fairmont representatives of the merger interests have been summoned to New York City. It is reported that 60 coal companies in Harrison, Marion and Monongalia counties are interested in the merger.

In the first six months of this year the coal mines of northern West Virginia loaded 9,341,250 net tons compared to 10,205,050 tons in 1924, 14,205,600 tons in 1923, 5,275,200 tons in 1922 and 7,003,850 tons in 1921.

The Mineral States Coal Co. and Richland Marshall Coal Co., of Marshall County, which had been served with notices by Sheriff Fred McNinch that their plants would be closed unless delinquent taxes aggregating $12,000 were paid, appeared in Circuit Court at Moundsville with their attorneys, July 6, and sought permission to continue operation upon the promise to make payment soon. The court granted the request.

C. P. Collins, consulting engineer, announces that he has purchased the interests of the Clarksburg Engineering Co., Inc., with offices at 801-2 Goff Bldg., Clarksburg.

The property of the Smith Pocahontas Coal Co., of Caloric, Wyoming County, for which stockholders refused an offer of $500,000 a few years ago, was sold in front of the court house at Princeton, Mercer County, on July 3, to satisfy a mortgage of $75,000 held by J. C. Pack, of Freeman. Mr. Pack was the only bidder. Stockholders will receive nothing for their stock nor will the holders of other claims. There were few outstanding claims against the company as a matter of fact. General depression in the coal industry and the inability of the company to produce coal at a price that would yield a profit are given as the reasons for the failure of the concern, which is equipped to mine and ship 10,000 tons of coal a month. The holdings of the company are on the main line of the Virginia Ry. and enjoy Eastern and Western railway connections.

Four mines of the Richland Coal Co. in the Panhandle District of West Virginia were ordered closed July 6 by Circuit Court Judge Brennan after the receivers of the company, John P. Arbenz and the Dollar Savings & Trust Co., had filed a petition declaring that the mines could not be operated at a profit at present. The mines, which normally employ about 2,000 men, have been operating with reduced forces since May 1.

In the first quarter of the current year the Island Creek Coal Co. produced about 1,245,000 tons of coal and earned, after reserves for depreciation and depletion and the period's dividend of $1.50 on the nearly 50,000 shares of preferred stock, a sum sufficient to cover the regular dividend of $2 on the 118,801 shares of common, as well as an extra dividend of $1. In the quarter just ended the Island Creek established a new high record for the three months output.

## CANADA

Quiet has latterly prevailed in the Cape Breton strike area. The inquiry into the death of William Davis, the miner who was shot by the police at New Waterford on June 11, was opened before Police Magistrate J. J. Smith on July 7. True bills have been found in the Supreme Court against 21 men concerned in the recent rioting for various offenses, and these cases have been set for trial at the October session of the court. All have been admitted to bail except Jean Jeanoff, of Glace Bay, charged with placing railway ties on the Sydney & Louisburg Ry. line. Operations at the Sydney steel plant of the British Empire Steel Corporation have been greatly curtailed.

E. N. Rhodes, who as the result of the recent provincial election, will soon become Premier of Nova Scotia, speaking at Halifax July 8, promised to take immediate steps to settle the coal strike. "Immediately after I am called upon," he said, "to assume the responsibilities of administering the affairs of this province and having full regard to government duties, I shall be the first to remove myself to Cape Breton and I shall remain there until this strike is settled."

There have been no disturbances at the six mines in Edmonton, Alta., where between 400 and 500 miners who are members of the Edmonton and District Miners Federation are affected by the strike which commenced on July 1. The Chinook mine offered to take back its employees at the old rate pending arrival at a satisfactory settlement, but the men at a meeting held July 2 rejected the proposal because the operators refused to recognize the union. The strikers decided to await the arrival of Fair Wage Officer Harrison, who it is expected will act as mediator between the parties to effect a settlement.

An official communication from C. P. Hotchkiss, executive-secretary of the Dominion Fuel Board, to Mayor Mitchell of Windsor, Ont., states that the federal government will establish large coke ovens in the Windsor district before winter. The coke, gas, benzol and other byproducts manufactured will be sold to consumers at cost, making a sharp reduction in fuel prices and relieving the coal situation, which has been acutely felt in past winters.

The Crow's Nest Pass Coal Co. has declared a dividend of 3 per cent covering operations for the first half of this year.

Charles McCrea, Minister of Mines for Ontario, states that the strikes of Alberta coal miners will have no effect on the shipment of the 25,000 tons of Alberta coal to Ontario as arranged for. The coal is ready for shipment and the Canadian National Rys. has given instructions for haulage so that no further delay is anticipated.

As the result of the examination held recently at Victoria, B. C., under the Coal Mines Regulation Act, two men qualified as mine managers, two as mine overmen, one as mine surveyor, and ten as firebosses. Twenty-six men were examined.

# Traffic

## Clinchfield Coal Corp. Seeks Cut In Rates to Tidewater

The Clinchfield Coal Corporation has filed a complaint with the Interstate Commerce Commission, Docket 17135, against the Carolina, Clinchfield & Ohio and Norfolk & Western railroads, attacking a rate of $2.77 on coal from mines on the Clinchfield to Lamberts Point, Va., via St. Paul and/or Carbo, Va., and the N. & W. Ry. The N. & W. publishes a rate of $2.52 per gross ton from mines in the Clinch Valley District No. 2 to tidewater at Lamberts Point for transshipment to vessels. Complainant asks that defendants be required to apply the $2.52 in lieu of the present $2.77 rate on shipments from Clinchfield and Dante, Va., via the N. & W. to tidewater at Lamberts Point, Va., for transshipment beyond the capes.

The Clinchfield Coal Corporation also has filed complaint in Docket 17136, versus the Clinchfield, Chesapeake & Ohio and Hocking Valley railroads attacking rates on coal from mines on the Clinchfield to Toledo and Toledo Dock, Ohio, for transshipment via lake. Present rates to these points via Elkhorn City, C. & O. Ry. and connections, are per net ton as follows: From Clinchco, Va., $2.39; from Clinchfield, Va., $2.64; from Dante, Va., $2.64. The complaint alleges that because the defendants apply the domestic rate on shipments from complainant's mines to Toledo and Toledo Dock, Ohio, for transshipment via lake, which is a differential of 48c. per net ton from Clinchco, Va., over the rates from Elkhorn City, and 58c. from Clinchfield and Dante, Va., over the New River district rates, they are giving undue preference to coal mines at points on C. & O. and Sandy Valley & Elkhorn. Complainant asks for a rate of $1.91 from Clinchco, Va., and $2.06 from Clinchfield and Dante, Va., in lieu of present domestic rates of $2.39 and $2.64, respectively.

## Committee Named to Study New Indiana Rate Schedule

Representatives of shippers and receivers of coal in Indiana, coal operators and traffic experts, held a conference recently at the State House in Indianapolis with representatives of the Indiana Public Service Commission to consider intrastate coal rates. The rates submitted by the carriers of the state were inspected by those who attended and a committee was named to meet with attorneys to determine whether the proposed coal rates will be satisfactory to all interests of the state.

A. B. Cronk, Indianapolis attorney, who acted as chairman of the conference, discussed briefly the proposed coal rates. Officials of the Indiana State Chamber of Commerce also spoke. Recommendations were made by the conference that a committee of ten traffic men be named to go over the rate schedules submitted by carriers for intrastate coal shipments and make recommendations. The committee is to make its findings within a short time. It may submit other recommendations which it feels will solve the present rate situation in Indiana.

One of the southern Indiana representatives attending the meeting was L. Lacroix, Evansville, traffic manager of the Evansville Chamber of Commerce, who also represented a number of coal operators in that section.

## Must Guarantee Freight Charge On Slack to Canada

A. M. Dudley, general coal freight agent of the Chesapeake & Ohio Ry., has advised shippers in that territory through the Northeast Kentucky Coal Association that it has been brought to his attention that delays have been experienced on slack coal intended for Canadian territory because of the fact that guarantee of payment of freight did not follow shipment and that investigation develops that the Canadian lines have legally published tariffs requiring a guarantee of freight charges on shipments of slack coal. He further states that in order to prevent any misunderstanding or delay it is suggested that such information be disseminated among the coal operators. The published tariff in no way affects the arrangement for forwarding Canadian traffic on a collect basis.

## Virginian Rate Order Held Up

The Interstate Commerce Commission has issued an order in the Wyoming Coal Co. vs. Virginian Ry. and others, case, postponing the effective date of its order entered May 19, 1925, to Aug. 25, 1925. This is a case in which the commission ordered the Virginian to publish through rates westbound.

Coal merchants and consumers of Fulton, Ky., have filed complaint with the Kentucky Railroad Commission, charging unfair rates from western Kentucky mines on the Illinois Central R.R. to Fulton, and asking for reduced rates and reparations for overcharges.

## Recent Patents

**Cutting and loading Machine;** 1,534,461. Edward O'Toole, Gary, W. Va. April 21, 1925. Filed Feb. 20, 1923; serial No. 620,246. Renewed Oct. 8, 1924.

**Cutting Machine with Dust Remover Attachment;** 1,534,462. Edward O'Toole, Gary, W. Va. April 21, 1925. Filed Feb. 20, 1923; serial No. 620,247.

**Combination Cutting and Loading Machine,** the loading conveyor element containing flow flights; 1,534,463. Edward O'Toole, Gary, W. Va. April 21, 1925. Filed Aug. 13, 1924; serial No. 731,810.

**Coal-Bunker System;** 1,534 667. Edwin C. Sharpe, Piedmont, Calif. April 21, 1925. Filed June 25, 1923; serial No. 647,532.

**Apparatus for Operating Mine Doors, Switches or the Like;** 1,534,702. Edward H. Grim, Dott, W. Va. April 21, 1925. Filed June 20, 1923; serial No. 646,731.

**Skip Hoist;** 1,534,893. Robert H. Beaumont, Philadelphia, Pa., and Harvey Marette, East Orange, N. J., assignors to Beaumont Mfg. Co., Camden, N. J. April 21, 1925. Filed April 30, 1924; serial No. 710,195.

**Briquet of Charcoal and Pit-Coal;** 1,534,962. Erminio Josue, Ancona, Italy. April 21, 1925. Filed Sept. 24, 1924; serial No. 739,710.

## Industrial Notes

**The Conveyors Corporation of America,** 326 West Madison St., Chicago, announces the appointment of the Chicago Electric Co., 740 West Van Buren Street, Chicago, as district representative for the sale of American mono-rail cable conveyors in northern Illinois and northern Indiana.

**The Trico Fuse Mfg. Co.,** of Milwaukee, Wis., has opened a new Chicago district sales office at 1742 Monadnock Block, 53 West Jackson Boulevard.

**The Fuller-Lehigh Co.,** Fullerton, Pa., has acquired the pulverized fuel interests of the Bonnot Co., of Canton, Ohio, including exclusive rights to the Blake water tube bottom (water screen), Blake vertical firing and Sherban and Pomeroy unit-air-ball mill, now known as the Fuller-Bonnot unit ball mill. Some of the engineering personnel of the Bonnot Co. has been retained.

**The Chicago Fuse Mfg. Co.,** of Chicago, manufacturer of Union and Gem fuses and Union outlet and Gem switch boxes, has moved its Philadelphia office from the Weightman Building to 517 Packard Building.

## Coming Meetings

**Rocky Mountain Coal Mining Institute.** Summer meeting, Aug. 26-29 at Price, Utah. Secretary, Benedict Shubart, Denver, Colo.

**American Institute of Mining and Metallurgical Engineers.** 132d meeting, at Salt Lake City, Utah, Aug. 31 to Sept. 3. Secretary, F. F. Sharpless, 29 West 39th St., New York City.

**Oklahoma Coal Operators' Association.** Annual meeting, Sept. 10 at McAlester, Okla. Secretary, A. C. Casey, McAlester, Okla.

**New York State Coal Merchants' Association.** Annual convention, Sept. 10-15, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries,** Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

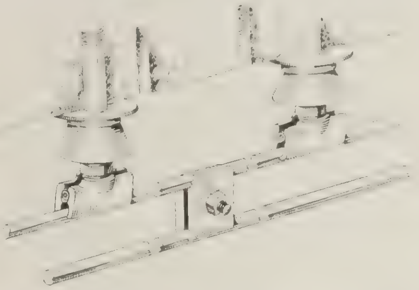
**Fourth National Exposition of Power and Mechanical Engineering,** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

# New Equipment

## Cushioned Trolley Increases Haulage Reliability

Heavier loads in mine haulage demand greater current-carrying capacity for the feeder lines and higher speeds make it necessary that the trolley be "cushioned," that is to possess a certain flexibility vertically. To obtain these results the General Electric Co., offers the type of trolley construction and fittings shown in the accompanying illustration.



**Details of Double Trolley Construction**

Not only is the current-carrying capacity of this trolley approximately twice that of the ordinary single-wire type, but the construction is such that the action of the trolley wheel is always cushioned and the wheel, therefore, seldom jumps.

The basic idea here embodied is the use of two wires, one supported from the other at approximately the midpoints of its span. By this means the trolley wheel never traverses any portion of the wire that is rigidly supported, and its upward thrust is always exerted against a wire that is free to give somewhat and no abrupt changes in trolley contour or grade are possible. As a result the wheel will follow the wire much more surely than it will follow a trolley mounted in the ordinary manner. It seldom jumps.

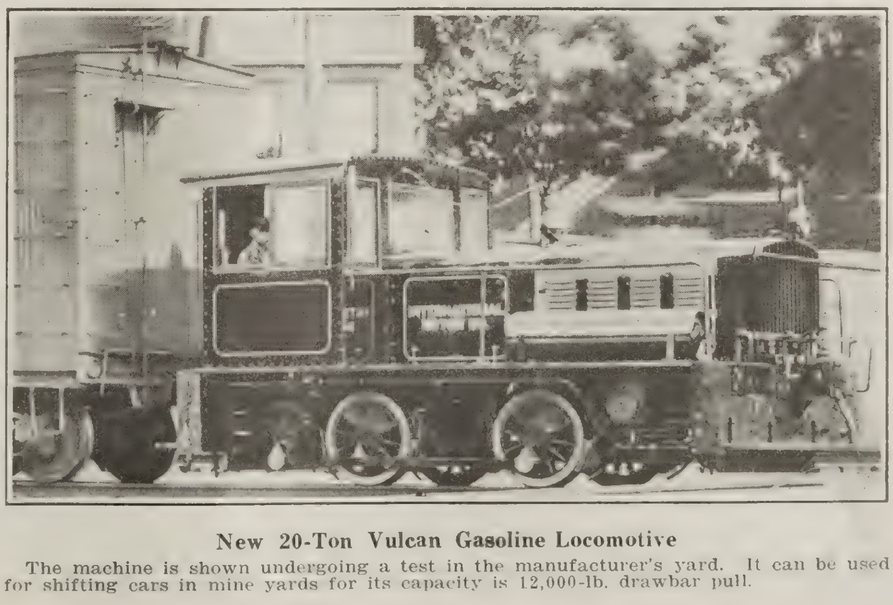
Little comment on the accompanying drawing is necessary as it is practically self-explanatory. The lower or contact wire although held rigidly in position horizontally, is free to move vertically. Naturally the current-carrying capacity of this arrangement is approximately double that of a single wire. Connections from a paralleling feeder cable may be made to the upper wire only. The construction is extremely simple throughout and where reliability and continuity of exacting operation are of prime importance the results obtained fully warrant the increased expense.

## Gasoline Locomotive Is Big Enough for Mine Yards

To meet the prevailing demand for heavier gasoline locomotives, the Vulcan Iron Works, Wilkes-Barre, Pa., has built a new 20-ton machine, to be known as Model HS-20. The manufacturing company has designed and constructed this locomotive along the same lines as its other heavy models. Steam locomotive practice is followed very closely in the chassis construction. Springs are of elliptic type with cross-equalizing arrangement giving three-point suspension. On standard gage track, in shifting railroad cars—for which work this machine is primarily adapted the locomotive is furnished with M.C.B. automatic couplers, with spring buffer and draft rigging arrangement in the bumpers. This device takes up the shocks encountered in coupling and relieves the strains in pulling and pushing the heavy railroad cars.

The locomotive is powered with a 6-cylinder, 125-hp. motor. The motor is a heavy duty industrial type with crank shafts accurately machined as well as counter balanced, thus permitting the engine to run at a moderately high speed without undue vibration.

It is designed for four speeds forward and four speeds reverse and is



**New 20-Ton Vulcan Gasoline Locomotive**

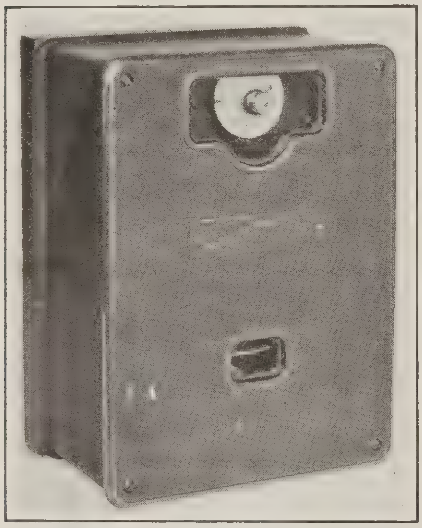
The machine is shown undergoing a test in the manufacturer's yard. It can be used for shifting cars in mine yards for its capacity is 12,000-lb. drawbar pull.

geared from 2 to 15 m.p.h., with a maximum drawbar pull of 12,000 lb. It has a comparatively short wheel base to negotiate reasonably sharp curves.

## New Power Relay Can Be Set Without Removing Cover

A new General Electric Co. power relay can be calibrated, without removing the cover, by means of a knob projecting through the glass window at the upper part of the case. This relay is for use in limiting the power on distribution lines to a predetermined quantity. It has a large range of calibration, running from zero to 1,000 watts, secondary, heavy contacts are used, and the internal mechanism is simple.

This relay is manufactured in three forms; the IG-102, an over-power and under-power device with contacts for controlling either alternating or direct current, and two over power devices, one for alternating current and the other for direct current known as the IG-103 and IG-104, respectively. By rotating the knob at the window, the relay may be adjusted for operation at any deviation from the desired load. A graduated dial, mounted beneath a fixed needle, rotates with the calibrating knob, giving visible indication of the load setting.



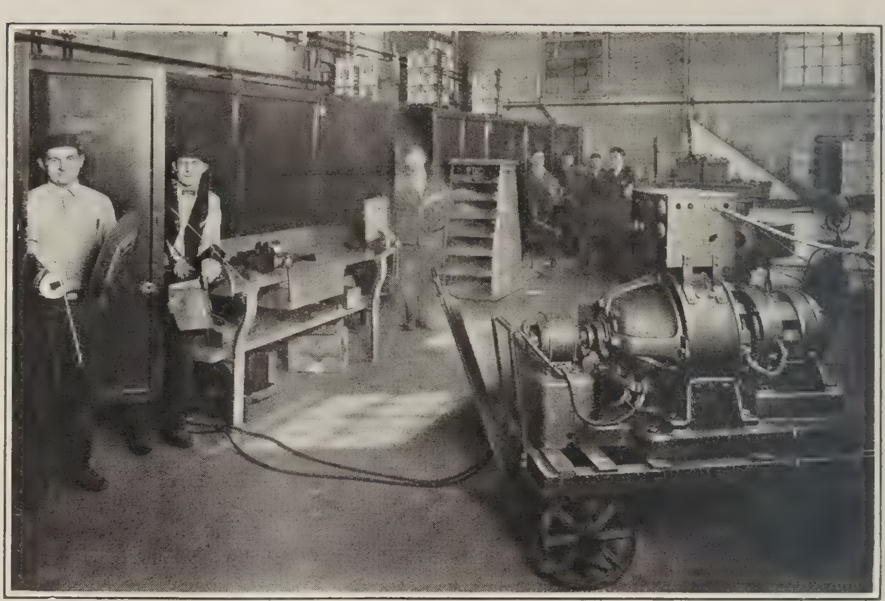
**No Need to Remove the Cover to Set This Relay**

The knob on the outside of the cover makes it easy to set the tripping loads of this new instrument. Dirt and dust are always excluded from the interior.

## New Companies

**The Cleveland Cash Coal Co.** has been chartered with an authorized capital of $5,000 to operate coal properties in Ohio and other states. Incorporators are E. R. Levin, J. A. Fatica, H. A. Harn, H. A. Peck and Nathan Herstram.

Articles of incorporation have been filed by the **Schrolucke Coal Co.,** of Indianapolis. William H. Howe, William Schrolucke, William K. Proule, William H. Abraham and George Hilgemeier were named as didectors. The company has a capital stock of $100,000. Each of the incorporators now is engaged in the coal business in Indianapolis. The object of the incorporation is to combine the resources of the individual companies and handle the output of several mines now being operated independently.



**Westinghouse Welding School Enlarges**

In order to keep abreast of advance in autogenous welding, particulary the progress made in arc welding, the Westinghouse Electric & Mfg. Co. recently has enlarged and centralized the school it has been conducting for some years in order to provide adequate and systematic training for its own employees as well as those of other companies utilizing this process. Here each student during his training performs a series of exercises arranged in progressive sequence. At first only simple problems are given him, but these become more and more intricate as skill is acquired. The school room itself is divided into booths so that each student may work undisturbed and unhampered.

New and up-to-date apparatus including a 1,000-amp. motor-generator set fitted with six outlet panels, arc-cutting apparatus varying from 400 to 600 amp., a portable 200-amp. arc-welding set and all other necessary equipment have been installed.

## Publications Received

**Twenty-Sixth Annual Report of the Mining Industry of Idaho for the year 1924,** by Stewart Campbell, Inspector of Mines. Pp. 249; 6 x 9 in.; illustrated.

**Coal Mine Fatalities in the United States,** 1924, by W. W. Adams, Bureau of Mines, Washington, D. C. Pp. 95; 6 x 9 in.; tables.

**Superheat Engineering Data.** The Superheater Co., New York City. Sixth edition; revised. Price, $1. Pp. 208; 4½ x 7 in.; illustrated. A handbook of the generation and use of superheated steam and related subjects.

**Production of Oil and Gas Field Equipment Against Corrosion,** by R. Van A. Mills, Bureau of Mines, Washington, D. C. Bulletin 233. Pp. 127; 6 x 9 in.; illustrated.

**What the Coal Commission Found,** by E. E. Hunt, formerly secretary of the Coal Commission. Williams & Wilkins, Baltimore, Md. Price, $5. This book is one of the "Human Relations Series." Most of the chapters were written by persons who were connected with the commission, and it has a foreword by John Hays Hammond.

**Twelfth Annual Report of the State Inspector of Coal Mines of Colorado,** 1924, by James Dalrymple. Pp. 61; 6 x 9 in.; tables.

**Standards of the Hydraulic Society.** Pp. 34; 6 x 9 in.; illustrated. Third edition. Contains, in addition to the information in the earlier editions, new and valuable data, such as a standard classification of pumps, standard nomenclature and definitions pertaining to the industry, etc. Copies of the book may be had on application to C. H. Rohrbach, 90 West St., New York City.

**Standard Specifications.** Carnegie Steel Co., Pittsburgh, Pa. Tenth edition. Pp. 140; 5 x 7½ in.; illustrated. Covers steel for bridges and buildings, locomotives and cars, boiler and boiler rivets, commercial and forging bars, reinforcement bars, forgings, railway and industrial wheels, axles and shafts.

**Fundamentals of Business Organization,** by Webster Robinson. McGraw-Hill Book Co., 370 Seventh Ave., New York City. Price, $2.50. Pp. 230; 5½ x 8 in. Presents an analysis and explanation of the character, value and application of those factors and relationships which are essential to an effective organization structure.

## Obituary

**J. Fred Morlock,** head of the Morlock Collieries Co. and certain auxiliary concerns, was found dead in his chair at his office in Ellicott Square, Buffalo, July 10, of apoplexy. He had been in the trade more than 30 years. His age was about 60 and he leaves a wife. He entered the business as an anthracite dealer, but later handled mostly bituminous.

## Trade Literature

**U. S. Auto-Start Motor.** U. S. Electrical Mfg. Co., Los Angeles, Calif. Four-page folder illustrating and describing the starting and running of this automatic self-starting squirrel-cage motor which accomplishes magnetically what has heretofore been done mechanically.

**The Organization and Functions of the Institute of Research of Lehigh University,** Bethlehem, Pa. Circular No. 1. Pp. 19; 6 x 9 in.

**Tests for Railway Material and Equipment,** by Henry Knauer. Simmons-Boardman Publishing Co., New York City. Pp. 257; 4½ x 7½ in.; illustrated. Price, $3. A book for railroad men who have to pass upon the merits of railway material and appliances.

**The Total and Partial Vapor Pressures of Aqueous Ammonia Solutions,** by Thomas A. Wilson. Engineering Experiment Station, University of Illinois, Urbana, Ill. Bulletin No. 146. Pp. 50; 6 x 9 in.; illustrated. The determination and calculation of the total and partial vapor pressures of aqueous ammonia solutions and their application to the absorption ammonia process, illustrated by a concrete example, are the subjects dealt with in this bulletin.

**Mechanical Underground Loading in Metal Mines,** by Charles E. Van Barneveld. Published as co-operative work between the U. S. Bureau of Mines, Mississippi Valley Station, and the Missouri School of Mines and Metallurgy. Pp. 639; 6 x 9 in.; illustrated. The book sells for $1 and copies can be procured from the Librarian, School of Mines and Metallurgy, Rolla, Mo.

**Cast Iron Storage Tanks.** Conveyors Corporation of America, Chicago, Ill. Pp. 11; 4 x 8½ in.; illustrated.

# COAL AGE

McGraw-Hill Company, Inc.
James H. McGraw, *President*
E. J. Mehren, *Vice-President*

Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. Dawson Hall
*Engineering Editor*

Volume 28 NEW YORK, JULY 23, 1925 Number 4

## Insist on Arbitration

IN THEIR PRELIMINARY offer the anthracite operators have volunteered to accept arbitration. They have also agreed to work while the arbitral tribunal makes its award. These righteous decisions should be accompanied by a declaration in severalty that the operators will sell their coal at the present price with, however, all discounts lifted on Sept. 1, as has been customary practice in former years. The old-line operators and some of the independents mean to do so. Why not make the declaration now?

But for the public good the Government should also take action. It should call for prompt submission of the differences to arbitration by a board that would meet not later than Aug. 31, if the two parties have not previously come to an agreement. It should call on the mine workers meantime not to suspend operation, and it should draw attention to the fact that the operators have from the first decided that in so far as they are able they will not permit a suspension that would shorten the supply to the public or cost the people a single penny.

The practice of lashing the recalcitrant miners with no greater fierceness than the public spirited operators is unfair and produces the wrong attitude among those who most need rebuking. A ready political device it is to put operators and miners together sometimes dubbing them "the coal industry" and then to scold both for not resolving their difficulties, but the necessity of the public brooks no politics. Rather it requires a clear vision of what is right and what is wrong and a disposition to express the truth, the whole truth and nothing but the truth, and do it with courage and exactitude.

Now is the time to arrange arbitration before the public is demanding an immediate settlement. The miners want a delay. Give them no opportunity to bring the pressure of suspension on the public or the case will be won not by justice but by panic.

The administration wants to know why there has been no success in preventing the miners from upsetting matters every two years. There is reason enough. It is the Government's poor selling policy. It has condemned the very persons whose claims it believed just.

If the administration is hopeful of getting a settlement, of keeping wages from undue levels, of getting more undercutting machinery and conveyors into anthracite mines, of weeding out men who work only half a day, of laying off men who, by threat of a strike, are enabled to cling to jobs that do not help production or that only take one-half or less of a man's energy, the administration weakens its own case when it abuses miners and operators alike.

The word of the administration is the word of power. It should not be used lightly in condemnation. It should not be critical of the operators when it is getting all it wants from them, or the public will support the mine workers and run counter to the administration. That is poor publicity, stupid diplomacy, and will get the Government nowhere.

In all the editorials and reports of administration utterances that we have seen, nothing has been said as to the offer of arbitration made by the operators. There is a conspiracy of silence and even worse—one of misrepresentation apparently. Carter Field interviews Secretary of Labor Davis on July 17 and reports him as saying: "We shall attempt to bring all the pressure possible to bear on both sides to force them to permit mediation by government-appointed referees."

Of course that distinguished individual may have been misquoted or he may have spoken unguardedly, but certain it is that he should have been careful to correct the error and say that "The government will certainly attempt to bring the mine workers to accept the operators' offer of arbitration." Does the duty of supporting labor that apparently rests heavily on Mr. Davis' Department require him to misrepresent the situation by such a statement as that he is alleged to have made at Swampscott? Last week we had to record a similar misrepresentation. Amid all the jangles of miners and operators, the nation looks to Washington as to Olympus. When it fails, what hope remains for public enlightenment?

## Keeping Cool with Coal

COAL MEN must not be content to wait for orders to come to them, nor spend all their time competing with one another. They must look to increasing the demand for coal and for the kinds of coal with which they find themselves glutted—namely the fine sizes. This research will bind coal men together and give them a common not a diverse aim. We believe there are opportunities to increase the tonnage marketed if coal men will back the development of indirect ways in which coal may be used. "Keeping cool with coal" is one of these. Does the public know to what extent the cooling art has progressed? Does it know how cooling may be effected?

A revelation of the advanced stage of this art would stimulate its growth. Investigation has shown that heating, ventilation and refrigeration engineers do not know themselves how rapidly the practice is growing. If they do not know it, the public doubtless is uninformed, and an opportunity is afforded for performing this publicity service. Everyone wants cooler conditions in summer. If the public learns how many have that advantage, and how they appreciate it, it will demand an extension of the practice. Here is a chance for constructive work.

The coal man will not get any orders for coal that are earmarked for refrigeration, but the larger orders of power companies consequent on the development will aid the industry nearly as greatly as if they came from the individuals who are seeking conditioned air. There is need, therefore, for a survey of air-conditioning activity and practice in all its phases—ventilation, air washing and refrigeration.

The bituminous coal industry waited too long for the automatic stoker. It did not do its part to promote the introduction, and really, when the change came, it saved so much fuel that it was not wholly a blessing to the industry. The cooling program is on the other hand a marvelous possibility. It will add to the consumption of coal; it will make its draft on the small sizes; it will come at the time of the summer slump, and it will speed up industry so that there will be less let up in the hot-weather activity. Let the slogan, therefore, be, "Keep Cool with Coal." In this propaganda we can look for co-operation from the ventilation and refrigeration engineer, the manufacturer of refrigeration equipment, the power station, the builder and architect as it will assist them all. They will joyfully add their endeavors to those of the coal industry.

## High Cost of Haggling

THE ONE-PRICE merchant has cut out haggling in the stores of America. The principle of "take it or leave it," which is delivered in a more diplomatic form as, "That is the marked price which no one has authority to change," has caused buyers to ask the marked price and buy almost without any further question. Unfortunately, it has become the practice to haggle about machinery and to have a varying rate for special designs not based directly on the additional service and the cost of the changes. So every man who has machinery to buy prepares to haggle like a slippered merchant in the alcoves of a Far Eastern market.

Manufacturers send representatives to camp sometimes for weeks on the trail of the man who has a large order. As the time consumed increases, the bidders still remain. They would not perhaps have tried to get the order if they had known it would cost them so dearly but to give up the quest is to lose what has been spent, so they stay on, still hoping, while the busy engineer, general manager or president is working and scheming in other directions with only casual interest in the salesmen who sit in a sad row behind the railing in the outer office.

The high cost of merchandising is due partly to the expense of haggling. The standards of the manufacturer have not been high enough. He has not been ready enough to tag his goods. There has too often been a lower price that adroit bargaining and the play of one manufacturer against another would disclose and attain. A fair, fixed price that would give the buyer confidence, by saving selling costs, would enable the manufacturer who established his prices inflexibly to underbid his competitor and make the closing of contracts easy where now it is difficult. A clear exposition of the costs of changes in construction would eliminate a desire to change specifications which engineers too often evince.

In one instance recently $15,000 was said to have been spent in saleswork and design for a piece of construction, the contract for which was ultimately placed for less than $70,000. The engineers asked bids from several manufacturers all of whom prepared special designs. If the contract had been given in the first instance to the manufacturer whose equipment was of the most desirable type, and then if changes had been suggested and the cost of change had been added to the price all this loss would have been saved.

To ask for designs from persons whose product is not really being considered is in a sense dishonest, but it is the natural outcome of the haggling principle. Where price is not set absolutely, every sale must be made by haggling. The manufacturers who consent to haggle, consent thereby to be haggled in turn. They can expect nothing else.

## Shop-Worn Merchandise

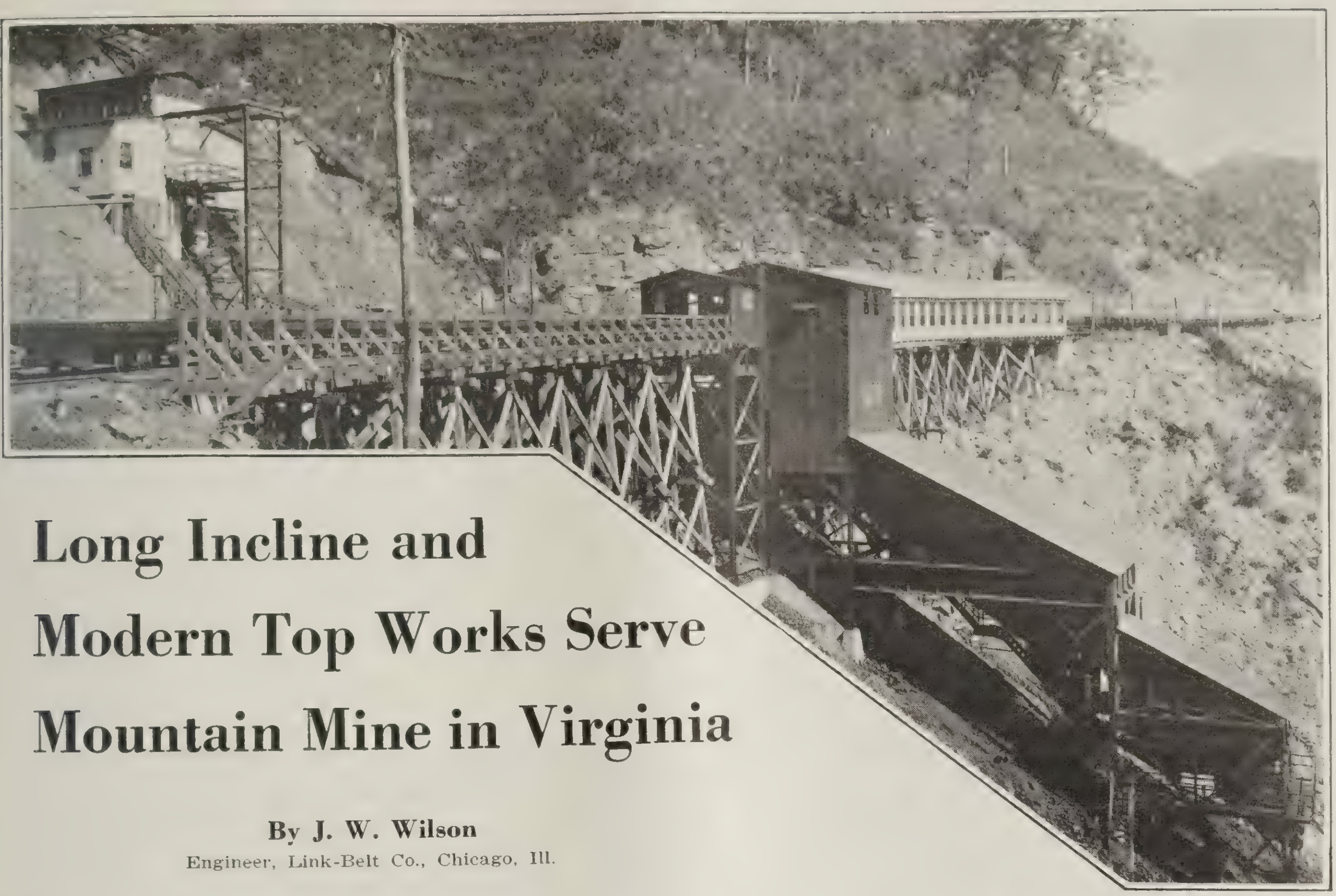
NOTHING SO DELIGHTS the average Thespian as good, old, moth-eaten, sure-fire "hokum." There is, as everyone who watches them in action will soon discover, considerable of the theatrical in the make-up of the common run of labor leaders. Economics and bloodless figures are not belittled in direct negotiations with the employers, but, when the labor leader is making a point for public consumption, popular appeal, rather than soundness, is the flavor he seeks to impart to his offering.

It is not surprising, therefore, that that sturdy veteran, "extortionate freight rates on anthracite," should have been trotted out by Vice-President Murray of the United Mine Workers at Atlantic City last week and paraded in all its ancient glory. The alleged unreasonableness of the transportation toll upon hard coal has been the favorite theme of individuals with special axes to grind for lo, these many years. Whether there is any basis in fact for this deep-seated belief—the fundamentalist creed of most critics of anthracite—we do not know.

What we do know is this: The Interstate Commerce Commission is the only body authorized by law to sit in judgment upon those rates. The miners, in their gesture for an appeal to Washington, concede the competency and thereby acknowledge, in public at least, a respect for the decisions of that federal tribunal. The Interstate Commerce Commission in 1915 passed upon the reasonableness of the base rates to tidewater after one of the most exhaustive investigations in its history. It examined the earnings and the operating costs of the anthracite carriers and pried into their then existing and past relations with the producing companies. Subsequently the Commission also passed upon rates to Middle Western key points such as Chicago and Detroit. Every change which has been made in the general rate structure since that time has been made in accordance with the orders of federal authority.

What, then, can the miners or the public hope from petitioning the Commission to institute another investigation? Mr. Murray says that his followers "have examined ultimate equities (whatever they may be!) and know that substantial cuts can be effected in freight rates of anthracite coal-carrying roads." If Mr. Murray and his associates "know" this, why was not the United Mine Workers represented at the hearings held under the 1923 investigation instituted by the Interstate Commerce Commission on recommendation of the United States Coal Commission? Why, when Governor Pinchot, likewise among the missing in those hearings, suggested that part of his gift to the miners could be assumed by the railroads, did not Mr. Murray and his associates rush before the Interstate Commerce Commission and demonstrate to that body that Gifford was a true prophet?

It is not surprising, we repeat, that the miners, who appear to have abandoned all pretense of justifying their demands for wage increases upon economic grounds, should resort to such "hokum." It is not surprising, but hardly flattering to the public. But, then, the union has never shown convincing evidence that it holds a high opinion either of the length of the public memory or of its intelligence.



The headpiece shows the incline headhouse. Here a 2-car rotary dump empties trips from the mine through the weigh house into a 125-ton bin. An undercut gate feeds from the bin into 20-ton monitors operating in balance on the incline. The second bin at the extreme lower end of the headhouse is for overflow. It also is equipped to discharge over the incline track so that eventually monitors can be operated and loaded in tandem.

# Long Incline and Modern Top Works Serve Mountain Mine in Virginia

By **J. W. Wilson**
Engineer, Link-Belt Co., Chicago, Ill.

MANY ENGINEERING and construction problems were involved in building the outdoor plant of the Blue Diamond Virginia Coal Co.'s new mine near St. Charles, Va. Coal is taken from four openings high on the side of Little Black Mountain in the Pocket district of Lee County and is hauled various distances ranging up to one mile to reach a headhouse on the shoulder of the mountain. There it is emptied by a revolving dump into bins feeding 20-ton balanced monitors operating on a 3,600-ft. slope whose maximum grade is 58.9 per cent down the mountain to a well-equipped tipple nearly 1,000 ft. nearer to sea level. There is also an incline nearby for men and material. The plant is built to handle at least 3,000 tons a day.

The new camp and location is known as Diamond, Va. It is served by the Southern Ry. and the Louisville & Nashville R.R., which has operating rights over the Southern's line. The lease of the coal company lies partly in the State of Kentucky. The No. 10 coal vein in Black Mountain will average about 66 in. thick with a parting near the center about ¼ in. thick. A 6-in. slate vein above this bottom bench of coal separates it from 12 to 20 in. of coal above it and on top of which is found a solid sandstone ledge that, in places, will average 30 ft. thick. Only the lower bench of coal is being mined except in main haulways.

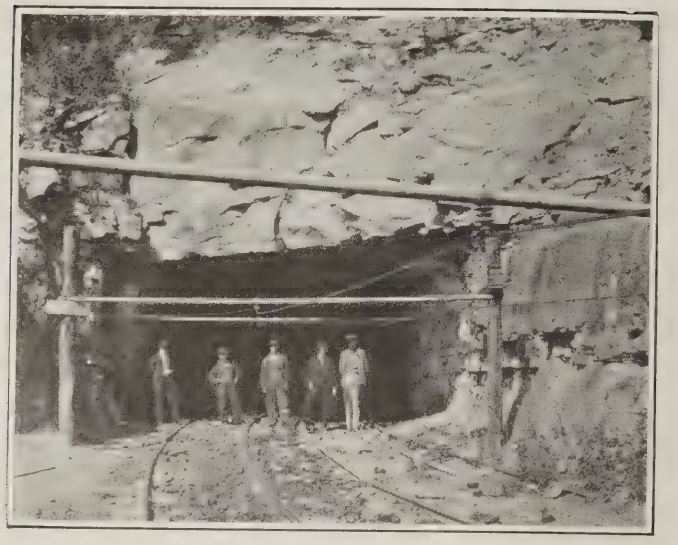
The preliminary development work has been laid out from the four openings on a room-and-pillar system of mining. The main haulage tracks are of 60-lb. steel, the gathering tracks 40 lb. and rooms 20 lb. on a 48-in. gage. Solid body mine cars of about 3-ton capacity, with 12-in. surcharge, are used and are equipped with hand brakes.

Electric power is purchased from a power company whose station is only three miles away and whose transmission lines to the Harlan coal field on the north side of Black Mountain cross over the mountain on the coal company's property. The high tension power is transformed to 440 volts for power service outside the mine and converted through two 200-kw., 275-volt rotary converters to direct current for mining machines and haulage motors. With full load on the converters and the hoist at a given time, the alternating current drop is less than 3 per cent and is seldom over 1½ per cent under normal conditions. Because of the close proximity of the substation to the machine shop, semiautomatic control was decided upon.

Quite a number of departures from past practices have been incorporated in the equipment for the handling and preparation of this coal, some because of the peculiar conditions of topography and others due to the characteristics of the coal.

In the construction of the grade for the haulageway from the mine openings, a steam shovel was started up from the hollow in which the railroad is located at about elevation 1,600. It built a road ahead of itself about 12 ft. wide. The contour of the surroundings were such that 2½ miles of this road had to be made to reach the headhouse location or elevation 2,594 at top of rail of the mine track at the rotary dump. Some of the grade on this roadway is as steep as 15 per cent. This steam shovel was then used to build the outside haulageway to the four openings, the longest of which was about a mile.

The first work was commenced on the material incline,



**One of Four Openings at Blue Diamond Mine**

At this point No. 1 butt main enters the coal. The strong roof that overlies the No. 10 seam in this part of the Black Mountain is to be seen over the portal. Coal is hauled down a 2½ per cent grade to a rotary dump in the headhouse. From there it descends the long incline in monitors to the tipple at the railroad.

which is about 300 ft. east of the dumphouse and coal incline. This material incline is about 4,000 ft. long, is built up the point of a ridge, and has seven humps in the track, which eliminated much blasting of rock and filling for the roadbed. Sixty-three pound rail on 48-in. gage was laid and a temporary wooden tipple was built at its lower end, where development coal was loaded into railroad cars with simple preparation over bar screens into two sizes, steam and block.

An ordinary steam hoist, using a $\frac{5}{8}$-in. wire rope, was used for material haulage during the construction of this incline. An electric hoist is now employed, driven by a 150-hp. motor, using a 1-in. wire rope. During the construction of the main coal haulageway, this incline handled an average of 300 tons per day, the hoist lowering four 3-ton cars per trip. This incline is also used to haul the men to the top. A special car was built to hold 44 men. Convenient loading stations and waiting houses are provided at the upper and lower ends. The hoist for this incline is set on solid rock at elevation 2,632.

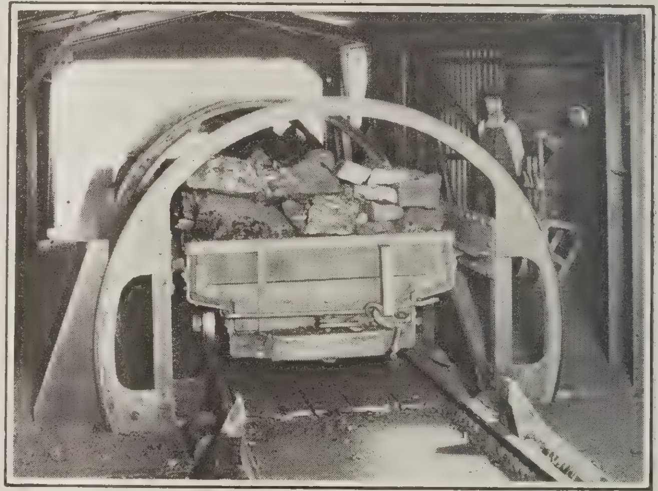
**In the Blue Diamond Tipple**

This view shows the interior of the preparation house looking from the egg-loading boom toward the control station. The shaker screens are in the right background.

Such good fortune did not occur in the hunt for a good foundation for the gravity incline machine on the main coal incline, which it was necessary to place in the hillside some distance above the headhouse.

The 150-hp. motor on this material hoist on the lowering part of the trip, pumps back considerable power into the alternating current line. During the construction period this reversal was so pronounced that the power company placed a ratchet on the meter to prevent it from registering a credit to the coal company. The 150-hp. motor is of the wound-rotor induction type, 440-volt and direct connected to the hoist drum by double reduction gears providing for two speeds. In low gear at 300 ft. per minute rope speed, it has a capacity of 12 tons, and at 600 ft. per minute in high speed, a capacity rating of 6 tons. The maximum grade on this man-and-material incline is 56 per cent, and the average grade approximately 40 per cent.

The control of this hoist motor consists of full automatic panels, seven contactors for the secondary, a forward and reverse switch in the primary, master controller, maximum torque switch, emergency switch and no-voltage and overload protection.

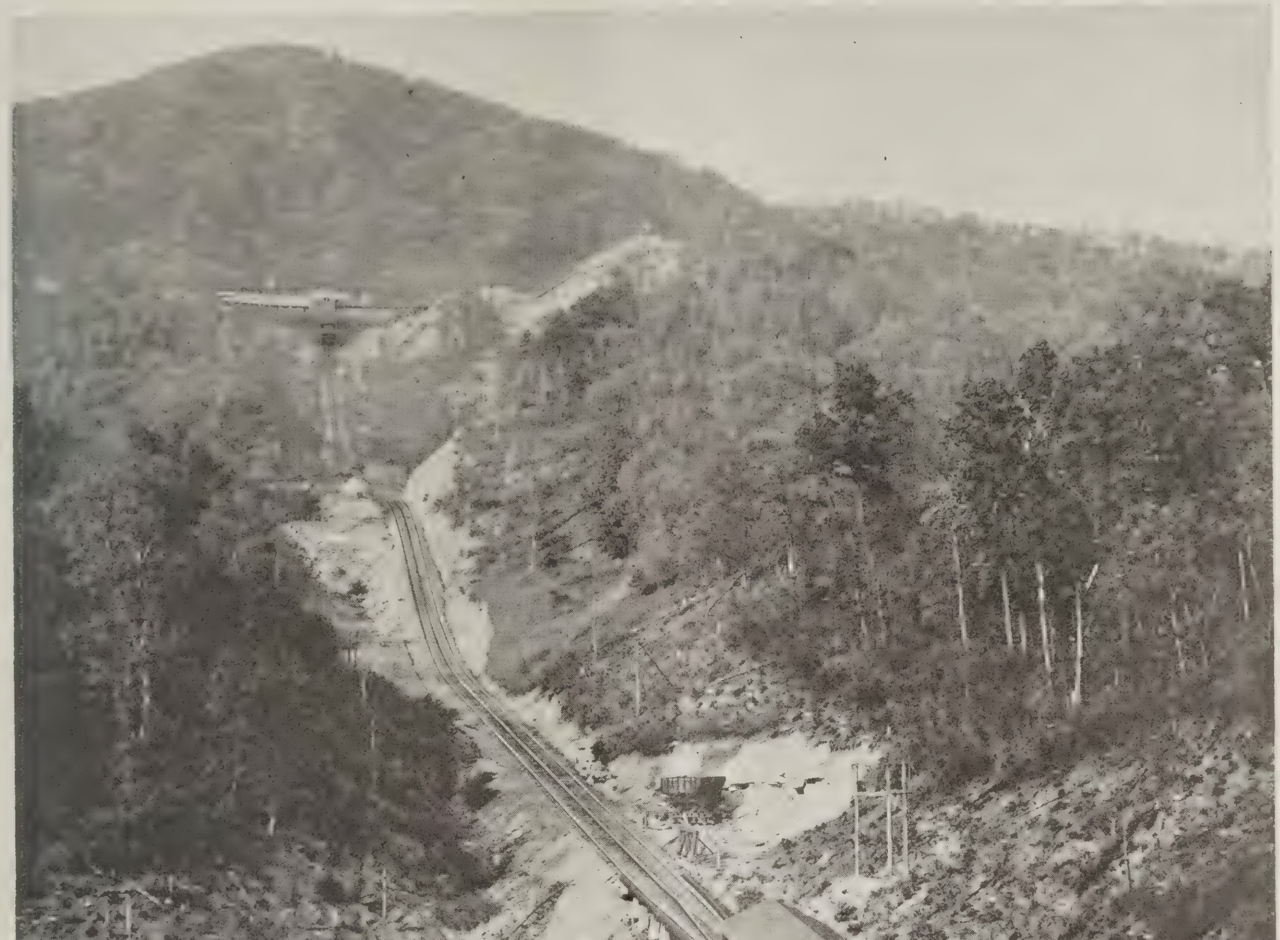


**Two-Car Rotary Dump**

This machine in the headhouse handles 400 tons an hour at the present maximum operating speed of the Blue Diamond mine. This capacity may be increased later.

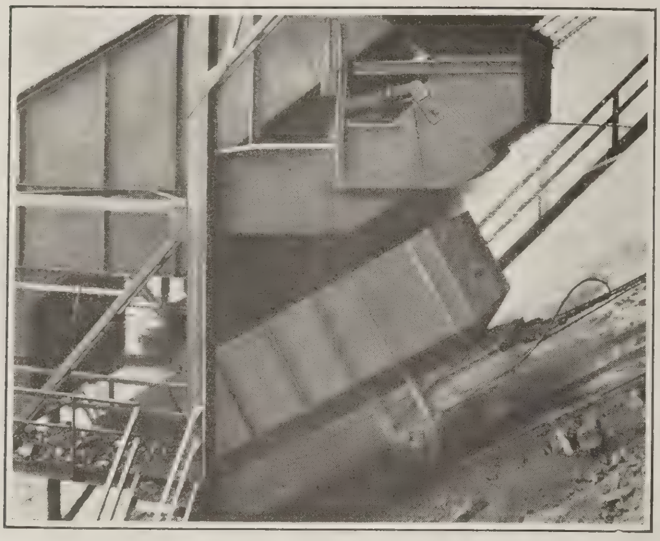
To serve the main coal incline the loaded and empty mine cars in trips of about 30 cars each, are brought to and taken from the headhouse over double track having 2½ per cent grade in favor of the loads from the openings. A 2-car rotary mine car dump, power driven, dumps the contents of each car into separate, suspended-type, weigh boxes equipped with machines automatically recording the weights. For about 100 ft. above and below the rotary dump, the mine car tracks are on 3 per cent grade. The track through the rotary dump itself is level, and the arrangement has proven satisfactory in operation. Swivel couplings are used on the mine cars, so they are dumped in train, the spaced horns ahead of the dump, in the dump and below the dump eliminating tension that the tram grades would otherwise give.

The two weigh boxes are equipped with gravity discharge gates closed with counterweights, and discharge directly into a 125-ton capacity bin above the monitor tracks. A secondary bin of 35-ton capacity, immediately beyond the large bin down the incline, is



The Blue Diamond Virginia Coal Co. Operates a Long Tramway at Its New Mine

Coal is hauled from four portals around the shoulder of Black Mountain to the headhouse seen near the top of the picture. There it is dumped into 20-ton monitors which lower it 994 ft. by the coal incline, the grades of which are as steep as 59 per cent in places. The 4-track tipple over the railroad is equipped with shaker screens, rescreening equipment and steel pan loading booms capable of handling at least 3,000 tons of coal a day.



**Monitor Loading on the Incline**

The air-operated undercut gate is open, feeding coal from the 125-ton bin into the 20-ton drop-bottom car. Each of the two balanced monitors makes a round trip in 6 min. on the 3,800-ft. incline, lowering coal from the headhouse to the tipple, a vertical distance of 994 ft.

automatically filled through overflow from the 125-ton bin. Both bins are provided with two large air-operated gates, of the undercut type, for loading the monitors. This arrangement makes possible the loading of two monitors in tandem, each monitor holding 20 tons.

The distance from the headhouse to the shaker screens of the preparation plant below, is approximately 3,600 ft., and an average operating cycle of 6 min. was estimated. This was to provide for 400 tons per hour of ultimate capacity with two monitors loaded simultaneously at the headhouse bins, and brought down in tandem, each trip, therefore, carrying 40 tons of coal. At present, one monitor on each end of rope is used, and the operating cycle averages less than four minutes, recently 24 trips having been made in 58 min., elapsed time. Therefore, it may be some time before it will be necessary to use monitors in tandem.

The maximum grade on this coal incline is 58.9 per cent immediately underneath the headhouse loading bins. One and one-quarter inch rope is used with the single monitors. The gravity machine drums are grooved for $1\frac{3}{4}$-in. rope, which will be used ultimately in connection with the two monitors in tandem.

The coal monitors of the 4-wheel, rigid type, are 18 ft. long, 9 ft. wide and 9 ft. 6 in. high above rails. Three rails are used on the gravity plane from the headhouse to the turnouts at the middle, and below the turnouts three rails to within 50 ft. of the lower dumphouse, where four rails are again used, spaced just rail clearances apart. Eighty-pound rail on 66-in. gage is used for this monitor runway with sawn wooden ties and track carefully stone-ballasted.

The gravity incline machine is of the 2-drum 4-brake type. Drums and brakes are 10 ft. in diameter, seven grooves in each drum, and brake bands 14 in. wide. Asbestos brake lining is used. The incline machine has a 150-hp. motor connected to drums through an expanding friction clutch to permit spotting of monitors if landing under loading bins is improperly made by operator, and also to permit rerailing of monitors in case of derailment on the incline. The motor haulage speed for this rerailing or spotting service, is 90 ft. per minute. The two brake bands on each drum are air-controlled, as well as the expanding clutch for motor connection. The valves for these controls, the motor controller and the valves for controlling the four undercut gates loading the monitors, are in the operator's station alongside the lower bin, where the operator can spot upcoming monitor and load it immediately after.

The rope from the monitor to the incline machine leads through a series of 96-in. diameter vertical and 48-in. diameter horizontal cast steel sheaves, and further protection is given the rope by installing flanged drums of 18-in. diameter and 24-in. face at the lower end of the bin structure.

The monitors discharge through drop-bottom doors into a 150-ton equalizing bin ahead of the shaker screens below. A steel pan conveyor automatically draws coal from this lower bin at the rate of 400 tons per hour, feeding the shaker screens, where sizing is made into 4-, 5- or 6x2-in. or $2\frac{1}{2}$-in. egg coal, and 2-in. or $2\frac{1}{2}$-in. screenings. The block and egg coal are rescreened

**Substantial Haulage**

On this main line from the workings, trips of 30 cars are hauled down a $2\frac{1}{2}$ per cent grade to the incline headhouse. Sixty-three-pound steel is laid on solid roadbed. Rails on curves are cross-tied with 1-in. rods as shown in the foreground to withstand heavy side thrust.

before being placed on the steel pan conveyor-type picking tables, where any impurities may be taken out before the coal is loaded into railroad cars below by adjustable, steel, boom sections of these pan conveyors, which are lowered by electric hoists, operated by push-button control from the trimmers' walks below the picking floor and alongside the cars.

### Refuse Easily Disposed

Any refuse found in the coal is thrown into a steel pan conveyor located underneath the picking tables and at right angles to them, providing the most convenient means for easy disposal of the refuse by the pickers. This conveyor discharges into a bin of about 1,400-cu.ft. capacity, which is emptied, as required, by wagon or truck.

At the end of the picking tables, another cross conveyor of the steel pan type, is used for taking either egg or lump coal from the raised-up ends of loading booms, and carrying it to a 100-ton capacity storage bin for house or town coal.

Four loading tracks are provided under the preparation structure, but only three are used at present. The fourth will be an additional lump track.

Each loading track is equipped with a car retarder. Tracks under the tipple are on 2½ per cent grade. The track scale and scale house are located immediately below the ladder of loading tracks.

**Rope-Centering Sheaves**

This 6-wheel arrangement at the top of the Blue Diamond incline is laid out between the hoist and the plane. In this photograph, taken under the headhouse, a monitor is shown at the loading position.

## Arrangement of Burners Raises Powdered Coal Efficiency

For some years it has been fairly well recognized that coal could be burned more efficiently in the powdered state than in any other. This is largely because when fired in this condition the draft control is more sensitive and accurate and, consequently, the admission of excess air can be reduced to a minimum. Efficiencies and boiler ratings unattainable, commercially, by other methods of firing are thus rendered possible.

Two chief problems were encountered in this method of coal firing. The first was that of obtaining quickly an intimate mixture of air and fuel so that combustion might proceed as rapidly as possible. The second was that of protecting the brickwork of the setting from rapid deterioration from the intense heat generated.

### Whirling Flame Used

Several years ago one of the engineers of the Fuller-Lehigh Co., conceived the idea that both of these objects could be gained by giving the flame a whirling motion similar to that of the cyclone. To get this revolving action of the flame, four jets were placed at right angles to each other within a well in the bottom of the furnace, the arrangement being such that each succeeding jet impinged upon and deflected the flame from the one preceding. By this means the furnace walls were protected from direct contact with the flame while simultaneously an extremely intimate mixture of the pulverized coal and air was obtained. The result was an intensely hot flame of short length.

Results of tests conducted on a commercial installation of this type in the Sherman Creek Station of the United Electric Light & Power Co., of New York City, show efficiencies from 3 to 5 per cent higher than those attained in other powdered-fuel installations in the same plant. Furthermore the curve of efficiencies obtained at various boiler ratings is much flatter than anything heretofore demonstrated.

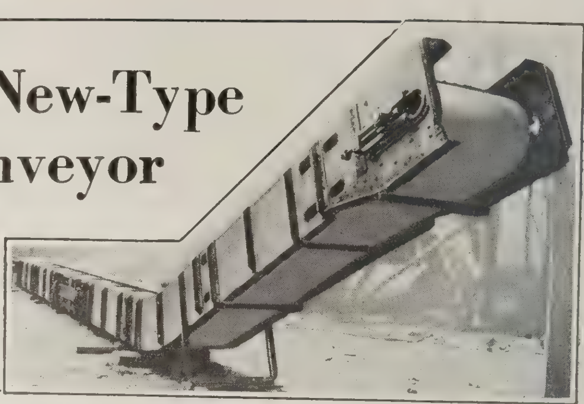
In two other details the well-type of burner seems to possess a substantial advantage over other varieties. First, the combined volume of well and combustion space need be no greater than the combustion space of the ordinary stoker-fired boiler. Second, the rapid whirling motion of the flame seems to sweep away the so-called "dead film" surrounding the tubes, permitting an extremely rapid heat absorption by the boiler heating surface. This permits driving the boiler at exceptionally high ratings.

While it is perhaps too early, as yet, to foretell the future application of this type of furnace, all experience thus far gained would indicate that it would be well adapted to installation under boilers where automatic stokers have been installed originally. The small combustion space necessary would render it especially applicable to this use. It would also appear to be well fitted for boilers installed in plants where economy of space is an important consideration. While no experiments on its use in the burning of refuse fuels, such as bone and rash at the mines, have been reported, this furnace would appear to be as well adapted to this purpose as any of the other and better known designs.

## Creosote Treatment for Dry-Rot in Wooden Mine Cars

The Hillman Coal & Coke Co., Pittsburgh, Pa., has experienced more or less trouble from dry-rotting of wooden mine cars which have been out of service for several months in idle mines. In an attempt to check this fungus growth within the wood of mine cars, this company is treating the latter with a creosote wood preservative. The effects of this treatment is being watched with interest.

# Belt Rides on Wheels in New-Type Sectional Coal Face Conveyor



## Drive Section May Be Inserted in Line at Any Point—Only Two Men Needed to Operate Machine at Face

By **Alphonse F. Brosky**
Assistant Editor, *Coal Age*,
Pittsburgh, Pa.

ANOTHER APPLICATION of rubber-fabric belting to coal-mine machinery has been made. This takes the form of a continuous, sectional belt conveyor intended for transporting coal from the working face to an entry where the cars of a trip may be loaded one after another without appreciable delay. The belt rides on wheels. This conveyor is said to be the first of its kind to be offered for use at the face in coal mines.

Like several all-metal conveyors of the same general type devised for underground use, the belt conveyor, as illustrated in Fig. 1, combines two end sections, a vertically-curved section, a drive section and a number of interchangeable straight sections. One or more of the latter can be added or removed, as required, to lengthen or shorten the unit. All sections are compact and comparatively light in weight affording ready portability.

In Fig. 2 are shown two sections of belt and a straight segment of the conveyor frame. Instead of moving over idlers like the ordinary conveyor belt, this one is carried by wheels turning on axles bolted at intervals to the belt sections. These wheels traverse rails that form a part of the conveyor frame. Each section of belt is 6 ft. long. The supporting axles are fastened to it on 3-ft. centers, so that only two sets of wheels are attached to any one section, one located in the middle and the other at one end. In joining, of course, the sections are so mated as to maintain uniformity in the pitch of wheel centers.

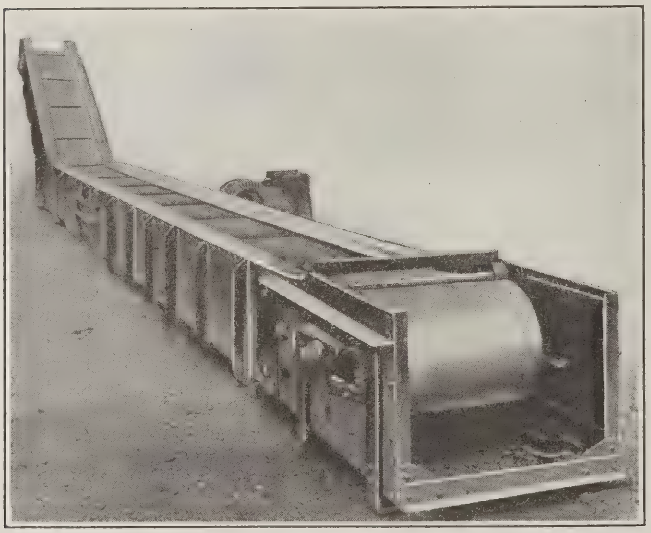


**Fig. 1—General View of the Conveyor**

A pair of the wheels that support the belt has just rounded the head pulley and is about to enter the guides between which movement to the discharge end is confined. The drive section may be seen near the middle of the conveyor.

The wheel axles are attached to the upper surface of the belt and thus serve as low flights, checking any backward movement of coal in slope positions such as the belt assumes while going over the discharge end of the conveyor. The wheel treads are slightly convex. Flanges on these wheels are unnecessary inasmuch as they are kept on the track by the guiding effect of the conveyor-frame sides.

Belt sections are joined together by an interlapping hinge arrangement. The hinge offsets contain $\frac{3}{8}$-in. steel tubes which receive the hinge rod when this is put in place. The belt, which is 4-ply and reinforced on its carrying side, is wrapped around these hinge tubes and the overlaps vulcanized. The tubes are thus reinforced with rubber.

The conveyor frame is fabricated of 14-gage steel plate stiffened with angles and held together by means of cross braces and tie rods. Within and upon either side of the frame are an upper and a lower rail on which the belt wheels run. This is of standard 8-lb. section. The upper edges of the side plates are bent inward and downward forming skirt boards which cover the wheels and track and keep coal from dropping from the upper conveyor run to the lower. Although the belt is actually 20 in. wide, its effective width is cut down by the overhang of the skirt boards to $14\frac{3}{4}$ in.

Frame sections are 6 ft. long. They are joined together by bolts and nuts or by a wedge key arrangement. The overall height and width are $20\frac{3}{4}$ in. and $29\frac{3}{4}$ in. respectively. With the exception of the drive section which, of necessity, must be somewhat heavier, each frame section weighs about 250 lb. Two men should have no difficulty in lifting one frame section and one man can easily handle two belt sections at one time.

The drive section, which also is 6 ft. long, can be inserted in the conveyor line at any point. For a 250- to 300-ft. conveyor with a capacity of 50 tons per hour at a belt speed of 100 ft. per minute, a 5-hp. motor drive will suffice. Power is transmitted from the motor through an angle-type of speed reducer to a driven shaft on which are mounted two sprockets, which in turn, actuate two conveyor haul chains. These are of steel roller, automotive-truck type and at intervals carry dogs which engage the conveyor wheels transmitting motion to the belt. The motor and speed reducer are mounted on a separate base which can be detached from the drive section proper while the conveyor is being moved to a new location.

Both head and tail sections are provided with a pulley

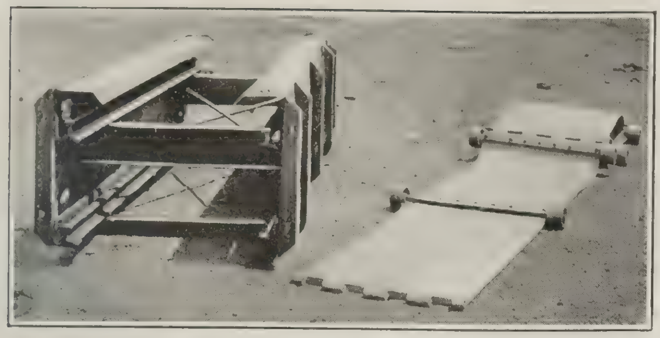


**Fig. 2—Belt and Straight Frame Sections**

Section after section of the belt may be joined together by merely passing rods through the holes in the interlapping hinge lugs. The wheels on the belt axles traverse the rails attached to the conveyor frame.

or drum which the belt rounds in passing from one run of its endless path to the other. Inasmuch as the conveyor is driven from the center, the head and tail pulleys are each provided with a screw take-up to insure uniform tension on each end of the drive. The discharge end can be elevated to a considerable height, being supported, as shown in the headpiece, from a single bent which it overhangs as a cantilever.

The design of this conveyor, known as the Thorsten, is such as to retain the major advantages of belt conveyors more permanently installed. Simultaneously it provides flexibility of the carrying agent—the belt—and simplicity of the other moving parts. It possesses other advantages, however, in addition to those of the ordinary belt. These accrue by reason of the fact that the sections of belt are linked together as one piece and supported by wheels which move with them. At only two points does the belt itself make contact with any part of the conveyor—at the head and tail pulleys. Elsewhere the wheels which support it receive the friction wear. They can be replaced quickly. Friction between the end pulleys and the belt is not relied upon to impart motion to the latter. Driving both the upper and lower runs of the conveyor simultaneously equalizes the pulling forces.

Because of these features of the design, the belt keeps in alignment with respect to the various sections of the conveyor frame even though these sections themselves may not be exactly level or in line. It is this characteristic that makes practicable this semi-rigid belt conveyor of the sectional and portable type for use in mines, where the floor is always more or less uneven.

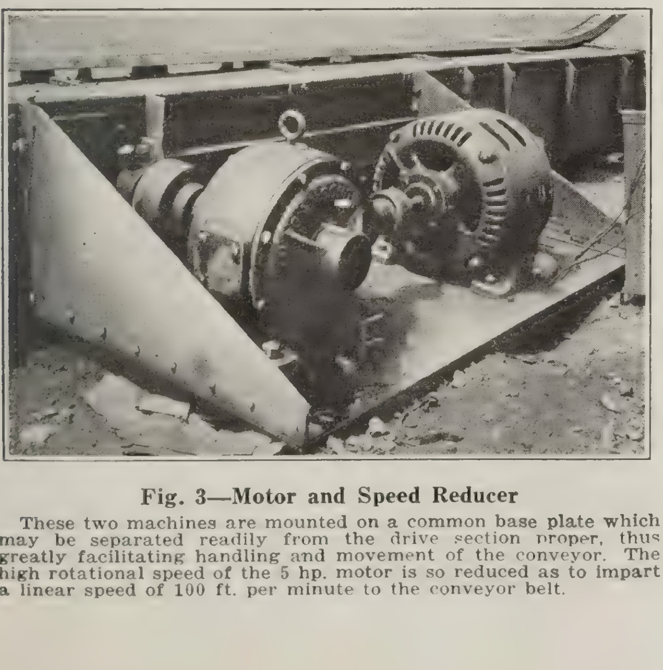


**Fig. 3—Motor and Speed Reducer**

These two machines are mounted on a common base plate which may be separated readily from the drive section proper, thus greatly facilitating handling and movement of the conveyor. The high rotational speed of the 5 hp. motor is so reduced as to impart a linear speed of 100 ft. per minute to the conveyor belt.

When the drive section is located at the middle of the conveyor, the tension of the belt at any point is one-half that at the corresponding point on a friction pulley-driven conveyor of the same size, because of the double drive provided. Slippage and consequent wear on the belt are eliminated by the positive drive.

The simplicity of this conveyor is further demonstrated by the few bearings required. Only two wheel-bearings for every 3 ft. of belt length are needed, whereas a conveyor of the ordinary type requires two idler-pulley bearings for every foot of belt length on the carrying side of the conveyor.

The principles of this conveyor are covered by patents taken out under the name of T. Thorsten, mechanical engineer of the West Penn Power Co. and its subsidiaries, the Allegheny-Pittsburgh Coal Co. and the Windsor Power House Coal Co., all with offices in Pittsburgh, Pa. The conveyor itself will be manufactured by the Charleroi Iron Works, Charleroi, Pa.

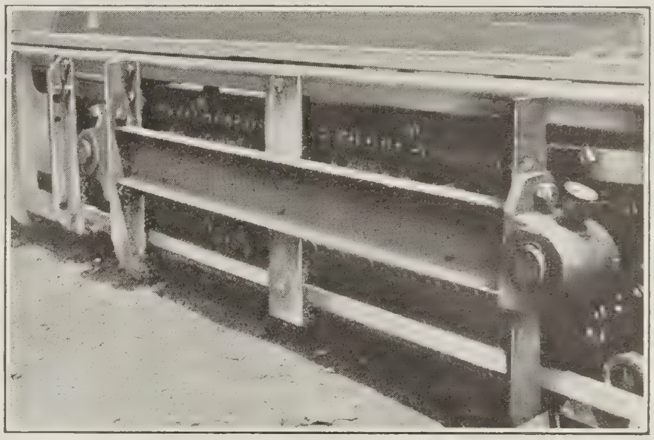


**Fig. 4—Conveyor Drive Section**

Dogs attached to the roller sprocket chain engage the wheels carrying the belt, thus driving the entire device. Inasmuch as both loaded and return strands are engaged and driven simultaneously, tension at any given point is at a minimum.

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## Tests Mine Fire Hose and Water Pressure

A series of tests designed to ascertain the most suitable hydrant pressures and sizes of hose and nozzles for use in fighting mine fires has been completed by the U. S. Bureau of Mines, with the co-operation of the Illinois Geological Survey and the University of Illinois. The investigators found that the most effective combination of fire hose and water pressure for use by one man fighting a mine fire is that which gives a steam with maximum trajectory in a limited headroom and delivers the greatest volume of water.

The tests comprised stretching a line of 50 ft. of $1\frac{1}{2}$-in. hose with different warps and bends and using hydrant pressures ranging from 30 lb. to 150 lb. per square inch. The nozzles were all cone-shaped and ranged from $\frac{7}{16}$ to $\frac{7}{8}$ in. in diameter. A few similar tests were made with $2\frac{1}{2}$-in. hose.

The data obtained show that the $\frac{3}{4}$-in. nozzle apparently gives the most effective stream with 50 ft. of $1\frac{1}{2}$-in. cotton rubber-lined hose.

The results of these tests are given in Technical Paper 330, by L. D. Tracy and R. W. Hendricks, copies of which may be obtained from the Bureau of Mines, Department of Commerce, Washington, D. C.

# Eavenson Praises South for Advances in Mining

## Tells Pittsburgh Coal Mining Institute West Virginia and Kentucky Surpass Pennsylvania—Talks of Financing Mines—Affelder "Lays Down the Law" in Safety Speech

**By a Staff Correspondent**

SOUTHERN coal producing companies generally, and those of West Virginia and Kentucky in particular, are leading Pennsylvania in adopting advanced ideas in the construction of mine plants and towns, and in the selection of equipment. The Southern operator is making a more earnest effort to inspire contentment among his workers by better living conditions and among his customers by better prepared coals, according to Howard N. Eavenson, consulting engineer of Pittsburgh, Pa. He talked on "Financing and Constructing a New Mine" at the third quarterly meeting of the Pittsburgh Coal Mining Institute, July 10. In the second address W. L. Affelder, assistant to the president of the Hillman Coal & Coke Co., declared stoutly that operators ought to be more active in the mine safety movement.

The Institute is advancing the educational work by which it intends covering all phases of coal mining in a series of talks by capable engineering and operating men. This was demonstrated by the July 10 meeting, which was held in the Chamber of Commerce auditorium, Pittsburgh, Pa., and was presided over by W. D. Parker, U. S. Bureau of Mines. Optimism rules the organization by reason of the fact that its membership has passed the thousand mark, a remarkable growth in nine months from its beginning. Unfortunately, this meeting was poorly attended—by about 50 men—because of the 90-deg. temperature and Pittsburgh's customary depressing humidity experienced at this time of the year.

The most important factor making for the success of a coal operation is its labor, Mr. Eavenson said in his talk. A contented miner is a safe and efficient worker. In out-of-the-way localities the investment for the conveniences and comforts of life of the employee must be materially greater than that in more populous districts. It is not uncommon of owners in Southern fields to have invested in their towns the money equivalent of 60 to 100 per cent of the cost of the remainder of the property, making the housing investment 35 to 50 per cent of the total. Of course the towns do not pay for themselves directly. The owner is lucky to break even, while losing the interest on this investment; but the outlay is justified by the benefits.

Miners' houses must be built at least as good as those which the tenants would build for themselves, Mr. Eavenson believes. Some companies south of Mason and Dixon's line build even better than that. The need for substantial houses, large lots, fences, a good water supply, sewerage systems, good roads, bath houses and adequate community buildings is growing. In the future the mine owner will be compelled to go the limit in this respect as a result of the scarcity of good labor occasioned by the emigration laws now in force. American labor will not permit its standard of living to lower, he thinks.

Before seeking financial aid for the opening up of a new property it is now necessary to have all preliminary studies and calculations made. Layout plans, capacity, market possibilities and the estimated cost must be presented in the proposal for financial assistance. An allowance must always be made for working capital. If a mine intends only to produce and not to operate a sales office, it must have on hand sufficient working capital to cover at least two months' operation. On the other hand, if it decides to sell directly the coal

**The South Is Improving**

Good steel tipples like this one which the Blue Diamond Virginia Coal Co. has just finished give the South the reputation of surpassing Pennsylvania in mining advances. Monitors on an incline dump into a big bin. A steel pan conveyor feeds the shaker screens which can make six sizes of coal plus several combinations. Block and egg coal can be rescreened. Steel pan conveyor booms can load 3,000 tons into railroad cars in eight hours here.

which it produces the working capital must cover no less than six months of operation.

The most satisfactory method of financing a new mine is by the sale of common stock, but nowadays the stock purchaser is wary of speculation and wants a more assured income as from preferred stocks. Especially is this true in the financing of large companies. Bond issues in large amounts are dangerous in that they expose a company to loss of control. In this case the bond money is intended only for working capital and clearing standing debts. It is usual to issue bonds to the extent of one-third to one-half of the property value.

**Modern Mining Town in Big Sandy Field in Eastern Kentucky**

Efforts like this on the part of the mine operators do not return them any direct earnings on the investment in houses, Mr. Eavenson told the Pittsburgh Coal Mining Institute, but the indirect benefits in satisfied labor are worth having. Kentucky and West Virginia have many such towns, most of them recently built.

In a consolidation now pending involving $40,000,000 it is proposed to issue instruments in the proportion of 25 per cent of bonds, 20 per cent of preferred stock and 55 per cent of common stock. A four-month coverage of working capital is intended in this deal.

The first steps toward actual design of a new mine are the choice of track gage and type of mine car. Though in American practice the track gage ranges from 32 to $56\frac{1}{2}$ in., efforts toward standardization have established a preference for the 42-in. track gage, particularly by manufacturers, with second and third choices of 36 and 48 in. respectively.

Good properties are sometimes spoiled by poorly chosen types of mine cars. The car should be made as large and low as possible, Mr. Eavenson thinks. He has designed a steel car of the underslung type which, although it holds 3 net tons, is only 23 in. high. Southern plants take to cars of steel, a practice which has not met with much favor in the Pittsburgh district. He cannot understand why this district is backward in this particular. Acidity of mine water ought not to be an absolute deterrent. He mentioned one company mining the Pittsburgh seam that got fifteen years of service from steel in a mine whose water is $1\frac{1}{2}$ per cent sulphur. It has been his experience that the cost per year of maintaining mine cars of steel is one-third of wooden cars and that the latter are out of service 5 to 20 per cent of the time.

The solid type car is being more generally used, but drop-bottom cars are coming in. The type of mine car regulates the character of the dump as does also the output desired. For outputs near 3,000 tons from shaft mines, self-dumping cages are absolutely necessary; over this tonnage it is wise to consider skip hoisting.

Present-day requirements of the domestic market have driven the producer to the more general use of modern tipple equipment—of moving screens, picking tables and loading booms. The movement is less noticeable in the Pittsburgh field than in some non-union regions where it is not unusual to see five sizes being prepared over picking tables and lowered to railroad cars by loading booms. The extreme care with which coal is being prepared by mines in West Virginia and Kentucky may make it doubly difficult for the Pittsburgh district mines to win back their old markets.

A limiting factor for large output may be ventilation. This problem should receive careful study before the capacity of a mine is determined. Mr. Eavenson knows of one mine which may never reach its capacity of 4,000 tons a day because it gives off 2,500,000 cu.ft. of gas every 24 hr. under limiting conditions. This mine is opened up by groups of six to eight headings on the mains and is equipped with a fan which is capable of developing 400,000 cu.ft. of air per minute. However, at capacity this fan under existing conditions may work against a water gage in excess of 4 in.

In answer to a question by Francis Feehan, of the U. S. Bureau of Mines, Mr. Eavenson advised as a good investment at all mines the erection of a bath house.

To W. D. Parker, of the U. S. Bureau of Mines, he remarked that roller bearings on mine cars are economical, more so in big mines or where the haulage roads are not level. Mr. Maize asked about the place of rope, electric and conveyor transportation of coal along a 5 to 6 mile haul. He was told that electric haulage is far superior to that by rope. Where the tonnage is great enough, 4,000 tons or better, conveyor haulage bids fair to outdo even electric haulage in many cases.

State Inspector John I. Pratt, president of the Institute, sought an expression from Mr. Eavenson as to whether more extended use of machinery such as loaders and conveyors will require much greater investments for a given output than has been required in the past.

### Sees Elimination of Small Producer

It is the opinion of Mr. Eavenson that the investment will be bigger. Mechanical mining has not yet reached the stage where it might be considered absolutely successful. At least four or five mines equipped with loading machines or conveyors are doing well. The change to such devices must come and is coming. With the acceptance of complete mechanization mines may work two shifts a day and will be made bigger producers. The large investments which will be required to derive the economies of that day will be out of reach of many men who are now in the coal business. The small producer will go.

W. L. Affelder, talking on issues involving safety, frankly "laid down the law," declaring that, in great measure, mine officials and executives are responsible for the slow movement toward greater mine safety. He believes old-timers are hardened as the result of frequent accidents in the past, which they are disposed to regard as inevitable in mining. He would like to see the younger generation of officials weaned away from that idea. The tendency "to pass the buck" is too prevalent when accidents occur. There is too much disposition to look for an alibi and to put the responsibility on the shoulders of the unfortunate victim. Before workman's compensation was put into effect more zeal was exercised in looking for contributory neglect than in seeing to the victim's welfare. He is afraid this attitude is still too much in vogue.

Prior to his attendance at an executive meeting of the Western Pennsylvania chapter of the National Safety Council recently, he himself held the view that accident is the necessary toll of the industry. But he had that notion knocked out of his head during an exchange of experiences by members at this gathering. He retold the experiences of the Carnegie Steel Co. at its Duquesne plant.

By an intensive safety campaign the Carnegie company has succeeded in bringing down gradually what had been held as a normal accident rate in the steel industry to the point where the company is justly proud of its achievement. The plant employs 6,700 men; during the first 27 days in May the plant operated not only without a fatal accident; but it succeeded in avoiding even a single lost-day accident.

In 1924 the bituminous mines of Pennsylvania suffered 10.83 fatal accidents in each million man-days. His company last year had five fatal accidents for each million man-days. At the former rate based on the loss in bituminous mines of Pennsylvania the Carnegie Steel Co. could not have been criticized by the coal industry had it had two fatal accidents in its Duquesne plant during the time it maintained a clean slate. Mr. Affelder, in sulphurous language demanded to know why the coal industry can't do regularly as well as the Carnegie Steel Co. did in May.

"It can be done, I don't know how," he said, "but I'm going to find out." Accident prevention requires a different angle of approach. He is afraid too many attempts have been made to hammer safety home whereas, logically, it is better to use a milder and more personal approach. It is necessary to throw the burden on the individual by creating in him a *desire* to be safe rather than to *force* him to it.

Officials always ought to be on the alert for opportunities in which men might get hurt. Avoidable means of accident should be removed at any cost, inasmuch as the danger is great enough from unavoidable accidents. Many officials pat themselves on the back because they have records of non-fatalities over long periods. This is wrong because the line of demarcation between the occurrence of non-fatal accidents on the one hand and of fatal accidents on the other may be slight indeed. Exactly the same conditions and agents may be present in both.

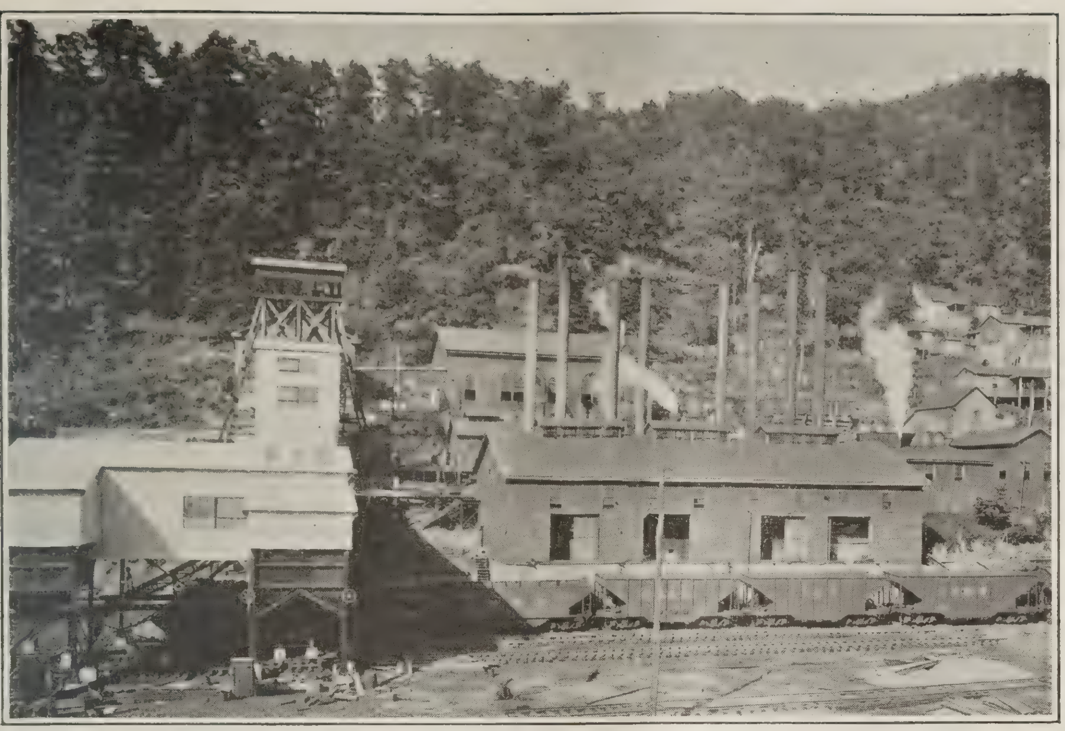
For instance, one of Mr. Affelder's miners was squeezed about the hips between a rib and a mine car. The injury was minor but it would have been fatal had the man been squeezed farther up on his body. Another of his miners was borne down to a crouching position by the fall of a 3-ton rock. The man escaped injury, but by all laws of chance he should have been killed outright. It is equally necessary to guard against conditions which might cause trivial accidents.

He does not believe in disciplining. A man resents it and is liable foolishly to satisfy himself by getting back at the boss. For instance, if a man is disciplined for not setting a post in his working place, the next time and during the interval between two visits of the boss he might deliberately work under an unsupported roof which ought to be propped by two posts. How much better it is to appeal to the negligent miner's love of family to induce him to practice safety.

### Feehan Presents Accident Costs

Mr. Feehan gave some figures on the cost of accidents in the anthracite field during the first four months of 1925. During that period, the Department of Labor and Industry of Pennsylvania reports, there occurred the loss of 1,300,000 man-days. This, of course, included many trivial cases of injury. At this rate for the entire year and at $5 a day the loss to the mine workers in round numbers would be $20,000,000. The loss to the anthracite mine owners would be equally as great.

Speaking for the U. S. Bureau of Mines on the work of the Joseph A. Holmes Association, J. J. Forbes, of the safety extension service division, said the real solution lies in systematic organization and co-operation, which can be secured through chapters of this association. The association reaches the men, women and children with its story by mixing safety talks with entertainment and refreshment in community gatherings. Of the 136 chapters organized by the Bureau there are 25 in Alabama. In that state the movement has been entirely successful. The Standard Oil Co. reports that at its Baton Rouge (La.) plant where the Joseph A. Holmes plan is in operation, after eighteen months of education 5,000 men worked forty-seven days without a lost-day accident. The general



**No. 1 Mine, Superior, W. Va.**

This mine is owned by the Lake Superior Coal Co., of Cannelton, W. Va., and located about three miles from Welch. It operates the Pocahontas No. 3 which, as will be noted, is reached through a shaft. The coal is from 42 to 72 in. thick. At Welch the beds are well below water level. It was for this reason that development around the capital city of McDowell County was slow. Of recent years the growth in this part of the smokeless field has been rapid.

manager of a coal company in Alabama, who at first was reluctant to give the plan a trial, admits that the chapter which he finally did establish did more in five months than all other efforts combined had done in five years.

In accordance with the plan of the Institute to present to the members all phases of mining, S. A. Taylor, consulting mining engineer, of Pittsburgh, Pa., was put on the program to talk on "Drilling for the Proving of a Coal Property and Other Allied Purposes." He outlined the three methods of drilling followed—core drilling, spudding and hand drilling.

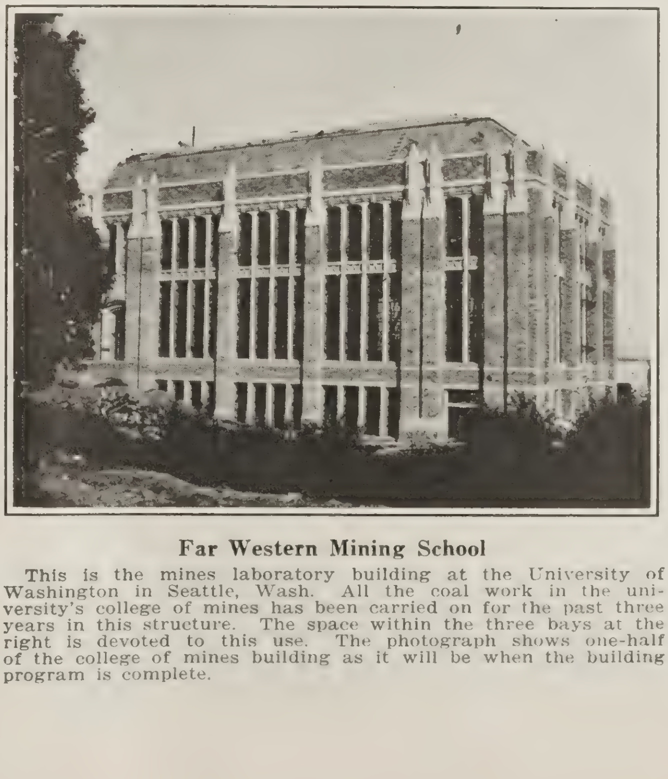
In core drilling he said it is better to use the diamond drill than the cold-shot drill because the latter is apt to break up friable coal whereas the former will give a true core sample. Spud drilling has its use in sinking holes for pump lines and power cables and for determining the elevation of coal. He believes the maximum diameter of a hole that can be made by a spud drill is 24 in. This diameter will afford a large area for wires, pipes and even for ventilation. He believes this method of drilling will be perfected and will aid in the ventilation of gassy mines as, for instance, in Greene County, Pa., where much gas is encountered. The greatest difficulty thus far experienced in spud drilling is in keeping the hole straight.

Hand-drilling, of course, is confined to light cover where it is particularly useful in proving stripping properties. He gave this tip: If the strata above a stripping property is too hard for hand drilling, it is likely to be too hard for steam shovel operation without the use of excessive quantities of explosive.

A diamond drill hole which strikes a fault or want is not wasted. A study of its core will reveal useful information and the hole itself will serve as a gage for the putting down of other holes around it in determining the extent of the wanted area.

Where any doubt exists as to the persistence of the a seam, as in the Freeport measure, it is well to drill ahead of advancing main entries so that if a wanted area is discovered the mine layout may be altered to avoid unnecessary expense.

With $300 of the dues collected from its 1,000 members the Institute is having prepared three engraved parchment trophies for the best low accident records of companies in the area the organization covers. One trophy will go to the record company mining the Pittsburgh seam in Allegheny and Washington counties, and that part of Westmoreland County on or west of the Youghiogheny River to the Fayette County line. The second will go to the winner in the thick Freeport seam. The third will be given to the company having the best record in the two districts. The winners will keep these trophies and new ones will be presented each year. The records will be determined on the basis of the ratio of tonnage to lost-time accidents, the latter to be weighted in accordance with the International Industrial Accident Committee standard.



**Far Western Mining School**

This is the mines laboratory building at the University of Washington in Seattle, Wash. All the coal work in the university's college of mines has been carried on for the past three years in this structure. The space within the three bays at the right is devoted to this use. The photograph shows one-half of the college of mines building as it will be when the building program is complete.

# Anthracite Operators and Miners Still Far Apart On Leading Issues in Wage Controversy

**By Sydney A. Hale**
Special Contributor, *Coal Age*
New York City

LITTLE PROGRESS and no agreement upon any of the controverted points marked the first week's negotiations of the subcommittee of the anthracite operators' and miners' meeting at the Hotel Traymore, Atlantic City, N. J., July 14-17, to consider the demands framed at the tri-district convention of the hard-coal workers at Scranton, Pa., earlier in the month. The question of the wages to be written into the contract to succeed the present one expiring on Aug. 31 was discussed in only the most general terms. The issue of the check-off, about which the battle raged in 1922, was mutually avoided.

Spokesmen for the producers, however, made it clear that they were in deadly earnest with respect to the two cardinal points in the address made by S. D. Warriner, chairman of the Anthracite Operators' Conference, at the first general session of the full joint committee—appended to this report. These points were the desire of the producers to make an agreement with the miners which would eliminate any possibility of a suspension on Sept. 1 and that it would be suicidal for the industry to attempt to increase the price of its product in the face of existing, vigorous competition with other fuels. Every strike in the anthracite region, it was pointed out, had resulted in the permanent loss of business in some sections of the country and the operators want to encourage no further curtailment of their potential and actual markets.

Although no official statement was made by the representatives of the mine workers, unofficially they indicated that they still stood with President Lewis in his rejection of the proposal to continue work after Aug. 31 if no agreement had been reached by that date, and to submit disputed points to arbitration. This, they said, would only prolong negotiations indefinitely.

### Miners Want Railroads to Foot Bill

On behalf of the miners the theory that an increase in wages could be met by a reduction in freight rates which would permit an increase in mine prices to cover a boost in pay and still leave something to the consumer was again advanced. The refusal of the operators to join with them in a petition to the Interstate Commerce Commission to take such action was stressed heavily. It was pointed out that these rates are now before the Commission in the general investigation instituted by that body two years ago on the recommendation of the United States Coal Commission and that the United Mine Workers have taken no active part in those hearings. When the question was asked how any investigation into rates started now could possibly be concluded before the expiration of the present wage agreement, the miners had no answer.

There were evidences of irritation upon both sides when the subcommittee began its labors. The fact that Mr. Warriner and W. J. Richards, president of the Philadelphia & Reading Coal & Iron Corporation, felt that their long service justified their retirement from subcommittee membership led to charges from the miners' camp that the operators were purposely prolonging the negotiations by asking the union representatives to deal with "second string" men. The fact that Mr. Lewis had quit the conference to repair his fences in the bituminous regions and that International Vice-President Philip Murray, his substitute, did not put in an appearance the first day the subcommittee met last week did not put the producers in a more friendly frame of mind. Considerable quiet resentment was expressed over the attack upon the operators' membership on the subcommittee, including as it does the head of one of the largest companies and executives of others whose positions put them in close touch with the labor situation. It was further emphasized in defense of these representatives that they had full power to act. The union representatives, on the other hand, are bound by the demands of the tri-district convention and any modification of those demands which they might agree to are not binding upon the workers unless ratified by that convention.

### Sensitive to Public Criticism

The sensitiveness of both sides to public criticism was again emphasized when plans to adjourn over the present week were abandoned. It had been tentatively announced that the subcommittee would recess on July 17 to July 28. This was for the purpose of giving Rinaldo Cappelini, president of District No. 1 and a member of the subcommittee, an opportunity to preside over the district convention at Wilkes-Barre, Pa., which opened July 20, without absenting himself from the subcommittee sessions. Editorial comment on the "leisurely" fashion in which the negotiations were proceeding brought about a quick change in program. Two sessions, instead of one, were held on Thursday and when the meeting adjourned early Friday afternoon the next session was set for July 21. Both sides were prompt to deny responsibility for delaying the proceedings.

Discussion of the last two clauses of demand No. 2 of the miners was as far as the subcommittee got at the first day's session (July 14) last week. These clauses read as follows:

> " . . . that the contract laborers' increase now being paid by the operators shall be added to the contract rates; that the differential in cents per day between classifications of labor previous to the award of the United States Anthracite Coal Commission shall be restored."

Prior to the supplemental agreement of Nov. 1, 1918, signed during the regime of the United States Fuel Administration, payment of contract laborers had always been taken care of by the contract miner. That agreement, however, in making an advance in laborers' rates, split the payment between the operator and the contract miner. This system was continued by the award of the United States Coal Commission in 1920. That award carried a 17 per cent increase to the laborers, but also provided that the contract miner was to assume and pay "so much of said increase as shall be represented by the application of 65 per cent to the rate per basic shift, as established under the agreement of May 5, 1916, and the difference between said amount and the total increase to the contract miners' laborer shall be assumed and paid by the operator." The basis of the percentage division was the fact that the same award increased contract rates 65 per cent over the 1916 figures.

On behalf of the miners it is contended that this system leads to confusion and dispute and that a return to the method in vogue prior to 1918 is in order. In the subcommittee meeting they claimed that the demand could be worked out on a percentage basis. The question raised was whether a return to the old system would not be as provocative of disputes as the present method. Consideration of the demand was continued in order to give the miners a chance to submit concrete examples of how their proposed percentage plan would work out.

**W. W. Inglis**
Chairman of the Operators' Subcommittee in wage negotiations with Union Representatives

The supplemental increases in wages allowed during the war were based upon the rates fixed by the 1916 agreement. Barring certain specified classes of labor on the day basis, increases to company men fell into two groups—increases to company men receiving less than $1.54 per day under the 1916 contract and increases to men receiving more. The final wartime agreement (November, 1918) gave the higher paid men increases of $1.80 and $2 per day over the 1916 bases; to the lower paid groups, an advance of $1.20. The 1920 award also recognized the same two major divisions and gave the higher rated group an increase of 17 per cent over 1918 rates, subject to a minimum rate of 52½c. per hour or $4.20 per shift. These rates were increased 10 per cent in 1923 by the Pinchot settlement.

The minimum rate proviso of the 1920 award had the effect of narrowing some of the differentials that had previously existed. For example, an outside company man receiving $1.55 per day under the 1916 rates by the application of the minimum provision was advanced to $4.20 in 1920; another outside employee receiving $1.60 per day under the 1916 rates came under the percentage increase and was advanced to $4.21, narrowing the differential from five cents to one cent. If the comparison is made between outside and inside company men, the fact that the 1918 agreement gave the latter a $2 advance, as compared with $1.80 to outside men, makes the changes in certain differentials still more marked.

The miners, of course, desire to retain the $4.20 ($4.62 under the Pinchot award) minimum, but argue that the old differentials should be restored as a proper recognition to the more skilled classes of labor. At the most, they say, the restoration will mean increases of only a few cents per day and will apply to only a small percentage of the workers. Beyond a general discussion of uniformity in rates, however, the subcommittee made no progress in the consideration of this clause in the miners' demands.

The sessions on Wednesday and Thursday broadened into a general discussion of the cost of production and distribution in its bearing upon wages. The miners suggested that a spread of $7 per ton between the f.o.b. mine price and the retail price at Philadelphia opened an avenue to profitable exploration in ways to advance wages without advancing the cost of coal to the ultimate consumer. From the contention that a wage advance could be met easily out of the profits of the wholesale distributors and the retailers, the line of attack was extended to include freight rates and royalties. Refusing the request to join with the miners in a petition to the Interstate Commerce Commission, the operators, as before stated, pointed out the fact that rates were now being investigated by the Commission and that that body had no jurisdiction over the question of royalties or over distribution costs other than transportation charges.

### DISCUSS QUESTION OF HAZARDS

Mr. Lewis' "blood money" argument for higher pay also claimed some attention. The operators frankly admitted that no widow or children could ever be adequately compensated in cash for the loss of a devoted husband and father. In so far, however, as it is possible to give weight to the hazards of employment in pay schedules, the producers insisted that this had already been done. Moreover, a study of accident statistics compiled by the Bureau of Mines and the Department of Labor shows a steady reduction. From 1914 to 1924 there was a 16 per cent reduction in total fatalities, the total falling from 595 to 496. Underground fatalities decreased over 17 per cent in the same decade.

Figures on a tonnage or an employee basis are still more favorable. In 1914 there was one fatality for every 152,000 tons produced; in 1923, one fatality for every 183,000 tons, an increase of 21 per cent in tonnage per fatality. For underground workers the tonnage per fatality rose from 170,000 to 208,000 tons. Fatal accidents per thousand workers declined from 3.31 in 1917 to 3.01 in 1923.

Fatal accidents per thousand employees on the railroads, it was pointed out, are 11 per cent greater. Commenting on these figures, the Department of Labor says:

"Coal mining presents less hazard than does train operation. The common opinion to the contrary is the natural outcome of the fact that mining casualties come from time to time in sudden catastrophies which excite prolonged interest on account of rescue effort, while the total railway accidents are the accumulated result of many single accidents. Coal mining is being conducted in a manner which is less dangerous to the miners than has been the case in the past."

Limitation of output was another subject touched upon in the subcommittee meetings. The miners argued that there were no restrictions encouraged by them and that to try to keep down tonnage would decrease the earnings of their own men. This argument was sharply challenged by the operators, who offered to cite actual cases.

One of the many instances of restriction in production is furnished by a strike at the Coal Brook colliery, where the men walked out because some miners had loaded more than five cars a day. The "guilty" workers were fined $10 each and, refusing to pay the fines, the local union countenanced a suspension of 11 days. In another case, the chief clerk at one of the collieries was informed that the local union had passed a resolution to discipline miners who loaded more than a certain number of cars daily. For the first offense a fine of $5 was levied; for the second, $10 and for the third, "a man would have to take his tools from the property."

In passing upon a case taken before the Conciliation Board and appealed, the umpire said that "the record stands that the weight of evidence supports the contention that the cause of the earnings of the complainants being what they are is the action of the local in endeavoring to put into effect, in violation of the agreement, a restriction of output, and the action of the complainants in limiting their output per day to the four car limit that has been set."

In another case, where a mine foreman asked two men who had finished loading their sixth car at 10:40 a.m. to load at least another car before quitting work for the day, the miner and his laborer informed the foreman that such action on their part would result in a $50 fine by the local. In still another case, the chairman of the grievance committee informed the general manager that the local union had passed a resolution forbidding any man to load more than two cars and any two men to load more than four cars. The president of one local even admitted the existence of such a rule and said it had been passed because the union did not want the operators to be able to show a large wage earned by individual miners. These cases are only a few of the many that the operators are ready to offer to uphold their contention that there is a deliberate attempt upon the part of the union to restrict the output, and, as a result, the earnings, of its members.

The final session of the week was devoted to further consideration of the split payment to contract miners' laborers and to another general discussion of wages. The latter was featured by a demand that the operators furnish the union with exhibits showing the salaries of the executive officers of the producing companies and the sums paid out in legal expenses. The operators reported that these figures were not germane to the present negotiations.

After the meeting had adjourned on Friday, Vice-President Murray of the United Mine Workers issued a statement attacking "propaganda" from the operators criticizing the failure of President Lewis to attend the week's conferences. The statement also disclaimed responsibility for any lack of progress made in the negotiations. Quoting accident statistics derived, he said, from Pennsylvania state reports and purporting to prove that three anthracite miners were killed and a like number permanently incapacitated for manual labor every day the mines worked, Mr. Murray reiterated that the present demand for increased wages was based upon the hazards of the industry.

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# Anthracite Operators Demand Either Wage Cut Or Higher Productivity

THE ANTHRACITE operators, in the first statement of their position to the miners at the joint conference in Atlantic City, July 9, declared for either a substantial decrease in wages or a substantial increase in workers' productivity if the present high scale is to be maintained. They said wages cannot be increased without raising the price of anthracite to the already harassed consumer and competitive conditions make any upward trend of prices suicidal. The operators held strongly against granting the check-off and pointed out that they already recognize the union by meeting with its representatives.

They urged the miners not to precipitate a strike Sept. 1 by quitting work in case an agreement has not been reached by that date. Instead, production should continue while the possible disagreement is dissolved by arbitration. Future suspensions ought to be avoided, the statement said, through negotiation of a long-term contract with provision for the adjustment of wages to meet changed economic conditions during the term. The statement, which was read to the conference by S. D. Warriner, chairman of the anthracite operators conference, in part, said:

"We have read your demands with something approaching amazement, because as a whole they show such utter failure to consider the realities of the anthracite situation. You seem to think that anthracite is a necessity, for which the consumer will pay any price, however high. This is not the fact. Anthracite is not a necessity. Its use is subject to the same competitive laws that govern other commodities. If we do not give good service and maintain reasonable prices, the consumer will turn to other readily obtainable fuels.

"Where is the money to come from to pay present wages, to say nothing of meeting new demands? Not from the coal consumer, because he has already indicated in no uncertain terms that he believes the price of anthracite is already too high. To attempt to increase it would be suicidal. The real issue is the extent to which labor rates and costs can be reduced.

"Mr. Lewis is authority for the statement that the only way in which fair wages can be paid is by continued increased productivity on the part of the worker, and it therefore becomes necessary for us to consider in what way this result can be achieved.

"We must have a substantial reduction in labor costs. If this can only be obtained by a reduction in existing wage scales, then we believe that we should have such a reduction. If, on the other hand, through our joint constructive efforts some plan can be devised by which the productivity of the worker can be so increased that even with the retention of approximately the same wage scales a material or substantial reduction in labor costs can be secured, then our joint efforts should be directed to that result.

"Anthracite miners at the present time are enjoying higher annual earnings than any other workers of whom we have found a record. Your annual earnings, as shown by official reports, are higher than those of such highly paid employees as railroad workers, machine shop employees, electrical workers, printers, soft-coal miners and metal miners. The average annual earnings of all anthracite employees, which includes a large proportion of unskilled labor, is upward of $2,000. The contract miners average over $2,500, or $1,200 more than the average for all industries. The average annual earnings of all anthracite employees is more than $700 above the average for all industries. Your rate of increase in wages since 1914 is 192 per cent, while in railroading the increase has been only 141 per cent; in manufacturing 129 per cent, and in building 111 per cent.

"Three years ago and again in 1923, we prophesied that the increasing cost and price of anthracite would restrict its market and result in loss and unemployment in the industry. What was then a prophecy is now about to become a reality and one from which you, the miners, no more than we, can escape.

"We are faced by increasing competition from oil, and the figures reporting the number of installations of oil-burning apparatus are startling in their proportions. An authoritative estimate is that 5,000,000 tons of anthracite in domestic consumption has been replaced by oil. Other competition comes in the form of gas for heating purposes. One of the largest gas companies in the country has just announced that it has perfected still more economic apparatus for heating. The result of this is that the use of anthracite as a summer fuel has practically ceased.

"The extension of the use of electricity is another menace. Perhaps more important than any of these is the encroachment of coke upon our market, and the number of coke producing plants is steadily increasing.

"Most of the companies are realizing less upon their production today than they did in 1923. They have absorbed a large part of the ten per cent wage increase then granted to you. They cannot continue on such a basis. A large part of the production in the past year has been marketed at a loss; another large section of the industry has seen its profits approach the vanishing point. You cannot fix wages and cost of production at a point that can be borne only by a few companies exceptionally situated.

"You will simply delude yourselves if you accept the mistaken idea that the labor cost of producing anthracite is not by far the main factor in the total cost. Seventy-five cents out of every dollar received by us is paid to you for labor. The balance of 25c. is a very narrow margin out of which to met charges for material, machinery, taxes, insurance and return on investment.

"Do not fool yourselves by looking at retail prices. By reason of transportation and distribution charges, the retail price is necessarily greatly in excess of the mine price.

"Do not fool yourselves by looking solely at the prices for the domestic sizes. Domestic sizes are no more than two-thirds of the total product; the other third is sold at a great loss, although the labor cost and all other costs in producing it are the same.

"With increasing competition and diminishing sales; confronted by the self-evident proposition, if our markets are to be retained, that the prices for our product must be made more attractive to the consumer; with a narrow margin of profit on the average, and an absolute loss on a large part of the production, are we not faced with the necessity of lowering our cost of production if we are to continue to afford the opportunity of full-time employment?

"We agree to the proposition that anthracite workers should be well paid, and in asking for wage reductions we are not departing from that proposition. Just what the amount of such reductions should be we leave for discussion by the negotiating committees.

"As to the demand for full recognition of the union, you already have full recognition in the sense in which recognition is generally defined throughout the trade union world. We negotiate with your union and contract with your union. By meeting with you here we recognize your union. On the other hand, if this demand means the check-off, it seeks something not generally demanded or practiced by other unions. You are too familiar with what the operators and the American public think of the check-off to call for further discussion of the subject by us. Our opposition to the check-off is unabated.

### LABOR PRODUCTIVENESS LOWER

"It is a fact much to be regretted that in spite of constantly increasing wages and the employment of labor-saving devices of all kinds, the productiveness of labor in our industry has diminished rather than increased; it is no better than it was when you were receiving half as much in wages and were unaided by many of the improvements that have since been introduced.

"If restrictive rules, outlaw strikes, and other uneconomic conditions are eliminated and our employees will work a full eight hours, which is the length of day agreed upon, it would be possible to increase productivity and decrease labor costs without a corresponding decrease in earnings.

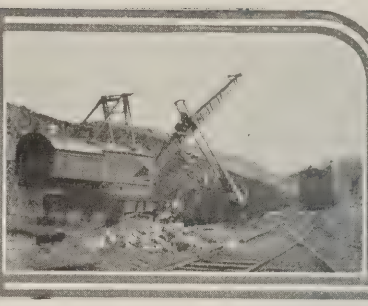
"One of the most important things for which we should jointly strive is industrial peace and uninterrupted production. The public is disturbed over periodic stoppages or threats of stoppage in the industry. In competition with other fuels, we often meet the argument that the supply of anthracite is not dependable, owing to interruptions of production through strikes. Many large sales are lost for this reason. To allay this fear and secure the confidence of the consumer we should do away with a militant attitude and settle our differences without resort to suspensions.

"Because of the differences which now arise between us, you asking for an increase in wages and we asking for a reduction, we wish to urge that provision be made at the outset against the possibility of a suspension on Sept. 1.

"Such joint action on our part would deserve public confidence. It can be accomplished by an agreement to the effect that if our respective committees are unable to agree upon any issues, such issues shall be referred to arbitration, upon the understanding that production shall be continued at the present wage scale until the arbitrators render an award.

"Let me say to you here and now that the operators are prepared to co-operate in any fair and practicable plan, not only to prevent a suspension next September, but to provide means to prevent suspensions in the future in order that public anxiety in this respect may be put at rest. This can be accomplished by a long term agreement with provision for the adjustment of wage rates during that term so that wages may be conformed to changing economic conditions."

# News Of the Industry



## Cause of Barrackville Blast Unknown; Company Is Exonerated of Negligence; May Have Been Thirty-fourth Victim

That the cause of the explosion and its source are unknown was the verdict returned by a coroner's jury at midnight, July 16, after a thorough investigation of the Barrackville (W. Va.) mine disaster in which 33 lives were snuffed out March 17, last. Throughout the day of July 16 many witnesses were called at the inquest, which was presided over by County Coroner Lloyd E. Fitzhugh in the Marion County Circuit Court room, in Fairmont. Robert M. Lambie, of Charleston, chief of the West Virginia Department of Mines, was the chief witness.

Mr. Lambie, while on the stand, testified that there was nothing shown to prove negligence on the part of the Bethlehem Mines Corporation or any of its employees. He was not convinced that a thirty-fourth body was found in the mine. The chief was of the opinion that it may have been a portion of one of the 33 bodies.

Thomas Jarrett, of Weston, a state mining inspector, testified that while on duty at the mine after the explosion, and when the cleaning-up process was under way, a company inspector had called his attention to a piece of paper that was used to enclose Monabel, a permissible. He directed that the paper be turned over to the superintendent for examination. Judging from its appearance, the paper probably had been in the mine for a long time and was trampled upon. It developed that the permissible without a cap was harmless. When the paper was exhibited in the court room Jarrett said that if it was the same paper shown to him in the mine it must have changed its color. The quantity of powder in the paper probably was equal to three sticks that had been crushed. It was found about 100 ft. away from where the torso of one of the victims was found. In the opinion of Jarrett a short-circuit from a feed cable caused the explosion. A portion that was cut off showed that it was burned in two, he added.

V. E. Sullivan, of Charleston, a state mining inspector, thought that it was a dust explosion that started near the bottom of the shaft.

In the opinion of Robert Lilly, of Mount Hope, a state mining inspector, a general coal-dust explosion resulted from an arc of a cable, which had the appearance of being roasted and blistered. In his opinion all of the force traveled from that point of the mine (2½ N. W. main butt entry).

C. W. Stuart, of Thomas, a state mine inspector, said he was of the opinion that the explosion resulted from an arc formed on a feed wire at 2½ N. W. main butt entry.

Attorneys representing the United Mine Workers attended the inquest and asked a number of questions. Although no direct charges were made, a number of press accounts intimated that the mine was dynamited.

### Evidence Found in Sump

In the opinion of M. Benton Mitchell, general superintendent of the Marion Division, the explosion occurred at the foot of the main hoist. He based this opinion upon the fact that a 9-in. brick wall in a sump at the bottom of the shaft, and a 10 x 12-in. oak timber, across the top of the brick, were blown outward from the sump. The heavy timber was broken in two. Because of moisture from water collected in the sump, Mr. Mitchell said that a dust or gas explosion at that point was impossible.

In the opinion of Frank Haas, mining engineer of the Consolidation Coal Co., there was not sufficient violence shown at the base of the shaft to support the theory that dynamite or nitroglycerine had been exploded there. He did say, however, according to press reports, that dynamite or nitro-glycerine could have been used at that point so as to cause a general explosion in the mine, but that it would have been necessary to use several hundred pounds of coal dust in such a way as to communicate the explosion to other portions of the mine and said he believed that this would have required more time than he believed any person attempting such a thing could have had. It would have been easier, Mr. Haas said, and much more logical for such a person to have scattered black powder on top of the lagging or cross-timbering, under a section of bad roof further back in the mine, because coal dust gathers on the lagging and ignited black powder would hastily precipitate an explosion.

A mine chart showed that the highest gas content of mine air samples taken from the mine analyzed 0.5 per cent and both Mr. Mitchell and Mr. Hass agreed that as much as a 5 or 5½ per cent gas content is necessary to precipitate an explosion. In the opinion of Mr. Haas if the mine was exploded he was inclined to believe that black powder was the agency rather than dynamite, because it leaves no trace. Less gas than usual was found in the Barrackville mine, it was testified to by an official of the company.

Stephen Arkwright, president of the Arkwright Coal Co., of the J. A. Paisley interests, a man of 50 years' experience in coal mining, testified that he believed that the explosion originated at the top of the main hoist. The shattered condition of the concrete at that point and the amount of débris at the bottom of the shaft seemed to indicate this, he said. Falling débris, he thought, may have broken the timbering and the brick wall at the bottom.

Much attention was paid to the unidentified torso. Dr. C. W. Waddell, of Fairmont; Undertaker R. C. Jones, of Fairmont, and John T. Moore, of the Workmen's Compensation Board of Charleston, testified that it is possible that the torso is that of a miner named Saunder, who was killed, but none would specifically say that it probably is. A torso lying for a month in the slate and dirt of the mine, it was testified, would shrink sufficiently to account for the difference in size pointed out between Saunder's in life and the torso when found.

### *New Orient Has Big Output*

The Chicago, Wilmington & Franklin Coal Co.'s mine No. 2, known as the New Orient, at Zeigler, Ill., made a new production record July 10, when one day's output reached 8,687 tons. This achievement is all the more remarkable in view of the fact that one hour was lost in operation and the mine is still in the development stage, the first coal having been hoisted from the main shaft Sept. 1, 1924. Prior to that time all coal had been hoisted from the airshaft, which is equipped for that purpose. The hoist at the New Orient is of the skip type, the coal being dumped into large hoppers at the bottom instead of the cars being hoisted to the tipple before being dumped. The mine is now working with about 100 men and has been averaging five days a week all summer, but much of the time it works six days a week. Much larger output is expected when the mine is fully developed, as the operators contemplate a capacity of 12,000 tons for it.

# Non-Union Mines Suffer Keenly from Overproduction as Output Mounts in Northern West Virginia Strike Zone

Dynamiting of a transmission line of the Monongahela-West Penn Public Service Co., between Lumberport and Dola, Harrison County, W. Va., early in the morning of July 20 is believed to have been the work of intruders, who sought to stop non-union coal production on the West Virginia short line of the Baltimore & Ohio R.R. Seven poles were dynamited. There are seven mines located on the line, but only two, Robey and Laura Lee, both plants of the Hutchinson Coal Co., have been active recently, and comparatively little coal could be run on Monday. Repairs were made late in the day.

Overproduction of coal at the non-union mines in the northern West Virginia strike area is beginning to be keenly felt. Not only are price levels being affected but some of the non-union mines that worked almost every day have dropped down to two and three days a week.

Rivesville mine of the Consolidation Coal Co., at Rivesville, Marion County, began to operate during the latter part of last week. From last reports 15 men were cleaning up the mine preparatory to actual production.

During the first four days of last week the non-union mines produced 5,247 cars of coal, and union plants loaded 852 cars. A new daily record for non-union production was reached July 14, when 1,334 cars were loaded. On the same day a new daily production was attained on the Monongah Division, B. & O., for open-shop coal production. Non-union plants along the Cumberland Division, B. & O., loaded 140 cars July 15, which also constituted a new day's loading record since the strike.

Union production showed some increases last week also when plants in northern West Virginia produced 235 cars on July 15, which was the heaviest daily tonnage loaded since April 18, when 247 cars were loaded.

Field representatives of the United Mine Workers have been busy gathering data in the region, and it is reported that some of the data in reference to abrogations of contracts will be submitted to the U. S. Department of Labor.

Van A. Bittner, chief international representative of the United Mine Workers in northern West Virginia, attended a conference in Philadelphia during the latter part of last week with Attorney W. A. Glasgow, of Philadelphia; Attorney Thomas C. Townsend, of Charleston, and Earl E. Hauck, of Indianapolis, connected with the legal department of the international union.

After union miners were engaged in cleaning up mine No. 1 of the Gilbert-Davis Coal Co., a large plant in Scotts Run, and had loaded three cars of coal, the men quit last week because they were not sure on what basis the mine was to be worked. The miners say that the company promised to operate the mine under the requirements of the New York agreement, but the company, it is reported, wanted concessions, and after Mr. Bittner refused to grant them the suspension followed. At last reports the mine remained idle. The company operates several non-union mines along the Monongahela Ry.

A protest was entered with Governor Howard M. Gore over the presence of C. E. Lively, a mine guard who figured in the Sid Hatfield-Chambers episode in Mingo County. The miners alleged that he was in the employ of the Bethlehem Mines Corporation at Barrackville, but later stated that it was the Chesapeake mine of the Fairmont-Chicago Coal Co., of Fairmont, and closely allied with the Fairmont & Cleveland Coal Co. At the Governor's request Lively was relieved of duty at Rivesville and later in the Clarksburg field. Under the new law for issuance of pistol licenses, which will soon become effective, the Governor has the power to revoke licenses where he deems it in the interest of peace and policy. It is reported that the Governor's representative roundly scored Marion County officials for issuing a license to Lively.

### Flemington Section Quiet

Quiet again reigns in the Flemington section, where it is said that a number of non-union coal operators have abandoned precautionary measures against mine depredations and have discharged the mine guards at some of the plants. Huge searchlights that have been in use for almost a year are being dimmed at Flemington, Rosemont and Simpson, but at Wendel, where the United Mine Workers have been picketing persistently for many months, the searchlights and guards are retained. Penitentiary sentences for three union miners and indictments pending against six others have been responsible for a general quieting down in that section. Delmar Mine No. 1, at Flemington, is being cleaned up and will work non-union within a short time.

According to reports from Wheeling, union miners at Mine No. 3 of the Paisley interests, at Elm Grove, and also at Lucy mine, across the river, in Ohio, quit July 15, due to an attempt to delay the periodical pay. The company stated that it had made large sales of coal on which it could not collect before July 20. Officials of the union advised the miners to return to work. It is reported that the miners have agreed to the plan, which is a nominal loan to the company, instead of forcing it to borrow money at 6 per cent to meet its payroll. It is said that this courtesy is being extended to Paisley interests in all of the union fields.

Federal authorities left Pittsburgh last week with Antonio Altipiede, a coal miner of Beckley, W. Va., whom they will deport from New York City to Italy as an undesirable alien. Better known as Tony Stafford, he served as international board member in District No. 29 at Beckley. He was convicted of dynamiting coal property of the E. E. White Coal Co. at Glen White in 1917, and had just completed serving five years in the West Virginia State Penitentiary at Moundsville.

**Main Shaft and Tipple, Mine No. 41, Barrackville, W. Va.**

A view of the shaft of this mine of the Bethlehem Mines Corporation in which thirty-three men were killed in an explosion March 17, 1925. After a thorough investigation an inquest held at Fairmont, W. Va., July 16, failed to reveal the cause of the disaster.

Among developments in the panhandle strike district last week was the action of Federal Judge W. E. Baker, at Elkins in sentencing Frank April, a striking employee of the West Virginia-Pittsburgh Coal Co., of Colliers, Brooke County, to serve six months in the Ohio County jail, on July 15, for contempt of court. He was accused of violating Judge Baker's injunction forbidding "peaceful persuasion."

By an agreement reached July 13, 149 union coal miners, many of whom are heads of families, will vacate houses of the West Virginia-Pittsburgh Coal Co. of Wellsburg, Brooke County. Attorneys for the coal company and the union miners came to an agreement to vacate if the men were given an additional 30 days. The miners will be housed in tents, according to William Roy, vice-president of the Ohio miners, who is in charge of the strike, and steps have been taken already to provide them. Joseph Angelio, international representative, will have charge of the miners vacating the properties. Judge J. B. Sommerville in circuit court congratulated both sides for waiving separate trials, which would have dragged out the hearings for a month or more.

Pearl Dooley, president of the Wellsburg local union of the United Mine Workers, is being held in the Brooke County jail without bond on a charge of conspiracy alleged to have been formed to blow up the Gilchrist mine of the West Virginia-Pittsburgh Coal Co. It is charged that he aided and abetted in the escape of the third of the alleged conspirators, George Johnson, brother of Jesse Johnson, a negro miner, who is charged with placing 165 sticks of dynamite in the generator and fan house of the mine, which was discovered by inspectors just before 140 employees went to work.

## Trade Information Committee Named by N.C.A.

The National Coal Association has taken steps to function as a joint agency to collect trade information from the producing units of the bituminous coal industry and to disseminate this information in summarized form. C. E. Bockus, president of the Clinchfield Coal Corporation, Virginia, heads a special committee to define such a program for consideration of the directors. The other committee members are: J. G. Bradley, president, Elk River Coal & Lumber Co., Dundon, W. Va.; H. N. Taylor, president, United States Distributing Corp., New York City; W. J. Freeman, president, Bon Ayr Coal Co., Terre Haute, Ind.; T. W. Guthrie, president, Hillman Coal & Coke Co., Pittsburgh, Pa.

Other standing committees named by President Morton L. Gould are as follows:

Executive Committee — M. L. Gould (chairman), president, Linton Coal Co., Indianapolis, Ind.; Walter Barnum, president, Pacific Coast Co., New York City; C. E. Bockus, president, Clinchfield Coal Corp., New York City; Ira Clemens, vice-president, Clemens Coal Co., Pittsburg, Kan.; W. H. Cunningham, president, Meriden Smokeless Coal Corp., Huntington, W. Va.; Michael Gallagher, general manager, M. A. Hanna Co., Cleveland, Ohio; Geo. B. Harrington, president, Chicago, Wilmington & Franklin Coal Co., Chicago; S. Pemberton Hutchinson, president, Westmoreland Coal Co., Philadelphia, Pa.; P. H. Penna, secretary, Indiana Bituminous Coal Operators Association, Terre Haute, Ind.; H. N. Taylor, president, U. S. Distributing Corp., New York City; R. C. Tway, president, R. C. Tway Coal Co., Louisville, Ky.

Finance—C. E. Bockus (chairman); S. Pemberton Hutchinson; F. W. Lukins, president, Farmers Fuel Co., Kansas City, Mo.; P. J. Quealy, president, Gunn-Quealy Coal Co., Kemmerer, Wyo.; S. H. Robbins, president, Youghiogheny & Ohio Coal Co., Cleveland, Ohio; S. L. Yerkes, vice-president, Grider Coal Sales Agency, Birmingham, Ala.

Foreign Trade—H. N. Taylor (chairman); C. W. Gibbs, secretary, Coal Operators Association of Thick Vein Freeport Seam of Pennsylvania, Harwick, Pa.; J. L. Good, sales manager, National Coal Co., Cleveland, Ohio; John Laing, president, Wyatt Coal Co., Charleston, W. Va.; R. D. Patterson, president, Weyanoke Coal & Coke Co., Lowe, W. Va.; J. W. Whatley, general manager of sales, DeBardeleben Coal Corp., Birmingham, Ala.

Government Relations—W H. Cunningham (chairman), president, Meriden Smokeless Coal Corp., Huntington, W. Va.; H. F. Bovard, president, Keystone Coal & Coke Co., Greensburg, Pa.; A. W. Calloway, president, Davis Coal & Coke Co., Philadelphia, Pa.; Michael Gallagher; Sidney J. Jennings, vice-president, U. S. Smelting, Refining & Mining Co., New York City; J. E. Johnson, secretary, Hazard Coal Operators Exchange, Lexington, Ky.; J. J. Lincoln, general manager, Crozer Coal & Coke Co., Elkhorn, W. Va.; F. S. Love, president, Union Collieries Co., Pittsburgh, Pa.; A. J. Maloney, vice-president, Chicago, Wilmington & Franklin Coal Co., Chicago; J. B. Pauley, vice-president, J. K. Dering Coal Co., Chicago; J. G. Puterbaugh, president, McAlester Fuel Co., McAlester, Okla.; P. J. Quealy; R. H. Sherwood, president, Central Indiana Coal Co., Indianapolis, Ind.; D. B. Wentz, president, Stonega Coke & Coal Co., Philadelphia, Pa.; F. W. Wilshire, vice-president, Consolidation Coal Co., New York City.

Membership—S. Pemberton Hutchinson (chairman); Walter Barnum; Ira Clemens; C. C. Dickinson, president, Dry Branch Coal Co., Charleston, W. Va.; Geo. B. Harrington; F. S. Love; Ezra Van Horn, general manager, Clarkson Coal Mining Co., Cleveland, Ohio; F. P. Wright, general manager, Crescent Coal Co., Bevier, Ky.

Publicity — Geo. B. Harrington (chairman); D. B. Cornett, president, Cornett-Lewis Coal Co., Louisville, Ky.; Telford Lewis, general manager, Jasahill Coal Co., Johnstown, Pa.; L. C. Madeira, 3d, assistant to president, Madeira-Hill & Co., Philadelphia, Pa.; W. J. Sampson, president, Witch Hazel Coal Co., Youngstown, Ohio; P. M. Snyder, president, East Gulf Coal Co., Mt. Hope, W. Va.; W. E. Watson, president, Fairmont & Cleveland Coal Co., Fairmont, W. Va.

Research—Walter Barnum (chairman); Warren Blauvelt, president, Vigo Mining Co., Terre Haute, Ind.; J. G. Bradley; Thos. DeVenney, superintendent, Portsmouth By-Product Coke Co., Edgarton, W. Va.; Marshall J. H. Jones, vice-president, Bertha Consumers Co., Pittsburgh, Pa.; M. B. Lanier, president, Monro-Warrior Coal & Coke Co., Birmingham, Ala.; J. B. Pauley; E. L. Thrower, general manager, Warner Collieries Co., Cleveland, Ohio.

Safety — P. H. Penna (chairman); Thomas G. Fear, secretary, Inland Collieries Co., Indianola, Pa.; V. N. Hacker, president, Pruden Coal & Coke Co., Knoxville, Tenn.; Cadwalader Jones, vice-president, By-Products Coal Co., Wheelwright, Ky.; M. E. Kent, general manager, Cleveland Cliffs Iron Co., Ethel, W. Va.; W. L. Robinson, vice-president, Youghiogheny & Ohio Coal Co., Cleveland, Ohio; C. W. Taylor, vice-president, W. G. Duncan Coal Co., Greenville, Ky.; J. William Wetter, general manager, Madeira-Hill Coal Mining Co., Philipsburg, Pa.

Tax and Cost Accounting—R. C. Tway (chairman); H. C. Marchant, vice-president, Superior Rock Springs Coal Co., Ogden, Utah; Otis Mouser, vice-president, Stonega Coke & Coal Co., Big Stone Gap, Va.; W. P. Tams, Jr., president, Gulf Smokeless Coal Co., Tams, W. Va.; Geo. J. L. Wulff, president, Western Coal & Mining Co., St. Louis, Mo.; Paul Zimmerman, president, Zimmerman Coal Co., Terre Haute, Ind.

Transportation—Ira Clemens (chairman); W. L. Andrews, vice-president, Consolidation Coal Co., Baltimore, Md.; J. S. Brennan, secretary, Somerset County Coal Operators Association, Somerset, Pa.; Roy Carson, traffic manager, Harlan, Hazard & Southern Appalachian Coal Operators' Association, Louisville, Ky.; E. T. Evans, general-manager, E. T. Evans Coal Co., Coalton, Ohio; T. F. Farrell, second vice-president, Pocahontas Fuel Co., Inc., New York City; C. A. Garland, traffic manager, Hillman Coal & Coke Co., Pittsburgh, Pa.; S. C. Higgins, secretary, New River Coal Operators Association, Mt. Hope, W. Va.; D. F. Hurd, secretary, Pittsburgh Vein Operators Association of Ohio, Cleveland, Ohio; C. H. Jenkins, vice-president, Hutchinson Coal Co., Fairmont, W. Va.; L. C. Madeira, 3d; E. C. Mahan, president Southern Coal & Coke Co., Knoxville, Tenn.; A. J. Maloney; C. J. Neekamp, secretary, Northeast Kentucky Coal Association, Ashland, Ky.; J. B. Pauley; C. F. Richardson, president, West Kentucky Coal Co., Sturgis, Ky.; H. N. Taylor; Jonas Waffle, traffic manager, Indiana Bituminous Coal Operators Association, Terre Haute, Ind.; C. E. Warner, traffic manager, Southwestern Interstate Coal Operators Association, Kansas City, Mo.; H. T. Wilson, president Red Jacket Consolidated Coal & Coke Co., Columbus, Ohio; A. R. Yarborough, traffic manager, Kanawha Coal Operators Association, Charleston, W. Va.

## *Virginian Plans Big Outlay For New Equipment*

The Virginian Railway Co. has applied to the Interstate Commerce Commission for authority to obligate itself for the purchase of thirty-six electric locomotives to cost $4,815,410. The locomotives are to be manufactured by the Westinghouse Electric & Manufacturing Co. and are to be of split-phase, constant-speed type of 11,000 or 22,000 volts.

The Norfolk & Western also has filed formal application for authority to lease the Virginian Ry. The purpose is stated as a desire for a western outlet, in connection with which it is proposed to construct fifty-three miles of line from Elmore to Gilbert and thence to Wharncliffe, W. Va. One of the economies which will be effected, it is stated, is the utilization by the Norfolk & Western of the excess power and electric locomotives of the Virginian company in connection with the electrification of a portion of its own lines.

## Government Still Hopes to Avert British Coal Strike

No apparent progress has been made in Great Britain toward a new coal agreement, but there are as yet no indications of a strike, according to cable advices to the Department of Commerce from Trade Commissioner C. E. Lyon, London. Separate meetings of the owners and miners, however, continue to be held. The miners have rejected the proposal of a renewed joint conference. The Miners' Federation has decided to meet in Paris on July 28 to consider joint international action if no settlement of the British situation has been reached by that time.

The government seems to be still hopeful of solving the crisis despite the mine workers' refusal to accept the proposed court of inquiry into their dispute with the mine owners. The court, it is believed, will be held whether the miners adhere to their refusal or reconsider their decision.

The government could legally demand their attendance, but such a step is altogether unlikely. The owners profess to be willing to attend the court, whether or not the miners do so.

The Ministry of Labor states that there is no possibility of a government subsidy, the present crisis being due to a general depression in the industry, making internal readjustment necessary, with both sides giving concessions. The coal situation continues to grow worse, 500 pits having been closed during the last 12 months. Unemployment reported on June 22 was 286,700 greater than a year ago. Unemployment in the coal industry accounts for much of the increase. The railway situation also is causing much concern. This problem is linked up with that of coal, as one of the tentative proposals for cutting coal prices to meet foreign competition is to reduce shipping costs. The railways, however, protest against such a reduction.

## To Tap Huge Utah Field

It is announced that the Denver & Rio Grande Western R.R. will in the near future tap a coal field of 25,000 acres in Sevier County. Sons of the late Anthony H. Lund, member of the supreme presidency of the Mormon Church, own or hold option or federal lease upon the entire area. The first filings were made thirty years ago. In the 90s the D. & R. G. W. constructed a branch line up Salina Canyon with the intention of tapping this field. The branch was completed as far as Nioche. There are about 13,000 acres of patented ground and 12,000 acres under federal permit.

Where exposed the bed is from 15 to 20 ft. thick and above it is an overburden of several hundred feet of solid sandstone from which the coal parts smoothly. It is said that the coal has a clean facing which runs from top to bottom of the seam, the floor being smooth, consisting of a hard sandstone.

It is said the railroad will spend around $1,000,000 on building the necessary branch line. An official of the road said the new branch line will leave the present main line at Salina and that it will be of broad-gage.

# Passing of Bulldozing Tactics in Wage Negotiations Gratifying to Washington Government Circles

### Launching of Adequate Statistical Program by National Coal Association Likely to Take Edge Off Oddie Bill—Success Seen in Choice of Strong Committee

By **Paul Wooton**
Washington Correspondent of *Coal Age*

Washington is rather surprised at the absence of fireworks at the first meetings of the anthracite conferees at Atlantic City. It is realized, of course, that neither side takes very seriously the interchanges that have taken place thus far. Mr. Lewis' speech was a repetition of what he has said before under similar circumstances.

A distinct impression was made by the plea of S. D. Warriner. No more temperate or dignified utterance ever was made on either side of a wage controversy, many think. The attention given his speech in the daily press was unusual in view of the absence of sensational material. It probably will not make much of an impression on the United Mine Workers, but coming at the time when the public mind was in a formative state it is expected to win much support for that viewpoint.

The tolerant, tactful utterances of Mr. Warriner are in marked contrast with those of the late George F. Baer, who was one of the spokesmen for the industry in 1902, and is more nearly calculated to win public support.

An idea of the way an outsider sees the existing situation may be had from the writings of William Hard, who compares the Mine Workers to the children of Israel and the rock in the wilderness. The children of Israel did not question how the rock produced the water that flowed from it. In like fashion the Mine Workers have been smiting the coal industry. In the past all they have had to do was to smite hard enough and the reward for their effort was forthcoming. There are no indications that the Mine Workers at this time are particularly concerned as to the source of the rock's water. The picture drawn by Mr. Warriner of loss of markets to bituminous coal, to coke, to gas and to electricity seems not to impress them. They are not interested in making a good showing on economic grounds when their chances are so much better to win if the contest can be made political. Encouragement to that end is coming from Swampscott.

Adequate statistics for coal were brought measurably nearer when Secretary Gandy of the National Coal Association induced C. E. Bockus to head the committee which will formulate the program. Perusal of the list of members of the committee is all that is necessary to show how carefully it was chosen. If any men in the bituminous industry can induce the producers of coal to submit figures it is they, but even they are certain to be put on their mettle, especially if they recommend returns on costs, realizations and margins, to say nothing of wages and earnings — figures which hardly could be expected from an organization part union and part nonunion.

The strength of this committee is evidence of full appreciation that the association no longer can forego a leading part in a thoroughgoing statistical program. Congress and the public apparently believe that figures are essential to a diagnosis of the industry's ills. There is a suspicion that refuge has been taken behind alleged fears as to illegality. As such an excuse can be advanced no longer a showdown must come. If the industry will furnish adequate figures of its own, it will take punch out of the Oddie bill and make for a better situation if the Federal Trade Commission should win the Maynard suit.

The ideal statistical set-up would be to have vigorous local associations federated into a national organization which would be a clearing house for the figures and the principal broadcasting station for their dissemination to the public. This latter is regarded as essential to compliance with the interpretation of the law as to secret figures.

As there always will be some producers who will not want to deal with an association, it is recognized that it would be extremely difficult for the industry to gather its own production figures where 100 per cent returns are essential. It also would be necessary, it is believed, for the government to gather figures on stocks and consumption—information for which the producers hardly could ask.

#### Need More Expenditure Data

The industry, in addition to the financial statistics which many companies do not want to give, could report the amount of coal shipped on contract and the amount shipped on spot. Shipments by grades also would be helpful and there is a crying need for data as to how much coal mines pay in taxes to federal, state and local governments. With the coming of workmen's compensation, insurance has become a heavy item of cost. More data covering those expenditures are needed.

For many years a dozen or more manufacturing enterprises have increased their efficiency greatly by a system of comparative costs. Each plant reports detailed costs to a central clearing house. The cost of each operation is averaged and the average figures returned to each plant. The manufacturer then is able to spot those operations in his plant which are abnormally high. It directs scrutiny to the exact point where scrutiny is needed. While these comparatvie costs are not so readily applicable to mining operations, something along that line can be resorted to profitably, it is believed. No question ever has been raised as to the legality of that type of statistical activity.

While the National Coal Association probably would not be the agency to do it, there is an increasing demand for statistics covering wages and earnings. Wage conferences in the future must be based on economic considerations. The days of bunk and bulldozing at such conferences are about to pass. The United Mine Workers already has recognized this and despite the depleted state of its treasury is spending a large amount of money in gathering these data. So far as is known no such figures are being gathered by the operators. Unless these figures are gathered they will be at a great disadvantage at the next wage conference.

## *New Premier Moves to End Nova Scotia Strike*

A move to adjudicate the strike of 12,000 miners employed in Cape Breton collieries of the British Empire Steel Corporation has been taken by the new Conservative Government in the arrangement of a conference between mine, labor and government officials. Premier E. N. Rhodes and Colonel Harrington, Minister of Public Works and Mines, went to Cape Breton July 20 to confer with company officials and leaders in the local district of the United Mine Workers. Coincident with the notice of the conference, announcement was made of an order to withdraw from Cape Breton 100 provincial police, who have been on duty in the strike area since the outbreak of rioting.

A resolution asking the new Premier-elect to insure the immediate resumption of mining operations and to extend financial relief to those now in want, to the end that "the calamity of starvation and disorders may be averted," was passed at a meeting at Sydney, July 9, of Mayors D. W. Morrison, of Glace Bay; P. G. Muise, of New Waterford; A. C. McCormick, Sydney Mines; J. L. McLean, of Dominion; Munroe, of Stellarton, and Wilson, of Springhill.

## D. & H. Stockholders to Vote On B. R. & P. Lease

A meeting of the stockholders of the Delaware & Hudson Co. has been called for Sept. 8 to vote on the proposed lease by the company of the Buffalo, Rochester & Pittsburgh Ry. Managers of the D. & H. approved the lease June 24 and the B., R. & P. directors May 1. The lease provides payment of rental sufficient to pay 6 per cent. annual dividends on the outstanding preferred and common stock and the fixed charges. In a letter to the Delaware & Hudson stockholders President Leonor F. Loree, who engineered the deal, says that he is "confident the terms of the lease are advantageous."

## White and Pugh Appointed on Mines Bureau Committee

To comply with a request from J. Edgar Pugh, president of the American Petroleum Institute, it is probable that no meeting of the Bureau of Mines Advisory Committee will be held until the end of the month. Mr. Pugh has designated D. M. Folsom, of San Francisco, to represent the Petroleum Institute on the committee. He has asked particularly that sufficient time be given for him to come East to attend. As this is written, no call for a meeting of the committee has been issued, but it is expected that chairman Reynders will comply with Mr. Pugh's request.

C. P. White, the coal specialist on Secretary Hoover's staff, will act as secretary to the advisory committee. The selection of Mr. White is regarded as having added materially to the strength of the committee. Mr. White is a retired coal operator who believes successful men have an obligation to the state which can be discharged by undertaking public service. His handling of the coal situation in the Northwest and arranging for Canadian supplies during the war is regarded as one of the most striking pieces of administrative generalship of that strenuous period. His acquaintanceship with industry and his ability as an organizer will stand the advisory committee in good stead, it is believed.

In addition to the naming of a member for the Petroleum Institute the Iron and Steel Institute has been asked to name a member. It is probable that the committee will be expanded further, as much pressure to that end already is being exerted. The difficulty in assembling a large committee with its membership drawn from different parts of the country makes it seem probable that much of the work will be done by a small subcommittee which can spend most of its time in Washington. It probably will be necessary to grant hearings to some interests who are not in accord with some phases of the Bureau's present work. Such a subcommittee would be able to reduce to their essentials all matters coming before the committee so that the committee itself could reach its decisions without undue consumption of time.

## Will Urge Ford to Link D. T. & I. to Kentucky Road

Austin Fields, brother of Governor William J. Fields of Kentucky announced July 16 that he is going to appoint a committee of Grayson (Ky.) business men to consult Henry Ford with a view to interesting him in purchasing and extending the Eastern Kentucky R.R. and linking it to the Detroit, Toledo & Ironton R.R. The Eastern Kentucky, which extends thirty-six miles from Riverton through Grayson to Webbville in Lawrence County, now is in the hands of a receiver, and persistent rumors have been afloat that service on the line will be discontinued or that the line will be junked. Mr. Fields, as president of the Grayson Business Men's Club, has been authorized to act.

Connection of the Eastern Kentucky with the D., T. & I. would mean little mileage except for construction of a bridge across the Ohio River, because the terminus of Mr. Ford's railroad is Ironton, Ohio. Construction of approximately seven miles would add forty-three miles to the D., T. & I. with purchase of the Eastern Kentucky line.

From Webbville, it is proposed that Mr. Ford cross the remainder of Lawrence County, build through Johnson and Floyd, possibly touching the southeast end of Magoffin. From Floyd or Magoffin the tracks could run through Knott into Letcher and Leslie, opening Mr. Ford's coal field for the nation.

Mr. Ford holds coal lands in Leslie, Letcher, Bell, Pike, Harlan, Clay and Perry counties, all of which adjoin Knott or the counties in which Ford has mineral property. Accomplishment of this feat probably would require construction of less than 100 miles of railroad in Kentucky. As business required, the railroad could be branched from Letcher and Leslie into other counties.

**Seward E. Button**

## Button Resigns as Official In Five Coal Companies

Scranton, Pa., July 20.—F. H. Hemelright, president of the Temple Anthracit Coal Co., this afternoon announced the resignation of Seward E. Button as vice-president and general manager of the following coal companies: Temple Anthracite Coal Co., Temple Coal Co., Lackawanna Coal Co., Ltd., Mount Lookout Coal Co. and the East Bear Ridge Collieries Co. Mr. Button was named vice-president and general manager of the above named companies in February, 1924. Previous to that he was chief of the state Department of Mines of Pennsylvania.

Mr. Button entered the coal mining industry at the age of 15 years as a day laborer at the Hillside Colliery of the Hillside Coal & Iron Co. Fifteen years later he was made a mine foreman at the Hillside Colliery and later accepted a position as foreman at the Erie Colliery, in Jermyn. Later he went to the Temple Coal Co. as superintendent of the Mount Lookout Colliery, at Wyoming, afterward becoming district superintendent for the Temple company.

He was appointed chief of the Bureau of Mines by Governor Martin G. Brumbaugh on Feb. 9, 1918. He was reappointed by Governor William C. Sproul on Dec. 18, 1919, and retired from public service in 1923 to return to the Temple Coal Co. as general superintendent. His appointment as vice-president and general manager followed.

About six months ago a report was current that Mr. Button was to succeed Mr. Hemelright, who was said to be considering retirement due to his health. Mr. Button could not be reached today to learn of his plans for the future. The announcement by the president of the company did not give a reason for Mr. Button's resignation.

## *Fist Fights Feature First Day of Convention of District 1; Reported Willingness to Cede Wage Demands Repudiated*

Violence marked the first afternoon session of the biennial convention of District No. 1, United Mine Workers, which opened July 20 in Wilkes-Barre, Pa. George Isaacs, the defeated anti-administration candidate for district vice-president, was badly beaten. He had scalp wounds, a badly bruised eye and numerous body bruises when escorted from the hall. Other fist fights were stopped only after a score of city police had been summoned.

The fights came after Mayor Daniel L. Hart pleaded for peace in the ranks of the men.

William Brennan, defeated candidate for district president, attacked the report of the credentials committee, alleging that constitutional provisions relative to the framing of the delegate list had not been complied with, and that the report was signed by only one of the board of three auditors.

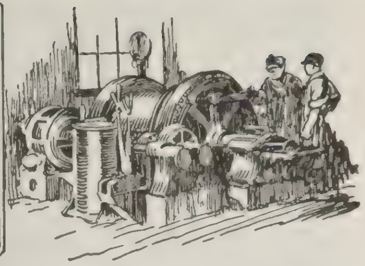
Secretary-Treasurer Enoch Williams, of Taylor, charged that Brennan had been instrumental in preventing the auditors doing their duty. Brennan denied the accusation, and there were more fist fights.

Then the administration applied steam-roller methods.

Thomas Kennedy, of Hazleton, international secretary-treasurer of the union, the final speaker of the afternoon, asked the men not to allow differences over district affairs to wreck their solid line-up on wage demands now being negotiated. The operators, he charged, are using propaganda instead of attacking the problems presented by the negotiations.

Relative to a report from Atlantic City that the men are willing to relinquish their demands for a wage advance rather than cause a strike on that issue, he asked the 600 delegates—fresh from the men in the mines and the real coal diggers, he called them—if that was the case. A loudly shouted "No" was the reply. Mr. Kennedy then asked the men at the press table to give that to the public and to S. D. Warriner and his propagandists as the reply of the men in the mines.

# Practical Pointers For Electrical And Mechanical Men



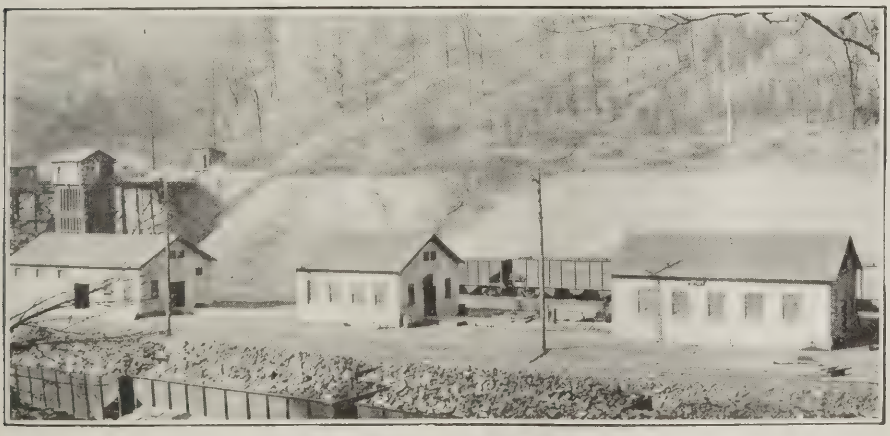
## Fire Teaches Coal Company to Build Shops in Separate Units

Some time ago the machine shop, electric shop, and storehouse of the Elkhorn Coal Corporation at Wayland, Ky. were destroyed by fire. This fire originated in the electric shop and quickly spread to the other departments which were under the same roof. The loss was heavy and the destruction of all mine supplies and spare parts, a great inconvenience.

To decrease the possibility of ever again losing all three departments by fire, the rebuilding was done as shown in the accompanying illustration. The three buildings which are of frame construction are separated by 40-ft. open spaces, and the adjacent ends covered with ⅛-in. asbestos board. A concrete walk 6 ft. wide connects the departments and serves as a runway for a portable floor crane. The open space between the electric shop and machine shop is used at odd times for a place to repair and store heavy or bulky equipment.

The three buildings are each 28 ft. in width. That to the left in the illustration, the storehouse, is 48 ft. long. The electric shop which is between the store house and machine shop, is 26 ft. long, and the machine shop 40 ft.

The Wayland shop does work for all divisions of the Elkhorn Coal Corp. The shop is directly in charge of H. C. McGlone, chief electrician of the Wayland division, and indirectly under R. R. Schellinger, electrical engineer of the company.



**Wayland Shops Are Separate Now**

These three buildings replaced the combination electric shop, machine shop, and storehouse which was destroyed by fire. As now located, with 40-ft. spaces between and with asbestos sheeting on the adjacent ends, it is unlikely that the three departments will ever again be destroyed by fire.

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## Home-Made Wire Brush Cleans Conveyor

At the Lykens pulverized fuel power plant at the Short Mountain colliery near Lykens, Pa., the workmen at the coal storage plant had difficulty in preventing the wet fuel from sticking on the conveyor lines especially in winter. To overcome this trouble a piece of wire rope made of many strands of fine wire was opened up and located over the conveyor chain links.

The brush thus made rests lightly on the chains and prevents the coal from sticking and causing the conveyor to operate badly. This fuel is pumped from a nearby washery and breaker, it being so fine that it easily is suspended in the rapidly moving water. On the side of the hill near the power house the fuel is dewatered and placed in two large storage piles.

In winter the moisture in the fuel, even after it had been drained of water, caused the coal to freeze to the conveyor links. Now the wire brush eliminates this difficulty.

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## Tipple Motor Starters Are Grouped Handily

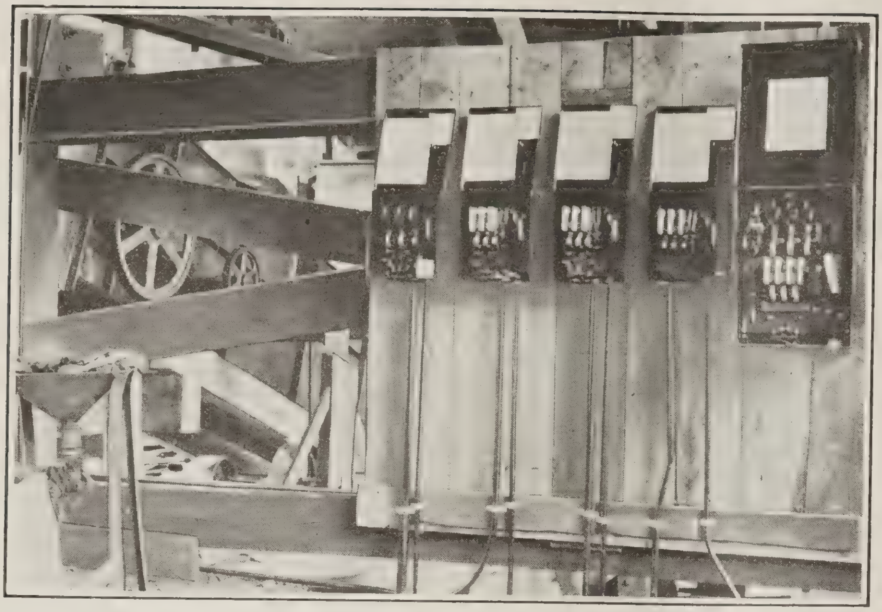
Some mine electricians still regard the automatic motor starter as a device to be used only where remote control is desirable. Often the automatic-type starter can be located in a more suitable place than a hand starter; the motors then can be started usually with less abuse; there is less burning of contacts and, therefore, the automatic starter gives less trouble and is cheaper to maintain. For these reasons some electrical men practically have discontinued buying manually operated starters, even for duty where remote control is not necessary.

An example of the use of automatic starters is illustrated in the photograph taken during the installation of shaker screens, picking tables and loading booms in the Caleb tipple of the Elkhorn Piney Coal Mining Co. at Weeksbury, Ky. Here all motors, except those on the boom hoists (which have built-in controllers), are controlled by automatic starters grouped in an accessible, well-lighted, and fairly clean part of the tipple.

An interesting feature of this installation, as explained by R. R. Webster, chief electrician, is the simplicity and lower installation cost afforded by a new-type, self-starting, induction motor. Of the two 15-hp. motors, one is the new type and the other a slip-ring motor. The only reason that both are not of the new type is that the older one had been purchased before the other was available.

The large starter at the right in the illustration is that required for the 15-hp. motor. It has a resistance mounted back of the slate panel and is a rather heavy and expensive affair. With this type starter it is necessary to carry both rotor and stator leads from the motor to the panel.

As a comparison, the small starter



**Starters Located Where They Are Easy to Get At**

This picture was taken before the wiring was completed. The large starter is for controlling a 15-hp. slip-ring motor. Three sets of wires will have to be brought into this starter for the line, the stator leads, and the rotor connection. The small starter, mounted next to the large one, controls the same size motor but one of the new self-starting type.

next to it is all that is required for the 15-hp. self-starting motor. This is nothing more than a remotely controlled magnetic switch and has no connection to the rotor circuit of the motor. The other three small starters in the picture are those used with the 5-hp. motors operating the small conveyor and loading booms.

The new type of motor is not different in general appearance from an ordinary squirrel-cage induction motor. High torque and low current starting characteristics are made possible by the use of a double squirrel-cage winding on the rotor. One winding is embedded in the bottom of deep slots. The starting winding is mechanically connected and disconnected. The action is governed automatically by the inherent change in the path of the magnetic flux as the motor approaches synchronous speed.

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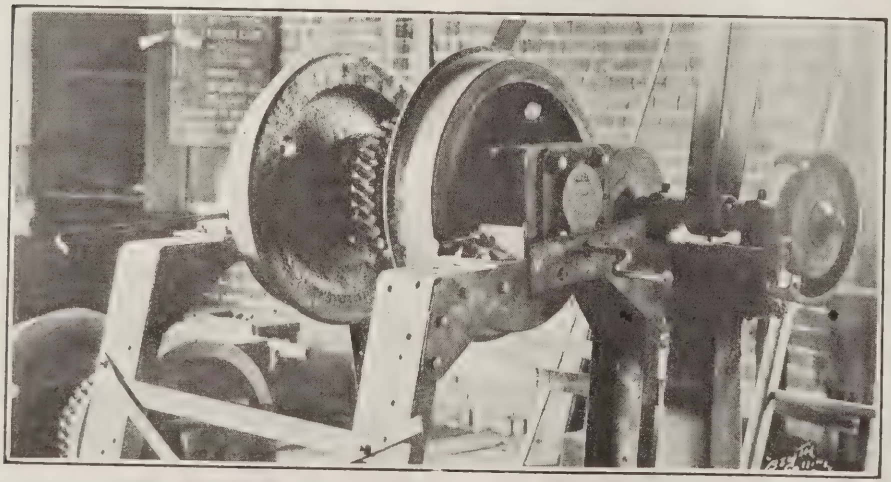
## Home-Made Wheel Grinder Does Good Work

The accompanying illustration shows how the locomotive wheels of the Abbey Coal Corporation of Collinsville, Ill., are finished after the worn spots have been filled. In the building-up operation, the wheel treads are filled with manganese steel. The metal is welded into place and all depressions are built up so that the wheel is as nearly a true circle as possible.

Before the wheels are again placed under the locomotive they are ground by an emery wheel. The frame on which the wheels are mounted is set close to the emery grinder. The wheels themselves are driven while being ground. This method of finishing insures an absolutely true job. The wheels being finished when the photograph was taken belong to a narrow-gage locomotive having a worm drive.



**Grinding a Set of Wheels to a True Circle**

After these wheels were built up with manganese steel they were mounted on a special frame and finished by an emery wheel.

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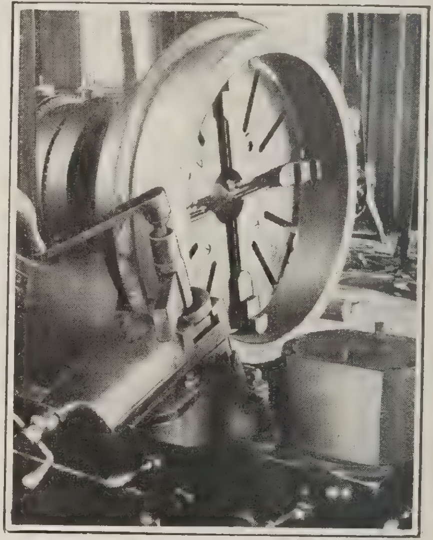
## Inclined Tool Rest Raises Lathe Capacity

In many instances the lathe purchased for the mine shop is not large enough to accommodate locomotive tires. Many types can be blocked up, but if the swing is increased to any appreciable extent by this method, the carriage will be found to have sufficient travel to bring the tool post into the right position or turning large parts.

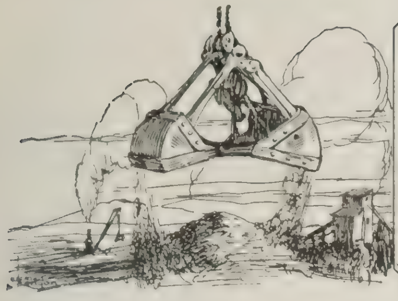


**A 30-in. Tire in a 26-in. Machine Shop Lathe**

The compound rest has been moved from the center to a new position at the end of the carriage. The inclined support, which is of cast brass, makes this possible.

A way around this difficulty is illustrated in the photograph taken in the Wayland, Ky., shop of the Elkhorn Coal Corporation. Here a 26-in. lathe has been blocked up to swing 34-in. material, and an inclined support provided for bringing the tool post into the correct position for turning 30-in. tires.

The new support was made at the Wayland shop. Through necessity it was cast from brass, the shop not being equipped to make iron castings. On the bottom of the support are machined projections which fit into the grooves of the carriage. When tires are to be turned the compound rest is removed from its regular position in the center of the carriage and is bolted to the inclined block.



# Production And the Market

## Soft-Coal Market Develops Healthier Tone; Anthracite Trade Gains Gradually

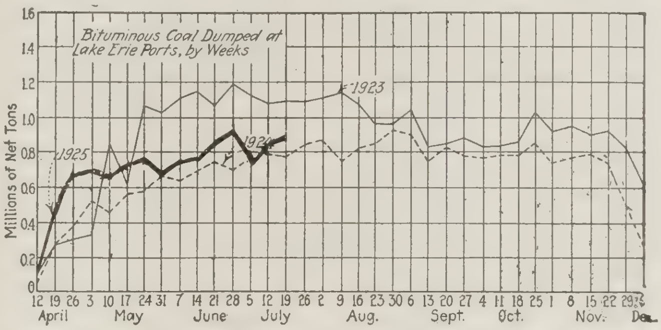
Optimism is a little more prevalent in the soft-coal market. Perhaps the best feature of the improved sentiment is the fact that it seems to have a healthy basis quite apart from the threat of a hard-coal strike. Consumers apparently are beginning to be alive to the situation, with reserves far from large and prices low, and it is expected that demand will gain in momentum steadily from now on. No doubt news from the wage conference at Atlantic City will play its part in the market as already the threatened tie-up of British mines has stiffened the market at Hampton Roads.

The Midwest market is showing more signs of life, and while the improvement has been largely on Eastern coals it is expected that Illinois and Indiana operators will soon share in the betterment. Demand is picking up steadily in Kentucky and prices are beginning to climb. The advance in prices is being accepted in a way that would seem to indicate that business is due to improve steadily. Eastern Kentucky screenings in particular are unusually firm for midsummer. Conditions are extremely dull at the head of the lakes, the iron mines having failed to open, as expected. The situation in the Southwest is somewhat firmer, a few mines in Kansas having reopened and several in Arkansas are preparing to resume. Trade is dragging in Colorado and Utah.

The Cincinnati market is somewhat complicated, embargoes on the B. & O. causing a backwash, with a slight softening of prices. Lake buyers, however, have come into the market instead of sellers having to go after them. Domestic demand continues to improve gradually in southern Ohio and the steam trade remains about normal. A slightly better tone is in evidence in eastern Ohio, though steam buying is largely limited to current needs. The Pittsburgh market is stagnant. New England, New York and the other Eastern markets bear a somewhat healthier aspect, soft spots being less in evidence.

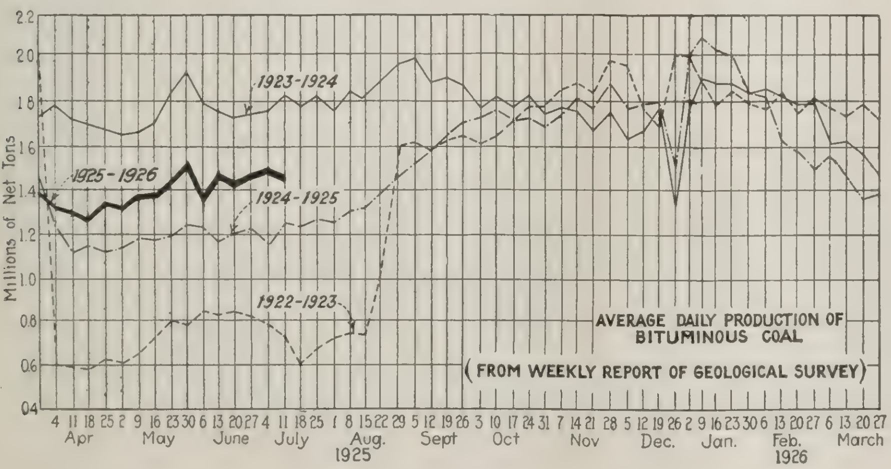
A gradual increase in demand accompanied by greater firmness of independent prices marks the anthracite trade, though the gain has not been as great as was expected.

Bituminous coal output in the week ended July 11 is estimated by the Geological Survey at 8,631,000 net tons, compared with 7,352,000 tons in the holiday week, preceding. Anthracite production in the week ended July 11 was 1,854,000 net tons, compared with 1,514,000 tons in the week ended July 4.



*Coal Age* Index of spot prices of bituminous coal showed no change during the past week, standing on July 20 at 160, the corresponding price being $1.93.

Dumpings at Lake Erie ports during the week ended July 19, according to the Ore & Coal Exchange, were: Cargo, 831,252 net tons; steamship fuel, 50,131 tons—a total of 881,383 net tons, compared with 831,890 tons in the preceding week. Hampton Roads dumpings in the week ended July 16 totaled 351,037 net tons, compared with 468,804 tons in the previous week.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| June 27 | 7,608,000 | 8,662,000 |
| July 4 (*a*) | 5,913,000 | 7,352,000 |
| July 11 (*b*) | 7,742,000 | 8,631,000 |
| Daily average | 1,290,000 | 1,438,000 |
| Cal. yr. to date | 243,427,000 | 247,763,000 |
| Daily av. to date | (*c*) 1,503,000 | 1,528,000 |
| **ANTHRACITE** | | |
| June 27 | 1,918,000 | 1,844,000 |
| July 4 | 1,296,000 | 1,514,000 |
| July 11 | 1,871,000 | 1,854,000 |
| Cal. yr. to date | (*c*) 48,312,000 | 47,803,000 |
| **COKE** | | |
| July 4(*a*) | 94,000 | 120,000 |
| July 11 (*b*) | 106,000 | 126,000 |
| Cal. yr. to date | (*c*) 6,204,000 | 5,477,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

## Midwest Trade Shows Signs of Life

The Chicago market tone is infinitely more encouraging than it has been since the close of the winter season. As was intimated a week ago, the market is beginning to pick up and show some signs of life. Most of the activity and the improvements to date have been on Eastern coals, but it is confidently expected that better conditions are in prospect in the near future for the Illinois and Indiana operators.

Relative to improved conditions in the East, a number of the smokeless operators represented in Chicago have been forced to withdraw all prices temporarily on high-grade smokeless coals. Eastern Kentucky and splint operators have raised their quotations from 10c. to 25c. a ton. Low-price contracts on smokeless mine-run offered to dealers and not accepted to date have been withdrawn and a new set of figures showing a considerable advance submitted in their place.

Franklin County and Saline County operators report a little better business on domestic coals, which also is true of Indiana Fourth Vein operators in the Clinton and Linton districts. Steam coals are erratic and there is a wide variance in quotations on screenings from the same field, principally because some operators are in good shape and others not so good. Renewed interest in contracts is being shown by industrial consumers, with some operators holding back, going on the basis that having gotten along so far without contracts they can probably finish up the year without them.

There is a little activity in spots in the Franklin County field—a couple of mines have opened, but working time is not good. There seems to be heavy railroad buying in the last ten days from this field and from the deep-shaft mines. This has enabled some of them to make some good showings. On good authority it is learned that a few Western railroads are putting in storage coal. One road is reported as considering a storage pile of 100,000 tons for July and the early part of August. This is helping the situation in the Williamson and Franklin County field and to some extent is helping the Harrisburg field.

There has been a little pickup in domestic movement of lump and egg, which indicates that from now on an improvement can be looked for steadily.

Steam is fairly active in screenings but slowing up in the nut sizes. Strip mines are making good working time on both steam and domestic, and all mines still continue to do some crushing. Working time at the shaft mines still runs from one to three days a week, with the usual exceptions. Conditions show no improvement in the Duquoin field. One and two days a week, with one mine getting three days, is the rule, but the strip mines show good working time and stripping developments in this section promise to increase.

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| **Low-Volatile, Eastern** | Market Quoted | July 21 1924 | July 6 1925 | July 13 1925 | July 20 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.85 | $2.85 | $2.85 | $2.75@$3.00 |
| Smokeless mine run | Columbus | 2.20 | 1.85 | 1.85 | 1.75@ 2.00 |
| Smokeless screenings | Columbus | 1.30 | 1.30 | 1.30 | **1.25@ 1.50** |
| Smokeless lump | Chicago | 3.85 | 3.10 | 3.10 | 3.00@ 3.25 |
| Smokeless mine run | Chicago | 1.85 | 1.85 | 1.85 | **1.75@ 2.10** |
| Smokeless lump | Cincinnati | 3.75 | 2.85 | 2.85 | **2.85@ 3.00** |
| Smokeless mine run | Cincinnati | 1.80 | 1.95 | 2.00 | 2.00 |
| Smokeless screenings | Cincinnati | 1.35 | 1.30 | 1.25 | **1.25@ 1.30** |
| *Smokeless mine run | Boston | 4.30 | 4.20 | 4.25 | **4.25@ 4.35** |
| Clearfield mine run | Boston | 1.85 | 1.80 | 1.80 | *1.65@ 1.90* |
| Cambria mine run | Boston | 2.15 | 2.05 | 2.00 | *1.85@ 2.10* |
| Somerset mine run | Boston | 2.00 | 1.90 | 1.85 | 1.75@ 2.00 |
| Pool 1 (Navy Standard) | New York | 2.70 | 2.55 | 2.55 | 2.40@ 2.70 |
| Pool 1 (Navy Standard) | Philadelphia | 2.80 | 2.60 | 2.60 | 2.45@ 2.75 |
| Pool 1 (Navy Standard) | Baltimore | .... | 1.85 | 1.85 | 1.80@ 1.95 |
| Pool 9 (Super. Low Vol.) | New York | 2.05 | 2.00 | 2.00 | *1.80@ 2.15* |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.00 | 2.00 | 1.85@ 2.20 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.90 | 1.75 | 1.75 | 1.65@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.80 | 1.85 | 1.80 | 1.75@ 1.90 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.70 | 1.70 | 1.60@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.70 | 1.60 | 1.60 | 1.55@ 1.65 |
| Pool 11 (Low Vol.) | New York | 1.55 | 1.60 | 1.55 | 1.50@ 1.65 |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.40 | 1.40 | 1.35@ 1.45 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.50 | 1.50 | 1.40@ 1.65 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.50 | 1.50 | 1.45@ 1.60 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.35 | 1.35 | 1.30@ 1.45 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.40 | 2.40 | 2.30@ 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.25 | 1.50 | 1.50 | 1.40@ 1.60 |
| Kanawha lump | Columbus | 2.10 | 1.85 | 1.85 | 1.75@ 2.00 |
| Kanawha mine run | Columbus | 1.45 | 1.40 | 1.40 | 1.35@ 1.50 |
| Kanawha screenings | Columbus | 1.00 | 1.15 | 1.15 | **1.10@ 1.25** |
| W. Va. lump | Cincinnati | 2.10 | 2.25 | 2.25 | 2.00@ 2.50 |
| W. Va. gas mine run | Cincinnati | 1.35 | 1.55 | 1.40 | **1.40@ 1.50** |
| W. Va. steam mine run | Cincinnati | 1.35 | 1.40 | 1.30 | 1.25@ 1.40 |
| W. Va. screenings | Cincinnati | .95 | 1.15 | 1.10 | 1.10@ 1.15 |
| Hocking lump | Columbus | 2.45 | 2.15 | 2.15 | 2.00@ 2.30 |
| Hocking mine run | Columbus | 1.70 | 1.50 | 1.50 | 1.40@ 1.65 |
| Hocking screenings | Columbus | 1.15 | 1.30 | 1.30 | 1.25@ 1.40 |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.20 | 2.20 | 1.90@ 2.50 |
| Pitts. No. 8 mine run | Cleveland | 1.80 | 1.80 | 1.85 | 1.80@ 1.90 |
| Pitts. No. 8 screenings | Cleveland | 1.00 | 1.40 | 1.45 | **1.45@ 1.55** |

| **Midwest** | Market Quoted | July 21 1924 | July 6 1925 | July 13 1925 | July 20 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $2.85 | $2.60 | $2.60 | $2.50@$2.75 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.70 | 2.00 | 2.00 | 1.75@ 2.25 |
| Central Ill. lump | Chicago | 2.50 | 2.35 | 2.35 | 2.25@ 2.50 |
| Central Ill. mine run | Chicago | 2.10 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central Ill. screenings | Chicago | 1.60 | 1.75 | 1.75 | *1.50@ 1.90* |
| Ind. 4th Vein lump | Chicago | 2.60 | 2.60 | 2.60 | 2.50@ 2.75 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.70 | 1.80 | 1.80 | 1.65@ 2.00 |
| Ind. 5th Vein lump | Chicago | 2.35 | 2.25 | 2.25 | 2.15@ 2.40 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.55 | 1.50 | 1.50 | 1.40@ 1.60 |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.25 | 2.25 | 2.25 |
| Mt. Olive screenings | St. Louis | 2.00 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.15 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.45 | 1.50 | 1.50 | *1.25@ 1.40* |
| West Ky. block‡ | Louisville | 2.10 | 1.35 | 1.40 | **1.50@ 1.65** |
| West Ky. mine run | Louisville | 1.60 | 1.10 | 1.25 | *1.10@ 1.25* |
| West Ky. screenings | Louisville | 1.25 | 1.10 | 1.00 | *.80@ .95* |
| West Ky. block‡ | Chicago | 2.05 | 2.00 | 2.00 | *1.60@ 2.25* |
| West Ky. mine run | Chicago | 1.60 | 1.35 | 1.35 | 1.15@ 1.60 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.20 | 2.00 | 2.00 | 1.80@ 2.25 |
| Big Seam mine run | Birmingham | 1.75 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.00 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block‡ | Chicago | 2.10 | 2.45 | 2.45 | **2.45@ 2.65** |
| S. E. Ky. mine run | Chicago | 1.50 | 1.70 | 1.70 | 1.60@ 1.85 |
| S. E. Ky. block‡ | Louisville | 2.10 | 2.10 | 2.25 | 2.00@ 2.50 |
| S. E. Ky. mine run | Louisville | 1.55 | 1.55 | 1.40 | **1.35@ 1.75** |
| S. E. Ky. screenings | Louisville | .95 | 1.10 | 1.05 | **1.00@ 1.25** |
| S. E. Ky. block‡ | Cincinnati | 2.50 | 2.25 | 2.35 | *2.00@ 2.50* |
| S. E. Ky. mine run | Cincinnati | 1.45 | 1.55 | 1.35 | **1.25@ 1.60** |
| S. E. Ky. screenings | Cincinnati | .90 | 1.15 | 1.10 | 1.00@ 1.25 |
| Kansas lump | Kansas City | 4.50 | 4.00 | 4.00 | 4.00 |
| Kansas mine run | Kansas City | 3.50 | 3.00 | 3.00 | 3.00 |
| Kansas screenings | Kansas City | 2.50 | 2.50 | 2.50 | 2.50 |

* Gross tons, f.o.b. vessel, Hampton Roads.

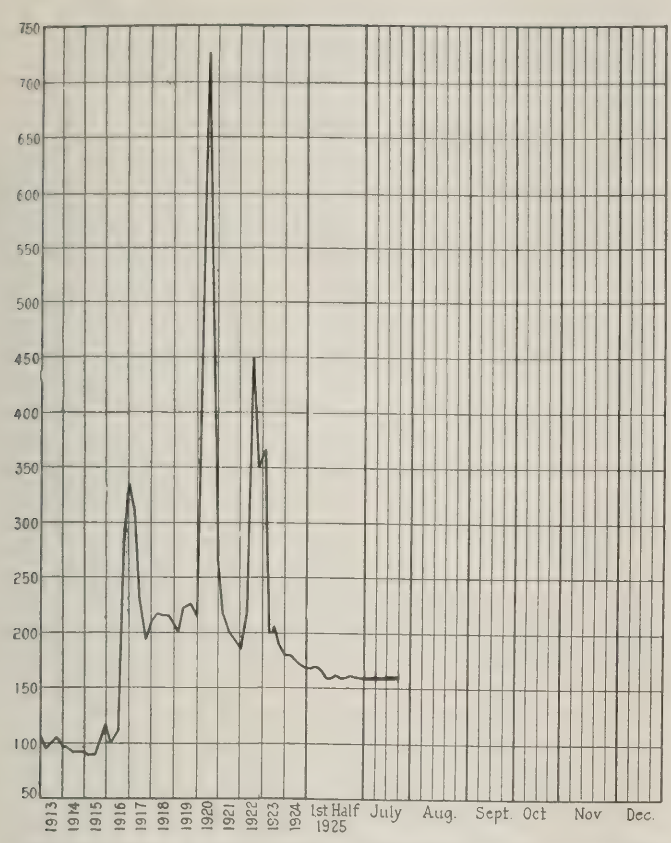
† Advances over previous week shown in **heavy type**; declines in *italics*.

‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | July 21, 1924 | | July 13, 1925 | | July 20, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ............ | $8.00@$8.95 | ............ | $8.15@$8.80 | ............ | $8.15@$8.80 |
| Broken | Philadelphia | 2.39 | ............ | 8.80@ 8.95 | ............ | 8.70 | ............ | 8.70 |
| Egg | New York | 2.34 | $8.50@$9.00 | 8.55@ 8.95 | $8.60@ 8.75 | 8.55@ 8.80 | **$8.75@$9.00** | 8.55@ 8.80 |
| Egg | Philadelphia | 2.39 | 8.90@ 9.60 | 8.90@ 8.95 | 8.80@ 9.40 | 8.60@ 8.80 | 8.80@ 9.40 | 8.60@ 8.80 |
| Egg | Chicago* | 5.06 | 7.99@ 8.10 | 7.94@ 8.00 | 7.86@ 8.50 | 7.54@ 8.28 | 7.86@ 8.50 | 7.54@ 8.28 |
| Stove | New York | 2.34 | 9.00@ 9.25 | 8.55@ 9.20 | 9.00@ 9.35 | 9.05@ 9.30 | **9.10@ 9.40** | 9.05@ 9.30 |
| Stove | Philadelphia | 2.39 | 9.25@ 9.90 | 8.95@ 9.10 | 9.40@ 9.75 | 9.05@ 9.20 | 9.40@ 9.75 | 9.05@ 9.20 |
| Stove | Chicago* | 5.06 | 8.30@ 8.40 | 8.24@ 8.34 | 8.22@ 8.70 | 8.02@ 8.20 | 8.22@ 8.70 | 8.02@ 8.20 |
| Chestnut | New York | 2.34 | 8.50@ 9.00 | 8.55@ 9.05 | 8.25@ 8.60 | 8.55@ 8.80 | **8.75@ 9.00** | 8.55@ 8.80 |
| Chestnut | Philadelphia | 2.39 | 8.75@ 9.70 | 8.90@ 8.95 | 8.80@ 9.65 | 8.70@ 8.80 | 8.80@ 9.65 | 8.70@ 8.80 |
| Chestnut | Chicago* | 5.06 | 8.08@ 8.23 | 8.18@ 8.24 | 8.14@ 8.35 | 7.79@ 8.10 | 8.14@ 8.35 | 7.79@ 8.10 |
| Pea | New York | 2.22 | 4.50@ 5.25 | 5.50@ 6.00 | 5.00@ 5.50 | 5.00@ 5.80 | **5.25@ 5.50** | 5.00@ 5.80 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | 5.50@ 5.75 | 5.00@ 5.40 | 5.50@ 5.75 | 5.00@ 5.40 |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 5.91 | 4.91@ 5.36 | 4.69@ 5.00 | 4.91@ 5.36 | 4.69@ 5.00 |
| Buckwheat No. 1 | New York | 2.22 | 2.00@ 2.50 | 3.00@ 3.15 | 2.00@ 2.50 | 2.50 | 2.00@ 2.50 | 2.50 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | 2.15@ 2.75 | 2.50 | 2.15@ 2.75 | 2.50 |
| Rice | New York | 2.22 | 1.50@ 2.15 | 2.00@ 2.25 | 1.75@ 2.00 | 2.00 | **1.90@ 2.00** | 2.00 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | 1.85@ 2.00 | 2.00 | 1.85@ 2.00 | 2.00 |
| Barley | New York | 2.22 | 1.00@ 1.50 | 1.50 | 1.35@ 1.50 | 1.50 | **1.40@ 1.50** | 1.50 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | 1.40@ 1.50 | 1.50 | 1.40@ 1.50 | 1.50 |
| Birdseye | New York | 2.22 | 1.00@ 1.50 | 1.60 | 1.35@ 1.60 | 1.60 | **1.40@ 1.60** | 1.60 |

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | July 20 | July 13 | July 6 | July 21 |
| Index | 160 | 160 | 160 | 163 |
| Weighted averaged price | $1.93 | $1.93 | $1.94 | $1.98 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

In the Mount Olive field conditions are still bad. A little tonnage is moving, for steam principally, and one or two days a week is considered good working time. A little railroad tonnage also moves.

In the Standard field there is little improvement. The movement of early storage for St. Louis did not develop as was expected; all mines have "no bills" on hand, and domestic sizes are hard to move. Railroad tonnage is high and one and two days a week is good working time. Prices are unchanged.

At St. Louis there is a little activity in early storage of southern Illinois high-grade coal, but other than that, retail conditions are slow. Apartment-house early storage is not developing fast for Standard coal, and Mount Olive seems to be at a standstill. There is no activity in anthracite or smokeless and very little in coke. Wagonload steam is slow, and carload is active for screenings only in a fair way. Country domestic in spots shows improvement, but country steam is slow.

### Demand Improves Steadily in Kentucky

A much better spirit is prevalent in the Kentucky coal trade than at any previous time in months. Demand is improving steadily and prices are starting to advance. Buyers are taking to increased prices a little better than had been anticipated, and it is believed that business will steadily improve.

In western Kentucky prices have started advancing on prepared, but screenings are a bit weaker as a result of larger production. In eastern Kentucky block is a trifle stronger, while all other sizes are firm. Movement is generally better, however.

Western Kentucky is now quoting block at $1.50@$1.65, with some prime 6-in. at $1.75; lump, egg and nut, $1.40@$1.60; mine-run, $1.10@$1.25, and screenings, 80@95c.

Eastern Kentucky is selling some block at $2, but prices are closer to $2.25@$2.50, with some fine grades even higher. Lump and egg are $1.75@$2.10; nut, $1.50@$1.75; mine-run, $1.35@$1.75, and screenings, $1@$1.25.

A feature of the market is the firm price on eastern Kentucky screenings, at $1 and up, which is unusual for midsummer, but made possible by a good general industrial, utility and steam demand, as well as a larger movement than usual to the lakes for bunkerage use.

### Faint Signs of Life in Northwest

The situation is still very dull at Duluth as far as shipments from the docks go. A little more anthracite moved last week than before, however, and there seemed to be some sign of life in the bituminous industry. The unexpected move of anthracite probably is due to the big consumers, who burn hard coal regardless of price, filling their bins for the year, and in some instances the small man's fear of a curtailment of the supply.

Coal men say, however, that unless there is a material reduction in the price of hard coal, more Pocahontas will be burned this year than ever before. The spread in price between the poorest hard coal and Pocahontas is more than $5 a ton, delivered.

Forty-nine cargoes arrived last week, which was an improvement over the week before. Of these, only three were hard coal, showing that the docks are leary of putting in too big a supply of anthracite. There are 14 cargoes on the way, of which three are hard coal.

Mines on the range are proving a disappointment, as they are not opening up. Prices remain the same all through the list, with no signs of weakening.

Both dock managers and retail dealers in Milwaukee reported a better demand for coal last week. Householders evidently have been moved to action by talk of a possible strike in the anthracite region in September, as the temperature has been high enough thus far during July to keep them serene as to fuel requirements. But the bins must have filling in a few weeks, and the activity now noted is the forerunner of a steady demand that will draw heavily upon dock supplies. Cargoes are coming to Milwaukee quite steadily. Receipts during July, up to the 16th, aggregate 216,766 tons—45,100 tons of anthracite and 171,666 tons of bituminous coal. This carries the total for the year thus far to 1,333,139 tons, against 1,118,381 tons during the same time in the season of 1924.

### Firmer Tendency in Southwest

The Southwestern market is becoming firmer. Dealers are beginning to buy in small quantities, though the principal demand continues to be for school storage and threshing. Some operators are preparing to reopen their Arkansas mines, where now there is little activity. Several small mines have been reopened in Kansas in recent weeks, though a market sufficient to warrant a general resumption of work is not expected now before late in August.

There is very little change, if any, in the coal conditions in Colorado. Mines are operating about two days a week, demand for domestic coal being virtually nil, as dealers are holding off orders until the new rates become effective.

The coal business continues draggy in Utah. Orders from industrials are no better than they were and the hot weather has reduced domestic consumption to practically nil. Coal for storage purposes is moving slower than normal. Prices are as steady as ever. Prominent retail concerns are issuing circular matter urging the public to store coal now for winter use. These circulars predict an advance in coal prices in the fall. Prices have not been changed here since last September, when there was an adjustment following the granting of storage rates. There is little contracting and business is quiet all over the territory served.

### Embargoes Bring Softness at Cincinnati

Embargoes by the Baltimore & Ohio against coal moving from south of the river to Toledo caused a slight backwash at Cincinnati that was felt principally by shippers and handlers of mine-run during the past week. This caused a little softening, and those with a Chesapeake & Ohio outlet turned their offerings to tide. On the other hand, lake buyers, probably for the first time this season, came to the market instead of sellers going to them, and this is always a healthy sign.

In the bituminous line-up lump and block still lacked activity. The mid-month price advance by some of the Logan County (W. Va.) producers added a better tone, inquiries too were better, but quite an amount of tonnage still could be picked up around $2 in spite of the fact that $2.25 was asked and $2.40 was sought by some southeastern Kentucky shippers. Egg and 2-in. are unchanged, and slack, in spite of the softening of mine-run, stood at the old figures.

Smokeless coals are firmer in price than for the past couple of weeks. Some direct-sales offices are making a determined effort to get $3 for lump, though a distinction is still made against egg. Some mines ask $2.85 for egg, a 10c. advance, and mine-run is firm at $2 with little of the standard offerings below that mark. Screenings have had a better inquiry, but the price is practically unchanged.

There has been no change in the retail situation, though an advance Aug. 1 seems certain. If this happens it will be the first upward change since last March.

Recent rains have given the river a good stage and assurance of decent depth for some time to come.

The gradual improvement in the domestic demand in Columbus and central Ohio continues. Retailers in many sections are placing better orders in view of the fact that more householders are coming into the market. Rural dealers are buying in order to take care of the threshing business, which, however is not nearly as important as formerly. Retail prices have stiffened to a certain extent with smokeless, splints and Kentucky block the favorite varieties.

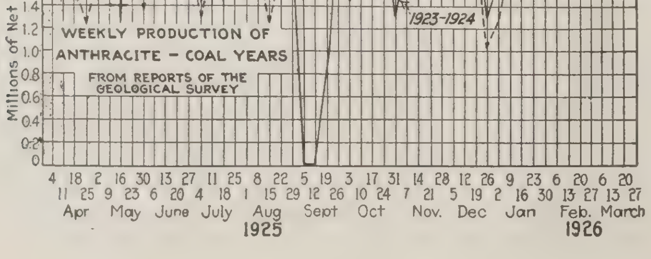
Steam business is running along about as usual, with some larger orders coming in where reserves are unusually low. But contracting has not been increased although some of the larger users are making inquiries on large tonnage. Railroads and utilities are the best steam buyers. Manufacturing concerns have not been able to increase their operations and are playing safe on the fuel proposition. The market has been kept fairly clean because of buying by general steam users and there is little distress coal reported on the Columbus market. Open-market buying is still the rule among larger users. Screenings are still firm, largely through the curtailment of lump output. The tone of the steam trade has improved materially during the past two weeks and producers as well as distributors believe that better things are in store during the latter part of July and in August.

The lake movement continues steady with some of the tonnage coming from Ohio mines, especially those working under the 1917 scale. Lake contracting is slow, however, as most of the shippers have placed their contracts for the season.

Production in the southern Ohio field shows little increase and is estimated from 20 to 25 per cent of capacity. Some trouble is reported following agitation on the part of union officials in sections where co-operative mining is prevalent. A few more mines are opening with the 1917 scale as a wage basis.

## Improved Tone in Eastern Ohio

In eastern Ohio last week saw a stronger demand for slack and nut-and-slack, with an enhancement in spot prices of 5 to 10c. per ton. Spot prices on other grades show practically no change. The market manifests a slightly improved tone, however; retailers are beginning to purchase and store for fall trade and inquiries from steam consumers are more active. The major portion of the steam trade nevertheless is adhering to small-quantity purchases for current use.



During the week ended July 11 the total output in eastern Ohio was 226,000 tons, an increase of 43,000 tons over the preceding week, which consisted of only five workdays.

## Pittsburgh Market Stagnant

The Pittsburgh market continues as dull as ever. The movement between operators and regular customers, such as it is, keeps up, but the amount of inquiry in the open market for mine-run and lump is almost negligible. As usual, there is some trading in slack and there is occasional inquiry for nut.

There is room for hopes of improvement in the general coal situation, but the Pittsburgh district is so far out of the competition as to meeting prices in its formerly widespread markets that a little improvement would do it no good. For months past the district's market has been almost entirely a local affair.

There is no change in the bituminous situation at Buffalo. Prices are at the bottom and will remain there for a while at any rate. Shippers are pleased if they can grab up enough business to pay expenses. Many assert that they are unable to do it. Quotations are $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run, $1.25@$1.40 for slack; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, and $1.40@$1.60 for slack; $1.75@$2 for Allegheny Valley mine-run. Cambria County smokeless sells at the curb, for house furnace use, at $6.

## New England Steam Market Healthier

The steam coal market has a more wholesome appearance in New England. Much less tonnage is being forced on reluctant buyers and enough sales have been made in the last fortnight to eliminate most of the soft spots that were typical when July came in. Receipts continue on a light weekly basis, but the trade is more hopeful and there is an inclination now to be deliberate about futures. Coal is still being sold for September delivery at today's quotations for spot shipment, but the range of prices is at least 5@10c. higher than a week ago. A few orders that have come into the market in the past week were taken at better prices than had obtained for several weeks, and unless some group of smokeless operators make overshipments here there is reason to think the market is already on a sounder footing than has been the case for many a day.

It is doubtful whether there will be any marked response on the part of buyers; so many favorable predictions have been made in the past three years that most of them will be very slow in reacting. At the same time there is quite an aggregate tonnage to be placed before November, and all these conditions in the steam coal trade will call for careful handling in the next few weeks.

Accumulations at Hampton Roads did not bulk so large last week, and admittedly there is a better feeling among the agencies. The British labor situation has been a source of some encouragement, although no tangible results have as yet appeared.

Pocahontas and New River of the higher grades are being held at $4.25@$4.35 per gross ton, f.o.b. vessel, with slack commanding close to $4 at the same ports. On cars Boston there have been sales recently at $5.35@$5.40, although for 1,000-ton lots a discreet buyer could doubtless cover at $5.25@$5.35.

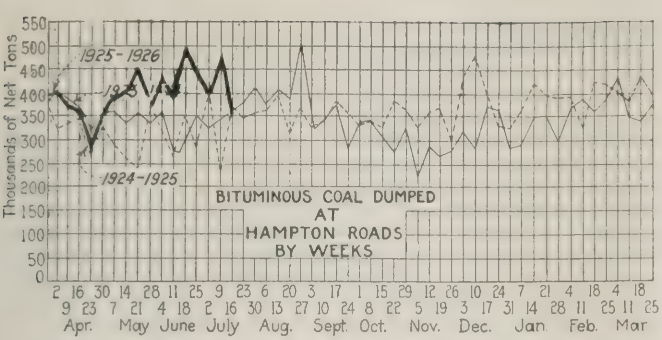
In Pennsylvania coals all-rail there is next to nothing doing. The few mines that are in operation are still selling on about a cost basis.

## Tonnage Moves Better at New York

Better feeling and a slightly improved movement of bituminous coal are apparent at New York and lead to the belief that notwithstanding their apparent indifference, consumers are looking into the future. They are watching the anthracite situation closely and producers of screened coals are prepared to take advantage of conditions should there be a suspension of mining.

Cheaper grades apparently are in the discard due to the low prices at which the better grades can be purchased. With the improvement becoming stronger salesmen look for the placing of many orders that have been held back for some time.

The tidewater market remains practically unchanged. Shippers are cautious in sending tonnage to the piers.



Mid-July has brought no improvement to the Philadelphia soft-coal market, although there has been a little contracting on account of some agreements having expired. Part of the trade reports more business, although all deplore the fact that it is about an even break so far as profit is concerned.

Producers are trying to induce regular customers to stock up coal, as the tonnage above ground is close to the smallest on record and anthracite strike talk is in the air. The possibility of trouble in the British coal fields has not escaped the attention of local operators.

Slack continues to be a wanted fuel, and the large users of this coal are in the market for surplus fuel for stocking as well as for current consumption. The demand has been quite well met of late, but, of course, there has not been sufficient to meet all calls.

Tide trade is as quiet as ever, although there seems to be an occasional better demand for bunker coal. No charters for overseas shipments have been closed for weeks.

One week is almost like another these days in the Baltimore coal trade. A few companies handling better grades have contracts that cover considerable of their production possibility for some months, but a number of others are far behind in the average contract situation and are selling a considerable part of their present reduced production at prices that are far from satisfactory. It is true that there is more inclination to store as fall approaches and the possibilities of an anthracite strike affecting the bituminous situation prove more acute. Some of the large industries have abandoned the policy of merely buying for immediate needs and are creating reserves, but this is far from general. Less desirable coals are especially difficult to sell, bringing prices that prevent profits. In the face of European production complications export movement is flat. Quotations are about the same as for several weeks past, high-grade steam coals being easy to obtain at from $1.65 to $1.85.

At Birmingham disposition of domestic coal is still most troublesome. With unusually hot weather dealers are doing little business, most of them having ample coal on hand to meet straggling demands. There is little spot buying and deliveries on contracts are being extended and restricted to a menacing degree. There is scarcely any movement of the cheaper grades of lump and other domestic sizes.

The commercial market is about holding its own. Inquiry is light and sales of spot coal have not increased materially, if at all. A few new contracts are reported, but coverings are mostly confined to renewals. The Central of Georgia Ry. and the Ocean Steamship Co. completed the list of the large utilities to make contracts when they closed last week for something over 800,000 tons of washed coal from the mines on the Central lines. The bunker trade is still dull and requirements light.

Prices f.o.b. mines are reported remaining within the schedules which have ruled for the past month or more. While demand is limited for both steam and domestic grades, mines are operating with this situation in mind and there is no surplus of serious proportions of any grades.

## Hard Coal Trade Gains Gradually

Demand and quotations for independent anthracite showed several changes at New York last week, with the result that prices for individual coals registered an increase. Demand is not as strong as expected in view of the uncertainty of wage negotiations, but this does not seem to bother consumers, who apparently believe there is enough coal above ground to take care of their needs no matter if there should be a suspension.

Some of the larger companies are said to be sold up on egg and stove but find difficulty in disposing of chestnut unless taken with either egg or stove. Independent coals are moving steadily with the exception of chestnut. Pea is in good shape and No. 1 buckwheat has picked up considerably. Surplus tonnages of rice and barley are going to the storage piles.

Retail dealers complain of the slowness of business and are endeavoring to stimulate the storing of winter fuel.

At Philadelphia the anthracite trade is a bit improved, though the operators seem to have as much difficulty as ever to move their coal. The real impetus comes from the conference at Atlantic City, for even dealers who were inclined to withhold buying are now ordering better.

Independents are reported to be moving blocks at 25c. under company price on nut and as much as 50c. on pea. Retail prices are little, if any, changed. Some few dealers have increased about 25c., while others are anxious to do so, but are afraid of the effect it will have on their business. So far most of them have absorbed all the monthly raises.

Steam sizes are extremely quiet and the storage yards of company shippers still get a surplus that cannot be sent to market. The independent shippers are selling off price from 25 to 50c. on buckwheat and about 25c. on barley and rice. Of all the sizes barley continues to be in strongest demand.

Among dealers in Baltimore the feeling is growing that there probably will be a strike, but that it will not be of great duration. Fair stocks are on hand, as the public has not been buying heavily and the majority of coal merchants have kept ahead each month in receipts as compared with orders on their books. While some dealers may add additional supplies during the coming months, it is not likely that there will be any heavy storing unless conditions change materially. It is pretty sure that the retailers here will have to advance retail prices Aug. 1. The present schedule was created for June, the retail trade absorbing the wholesale advances that took place July 1.

At Buffalo there has been a better sale of anthracite lately, apparently in the belief that there is to be a strike. The increased demand is not insistent, but it will be if the meetings on the wage question come to nothing, as seems likely. Most of the retailers report that up to this time they have sold less coal for house use than in former summers.

New concerns are offering coke, so it seems that that trade is to be pushed anyhow, and besides that there is a new smokeless vein developing that is to be put on the market. The oil distributors also are active.

Lake shipments are still running down. For the week they were only 17,800 tons to Duluth and Superior and 2,000 tons to the Sault. Rates are unchanged.

## Connellsville Coke Market Hopeful

The accumulation of furnace coke on track at Connellsville has now been practically all worked off. The high point was about the middle of May, with more than 25,000 tons. This was in strong hands, not disposed to peddle or sacrifice it, and the bulk of it was gradually worked off on contract shipments, a little being exported.

There is talk now that the spot furnace coke market is stronger. It seems still to be quotable at $2.75@$2.85, but some sellers seem to hope soon to be able to get $3. This is doubtful, however, for it has just leaked out that one of the last contracts made was at $2.85, this being for the entire half year. Contracting in general was at $3. It is now said that with a fairly heavy operation there would be no loss at $2.85.

Spot foundry coke is moving a little better, but in general must be described as dull. The market remains quotable at $3.75@$4.25, this being for standard foundry coke, i.e., 72-hour selected. Some coke is sold for foundry use at lower prices, not fully standard.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended July 4, 1925 | 864,452 | 134,030 |
| Previous week | 991,341 | 159,473 |
| Week ended July 5, 1924 | 757,904 | 109,398 |

| | Surplus Cars | | Car Shortage |
|---|---|---|---|
| | All Cars | Coal Cars | |
| July 7, 1925 | 311,572 | 112,256 | |
| June 30, 1925 | 307,495 | 109,404 | |
| July 7, 1924 | 359,191 | 169,607 | |

# Foreign Market And Export News

## British Coal Market Unsettled by Threatened Suspension

Conditions in the Welsh steam coal trade are growing more disquieting owing to the unsettled situation created by the prospect of the termination of the miners' wage agreement at the end of July. The trade is most concerned about whether there will be stoppage at the end of July. New business has not come forward very readily of late, but in view of the possibility of a stoppage the colliery owners, while willing to sell coal for spot shipment on the basis of recent levels, are asking enhanced figures for later delivery. They anticipate that depot owners and other consumers abroad will come on the market for considerable supplies for stock to meet the contingency of a general stoppage.

With so much uncertainty in the national coal position it was inevitable that local conditions should be somewhat erratic in the Newcastle-on-Tyne coal trade. The possibility of a stoppage may have a stiffening effect, but it is not apparent yet, and in any case will be an artificial improvement. In the coal tonnage chartering market rates have been fairly steady, but, owing to local holidays, the volume of business has been on a small scale. The only important inquiry in the market is that of the Latvian State Rys. for 50,000 tons of Northumberland, Durham, Yorkshire, Scottish or Monmouthshire steam coals to be delivered from September to the close of navigation.

Production by British coal mines in the week ended July 4, a cable to *Coal Age* states, totaled 4,675,000 tons, compared with 4,420,000 tons in the preceding week.

### Hampton Roads Trade Unsettled; Market Tone Firm

Business at Hampton Roads last week was unsettled, pending the outcome of negotiations on which a possible hard-coal strike will be based. No coal was being sold ahead under any circumstances, everything being on a spot basis. Prices, however, remained practically unchanged. The output coming to this section was about normal, all mines running on a basis of three days a week. Some impetus has been given trade by foreign shipments, said to be provided for in anticipation of a British strike. The tone of the market was firm.

The Smokeless Fuel Co., agent at Norfolk for the P. L. M. French line of steamers, has arranged for shipments of about 500,000 tons of coal to French and English ports. It will be carried on the P. L. M. line, and several shipments have already gone forward.

### Purchases at Low Level in French Market

The French coal market continues quiet. Orders cover only the most urgent needs and then not overgenerously; concessions in consequence, have become, for the time being, a commercial habit.

Since July 1 the Loire collieries have reduced the men's salaries from 0.50f. to 0.30f. daily. In manner of protest against this measure, extremists have resorted to provoking agitation, but it is not likely that a strike will intervene.

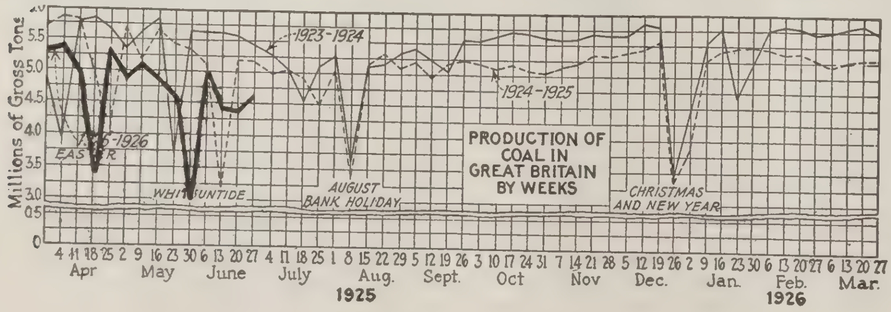
The promises made to the North and Pas-de-Calais mines, relative to a reduction in transport tariffs and the reestablishment of import licenses on German coal not having been kept it is possible that these collieries will eliminate entirely the allowance for high cost of living, which had been cut to half of its original amount.

Beginning July 10 anthracitic sized coals from the Ruhr (reparation fuels) were advanced 10f. per ton.

### All Grades Quiet in Belgium

The Belgian coal market is as unsettled as ever on industrial grades, the outlet for which is worse since consumption by metallurgists has fallen to naught, due to a strike. The slide of the franc, however, hinders foreign competition.

With regard to household fuels the situation is by no means bright, except for anthracite, which continues scarce.



Negotiations on a new wage convention have missed fire. The employers had proposed that wages be established in harmony with the basis furnished by the index number, but that in case of a crisis or a boom, salaries should be swayed by the price of coal, without, however, falling below 15 per cent of the basis furnished by the index number. A cut of 5 per cent was to have been applied July 1, but in consideration of present circumstances the operators have decided to postpone its application until Aug. 1.

### Export Clearances, Week Ended July 18, 1925

| | Tons |
|---|---|
| FROM HAMPTON ROADS | |
| For France: | |
| Fr. Str. P. L. M. 13, for Rouen | 5,507 |
| For Nova Scotia: | |
| Br. Str. Hochelaga, for Sydney | 7,107 |
| For Canada: | |
| Br. Str. Manchester Spinner, for Quebec | 7,168 |
| Dan. Str. Paris, for Three Rivers | 4,501 |
| For Canal Zone: | |
| Nor. Str. Fram, for Cristobal | 300 |
| Amer. Str. Achilles, for Cristobal | 12,041 |
| For Jamaica: | |
| Nor. Str. Dagfin, for Kingston | 2,186 |
| For Cuba: | |
| Dan. Str. Belgien, for Havana | 2,914 |
| For Far East: | |
| Br. Str. Tydens, for Far East Ports | 2,507 |
| FROM PHILADELPHIA | |
| For Newfoundland: | |
| Br. Str. Peveril, for St. Johns | —— |
| For Cuba: | |
| Nor. Str. Sokndal, for Havana | —— |
| FROM BALTIMORE | |
| For Chile: | |
| Br. Str. Ellaston for San Antonio (coke) | 2,518 |

### Hampton Roads Pier Situation

| N. & W. Piers, Lamberts Pt.: | July 9 | July 16 |
|---|---|---|
| Cars on hand | 1,368 | 1,552 |
| Tons on hand | 84,656 | 99,667 |
| Tons dumped for week | 130,388 | 118,937 |
| Tonnage waiting | 22,000 | 10,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 787 | 1,018 |
| Tons on hand | 51,000 | 68,950 |
| Tons dumped for week | 91,676 | 59,976 |
| Tonnagewaiting | 2,891 | 5,318 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,391 | 2,853 |
| Tons on hand | 114,065 | 142,650 |
| Tons dumped for week | 196,511 | 143,513 |
| Tonnage waiting | 12,200 | 6,360 |

### Pier and Bunker Prices, Gross Tons

| | July 10 | July 17† |
|---|---|---|
| PIERS | | |
| Pool 1, New York | $5.35@$5.60 | $5.35@$5.60 |
| Pool 9, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 10, New York | 4.50@ 4.60 | 4.50@ 4.60 |
| Pool 11, New York | 4.25@ 4.50 | 4.25@ 4.50 |
| Pool 9, Philadelphia | 4.65@ 4.90 | 4.65@ 4.90 |
| Pool 10, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 11, Philadelphia | 4.25@ 4.30 | 4.25@ 4.30 |
| Pool 1, Hamp. Roads | 4.25 | 4.25 |
| Pool 2, Hamp. Roads | 4.10 | 4.10 |
| Pools 5-6-7, Hamp. Rds. | 4.00 | 4.00 |
| BUNKERS | | |
| Pool 1, New York | $5.60@ 5.85 | $5.60@$5.85 |
| Pool 9, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 10, New York | 4.75@ 4.85 | 4.75@ 4.85 |
| Pool 11, New York | 4.50@ 4.75 | 4.50@ 4.75 |
| Pool 9, Philadelphia | 4.80@ 5.05 | 4.80@ 5.05 |
| Pool 10, Philadelphia | 4.60@ 4.80 | 4.60@ 4.80 |
| Pool 11, Philadelphia | 4.45@ 4.65 | 4.45@ 4.65 |
| Pool 1, Hamp Roads | 4.30 | **4.35** |
| Pool 2, Hamp Roads | 4.20 | 4.20 |
| 5-6-7, Hamp Rds | 4.10 | 4.10 |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | July 11 | July 18† |
|---|---|---|
| Admiralty, large | 26s.6d. | *25s.6d.@26s.* |
| Steam smalls | 15s.@15s.6d. | **23s.@26s.** |
| Newcastle: | | |
| Best steams | 17s.@18s. | **17s.@19s.** |
| Best gas | 18s. | **18s.6d.@19s.** |
| Best bunkers | 17s.@18s. | 17s.@18s. |

†Advances over previous week shown in **heavy type**· declines in *italics*.

# News Items From Field and Trade

## ARKANSAS

Chancellor W. E. Atkinson early in July granted an injunction to mine operators of the Clarksville Chancery District against District No. 21 of United Mine Workers and all local unions, restricting them from interfering with the operating of mines in this district, all intimidating methods and destructions and all wrongful assembling which would cause any violation of those restrictions. The plaintiffs are: Bernice Anthracite Coal Co., Collier-Dunlap Coal Co., Werner-Dunlap Coal Co., Arkansas Mining Co., of Clarksville; Semi-Anthracite Coal Co., of Coal Hill. It is not believed the injunction actually will prohibit public gatherings of the miners, such as were held at Clarksville, Paris and Russellville so long as the men conduct themselves in such a manner as will comply with the terms of this injunction.

J. G. Puterbaugh, of McAlester, Okla., announces that the tipple of the Backbone mine, Excelsior, near Fort Smith, is to be rebuilt at once. It was destroyed by fire late in June.

Lewis Noland and Albert Wilson, of the Pleasant View community, northwest of Atkins, have struck coal in their new shaft.

## ILLINOIS

Frank Lutz and Orley Grissom are sinking a new coal mine just east of Astoria. The shaft will be about 50 ft. deep and a steel cage will be installed to be operated by electricity. The bed of coal is 5 ft. thick and is of excellent quality.

The prolonged slump which the mining industry has undergone in Illinois, as well as in many other states, was reflected in an interesting manner when Attorney Cairo A. Trimble, Princeton, filed a petition with the board of review of Bureau County asking that the assessed value of the coal rights owned in that county by the Spring Valley and St. Paul coal companies be reduced from $10 an acre to $1 an acre. Mr. Trimble, in his petition, alleges that coal mining in northern Illinois, as an industry, has been practically wiped out and that the assessed valuation of the two coal companies which he represents is much too high.

The Kerens-Donnewald coal mine at Worden, owned by the McKinley System, which has been closed for a year and a half, has steam up again and a corps of men have been put to work cleaning up the débris in the mine. The movement to start the mine has been launched by the residents of Worden, who expect to operate it as a home trade mine if their venture is successful. Some time ago it was made known that the McKinley interests did not expect to operate the mine again, but intended to junk the machinery. The mine was originally sunk by the Kerens-Donnewald Coal Co. about 25 years ago.

The McLean County Coal Co., Bloomington, plans to reopen its mine in the near future, with M. B. Stewart, a graduate of the mining engineering department of the University of Illinois, in charge.

Mine No. 7 of the Franklin County Coal Co., at Royalton, which had been down since last February, resumed operation July 16.

Stoughton, Bates and Foster, who operate the new coal mine at Repatee, a few miles from Galesburg, have their new mine in working order. The mine is located on the main highway between Maquon and Farmington.

"Old North," the Taylor Coal Co.'s mine at Royalton, started work on July 15. The mine suspended operations last April. An agreement was reached July 11 between union officials and company representatives concerning certain points in the working agreement that were in dispute.

The Ladd mine, a few miles from Princeton, has been sold by the Illinois Third Vein Coal Co. to Peter Bergandi, a former coal miner, for $5,000. The property consists of sixty-five acres of surface land and all buildings which have been left upon the premises. The mine, once the largest in northern Illinois, has been closed since last fall, when the stockholders concluded to abandon the mining business at Ladd because of heavy financial losses caused by the inroads of non-union West Virginia and Kentucky coal. In its palmy days this mine property was worth at least $100,000. Twenty of the sixty-five acres has been grazing land for mine mules for at least thirty years and is rich, fertile land.

The Nason Coal Co., Nason, has received an order for a carload of coal from Houston, Texas, which makes the eleventh state into which coal from Jefferson County is being shipped at the present time. The Nason mine is disposing of all the coal it can mine at this time and is making arrangements to increase production as rapidly as possible.

The coal mine of the Indiana & Illinois Coal Corporation, of Chicago, located in Nokomis, was closed down recently, throwing 800 men out of employment. Officials of the company announce that the mine will be reopened about Aug. 1, when repairs now being made on the main shaft are completed. All the mines operated by the corporation in Montgomery County, located at Nokomis, Witt, Taylor Springs and Kortkemp, are closed down at the present time. The shaft located at Nokomis has a hoisting record of over 6,000 tons per day, and when running at full capacity employs over 1,200 miners.

## INDIANA

Following not guilty verdict by a jury at Terre Haute in the case of Vincent Povelight, mine shotfirer accused by state mine inspectors of firing illegal shots, the question came up of whether the other forty-odd miners facing similar accusations should be tried or dismissed. "I will put the case up to the state mine inspectors," said Assistant Prosecutor Littlefield. "If they wish to try the cases, we will go ahead, either separately or make one case out of all, as they wish. Otherwise, the remaining cases probably will be dismissed."

The Eastern Coal & Export Corporation has filed a certificate of withdrawal from the State of Indiana.

The United Electric Coal Co., a Delaware corporation and operating in two Illinois fields, plans the expenditure of about $2,225,000 in the next eighteen months in developing of tripping operations in Vigo and Sullivan counties. The company will erect two units this year, two next spring, two a year from now and two the following spring. Each unit will consist of one stripping shovel and one loading shovel. This machinery is capable of mining and loading about 1,000 tons of coal daily. Operations will continue the year round. It is the intention to build an enormous steel tipple at some convenient place in the field so that not only mine-run but various kinds of screened coal may be shipped.

## IOWA

The Pershing Coal Co. has obtained options in Whitebreast township, near Laomi, and expects soon to begin drilling for coal.

In order to demonstrate the advantages of coke as furnace fuel, the M. W. Warren Coke Co., of St. Louis, in co-operation with the Carbon Coal Co., Des Moines, local agent for the former company, has fitted up a furnace demonstrator on a truck. The exhibit makes the rounds of Des Moines streets. A representative of the coke company accompanies the lighted furnace, which is drawn about the streets of the city with a team of horses. At intervals he stops the truck and explains coke burning. The furnace was lent by the Green Foundry & Furnace Works of Des Moines.

## KANSAS

Repairs at mine No. 51 of the Central Coal & Coke Co., in the southeastern Kansas field, which was closed down several weeks ago, have been completed by July 15, and the mine is in condition to be reopened. Its normal production is between 1,100 and 1,200 tons a day. It employs 350 men.

The Kansas Supreme Court on July 11 decided in two appeals from the Crawford County District Court—E. M. Bird against the Young Coal Co. and Felix Corvi against the Crowe Coal Co. —that district judges have the right to review awards in compensation cases. The Supreme Court held that the District Court may review an award and make changes in either the amount or duration of time over which compensation payments are to be made. These cases were appealed to test the principle involved and the decisions affect a large number of claims for compensation for injuries suffered by mine employees.

## KENTUCKY

A delayed shot at the Wilson Mines, Bon Harbour, near Owensboro, on July 9, resulted in the death of Mayfield House, 20 years of age, a shotfirer, who was found with his head blown off.

The Munro-Warrior Coal Co., with headquarters at Birmingham, Ala., and operating extensively in both the Alabama and Kentucky fields, is planning major improvements and betterments at its mines at Nortonville, the extent and character of the work not having been announced as yet. The Kentucky mines of the company are reported to be operating on a better basis in recent weeks, the larger part of the output being shipped into Illinois and Indiana territory, the demand for all grades of both steam and domestic having shown material improvement of late.

Failure of the First State Bank at Elkhorn City, Pike County, which recently closed its doors voluntarily, is said to have been caused by slow business in the coal fields and frozen assets.

The mining towns of Haymond, Hemphill and Neon were reported flooded by raging waters in mountain streams on July 13, as a result of cloudbursts in the hills.

## MISSOURI

Governor Baker has appointed members of the State Board of Geology and Mines as follows: Elias S. Gatch and Phillip N. Moore, St. Louis; C. T. Orr, Webb City, and Edward M. Shepard, Springfield. Their terms expire on May 22, 1929. The appointments are subject to confirmation by the State Senate at its next session in 1927.

**Mine No. 1 of the West Kentucky Coal Co.**

This operation, located near Madisonville, Ky., is one of the St. Bernard group, which has a daily capacity of 15,000 tons. This group was acquired by the present owners in May, 1924.

O. A. Quisenberry, has struck a good bed of coal in the mine he is sinking on his farm just west of Vandalia, on Highway No. 22. At first the miners struck what is generally termed a valley in the vein and it was extremely difficult to cut through this, but in leaving the main entrance the coal struck was as fine a bed as has ever been found in this locality. This valley will be of some value to them in driving their entrance as it will form a splendid base at the bottom of the shaft.

## MONTANA

Edward Davies has been appointed state coal mine inspector by the Industrial Accident Commission to take the place of George N. Griffin, of Roundup, resigned. Mr. Davies also is a resident of Roundup. Griffin has held the position six years but because of failing health and eyesight was forced to resign. Davies, who was endorsed for the position by the state Federation of Labor at its meeting at Missoula, is 41 years old, was born in Pennsylvania, and his mining experiences cover six states and fields in England. After spending years in quartz mining he began mining coal 13 years ago.

## NEW YORK

For the three months ended June 30, Burns Bros., New York City, report a net income of $416,855, against $319,968 in the corresponding period last year.

The Delaware, Lackawanna & Western R.R. has filed plans for the erection of a 40,000-ton concrete trestle at its crossing of Delaware Avenue, in the northern part of Buffalo, to be used for the retail coal trade. It already has half a dozen such trestles about the city.

Following the closing of the Buffalo office of the Maher Collieries Co., of Cleveland, consequent on a merger of companies there, O. E. Southard, who opened the branch office, has formed a copartnership with Ralph K. Ford, coal operator of Columbus, Ohio, and an office has been opened at 182 Main Street, under the name of the Buffalo-Ford Coal Co.

Dr. T. H. Agnew, coal dealer, of Medina, has taken as Buffalo resident partner William J. Smith, late of the Maher Collieries office, and an office has been opened by the firm at 522 Marine Trust Building, under the name of the Agnew-Smith Fuel Co. Dr. Agnew will continue his residence and coal business in Medina.

## OHIO

A heavy rain on July 16 flooded the Provident mine of the Clarkson Coal Co. at St. Clairsville. Several hundred men were made idle. In addition to water pouring into the shaft, the boiler house was flooded, causing a cylinder head in the hoisting engine to blow out.

H. C. Cain, Columbus purchasing agent, has awarded the contract for 21,000 tons of Pomeroy nut, pea and slack for the municipal light plant, garbage disposal plant and other departments to the W. S. Harman Coal Co., of Columbus, at $1.14 per ton, f.o.b. mines. The freight is $1.26 per ton. The coal is to be shipped from the Co-operative Coal Co.'s Hobson and Blackstone mines, near Pomeroy. Bids for 8,700 tons for the Municipal Water Works department were rejected and will be readvertised.

Workmen are dismantling the tipple and machinery at the Gosline mine, near New Lexington, owned by Gosline & Co., Toledo. The owners say the machinery is too valuable to remain idle.

Suit was entered for an ancillary receiver for the Marmet Coal Co., of Cincinnati and Raymond City, W. Va., before Judge Smith Hickenlooper in the U. S. Court for the southern district of Ohio on July 14 by the Fourth and Central Trust Co., of Cincinnati, as trustee for the holders of $1,250,000 of bonds of the coal company. Main proceedings for the foreclosure of the mortgage were filed in U. S. District Court for West Virginia, after the coal company failed to meet its interest obligations and defaulted in the payment of 10c. a ton on coal produced, which was to go into a sinking fund for the payment of the bonds. That Court appointed V. L. Black, G. W. Williams and E. L. Waddell as receivers of the property of the company in West Virginia.

In his order Judge Hickenlooper assumed ancillary jurisdiction and ratified the order of the West Virginia federal court, granting the bank's petition and naming Messrs. Black, Williams and Waddell as receivers in this jurisdiction.

Two large coal companies in the New Philadelphia field will soon resume operations after an idleness of some time. The Midvale-Goshen Coal Co., of Cleveland, is cleaning up two mines and will start operations soon, employing 200 men. The Underhill Coal Co., of Cleveland, also will open three mines soon, after an idleness of about fourteen months.

In closing up the affairs of the Burton-Townsend Co., of Zanesville, one of the subsidiaries of the R. L. Dollings Co., Romert M. Pfeiffer, a Columbus attorney, bought in the assets at receiver's sale for $200 000. He has sold the two operating brick plants to the Zanesville Clay Products Co. and three sand and gravel plants to the Ayers Mineral Co., of Zanesville. He is now trying to dispose of four small coal mines in the Crooksville field in order to close up the affairs of the company.

David Watkins, president of Sub-District No. 6 of the United Mine Workers, addressed a large gathering of miners at New Lexington, recently, calling upon the men to "stand pat" for the Jacksonville scale. Union representatives will be sent to all mines in this section operating under the 1917 scale and use peaceful means to induce the men to cease work.

## PENNSYLVANIA

The Consolidation Coal Co. resumed operations Monday, July 20, at Mines No. 104 and 106, in the Meyersdale field. These mines have been down since April 1. The company has found a market for 16 to 17 cars a day, which will keep the mines working part time each week.

William M. Henderson, president of the Henderson Coal Co.; Albert R. Budd, of the Hillman and Diamond companies, and Floyd B. Lockhart, general sales manager of the Hillman Coal & Coke Co., all well known in Pittsburgh, recently, had Jerome G. Farquhar, treasurer of the Plymouth Oil Co., a Delaware concern, arrested on charges of false pretense and issuing false statements in connection with the promotion of the Plymouth Oil Co. The plaintiffs are minority stockholders. The fraud concerns the alleged issuance of 1,000,000 shares of stock instead of 350,000 shares. An equity suit was also filed in Delaware against officials connected with the Benedum & Trees interests, well-known oil operators, who control the Plymouth company, the stock, which was originally issued at $1.50 a share, rose as high as $37 a share. The plaintiffs declare that as a result of issuance of more stock the value of their stock has dropped to $10, while the defendants claim the market value of the stock is $28 a share. All the parties in the suit got their stock at the "inside" price.

The weekly report of the Pittsburgh Coal Producers' Association, released July 16, covering statistics of the previous week, shows that of a weekly capacity of 629,880 tons, the total production of the district was 42,607 tons, or 6.8 per cent. These reports cover practically all the large commercial interests of the Pittsburgh district, including the Pittsburgh Coal Co. The percentage of operations compares with 8.3 per cent for the week ended July 4 and 31.6 per cent for the week ended July 12, 1924. Sixty-seven out of 80 reporting mines are idle. The production was divided as follows: Rail, 34,259 tons; river, 6,918; used 1,430.

What is said to be the largest cargo of anthracite ever put aboard ship for transportation by sea was shipped this week by the Philadelphia & Reading Coal & Iron Co. The cargo consisted of 6,500 tons, compared with normal cargoes of 1,500 to 1,600 tons. It was loaded on the steamboat Bristol at Port Richmond, Philadelphia, July 21, consigned to Providence, R. I.

Four miners were seriously burned in a gas explosion at the Truesdale colliery of the Glen Alden Coal Co., at Nanticoke, July 15. The cause of the blast is not certain, but the finding of a partly burned match at the scene of the explosion leads to the suspicion that one of the men was smoking, in violation of the mine laws. The men were wearing electric lamps.

The Jefferson & Indiana Coal Co. has opened an additional mine at Tide, where the company is producing 400 tons daily. Another at Coal Run has been opened. This company is now mining 7,000 tons daily in the various mines leased from the Rochester & Pittsburgh Coal & Iron Co. and, operating on the 1917 basis, expects soon to be mining 10,000 tons daily.

The new $2,000,000 coal breaker under construction at Lansford for the Lehigh Coal & Navigation Co. will be able to handle the coal taken from three different collieries.

Changes affecting the Woodward, Bliss and Storrs mines of the Glen Alden Coal Co. were announced last week. Joseph A. Reynolds, who for some time worked as superintendent at the Woodward colliery, in Edwardsville, and who was relieved for a vacation, is now superintendent of the Storrs colliery. G. P. Troutman, superintendent of the Bliss mine in the Nanticoke region, has succeeded Mr. Reynolds as Woodward superintendent. The superintendency of the Bliss mine has been taken over by James Garvin, who was employed at the Storrs colliery for some time.

Secretary of Labor and Industry Richard H. Lansburgh has appointed Melvin G. Lehman, of York, chief adjuster of the Bureau of Workmen's Compensation, as assistant director of that bureau. Lehman will continue his duties as adjuster and will act as the general assistant of William H. Horner, director of the bureau, having charge of the bureau in his absence. The appointment is in keeping with the recent appointment of a deputy to the Secretary. There has never been anyone authorized to act in the absence of either the Secretary or the bureau chief.

**A Trip Emerging from Nisbet Mine**

This mine—No. 11—located near Earlington, Ky., is one of the St. Bernard group of the West Kentucky Coal Co.'s holdings.

## TENNESSEE

L. T. Dee, of the Superior-Rock Springs Coal Co., with headquarters in Ogden, has been named as one of the forty directors of the National Coal Association. He will represent Utah and Wyoming on the Board and is the first Ogden man to receive such a distinction. The election took place at the recent Chicago meeting.

The Liberty Coal Mining Co., Commercial Bank Bldg., Memphis, of which Fred M. McDonald, Sr. is president, has increased its capital from $100,000 to $250,000.

## UTAH

Two more Utah coal leases were announced early in July by the Secretary of the Interior. One of them comprises 1,800 acres in Book Cliffs region, about eleven miles south of Sunnyside. The government royalty is 12½c. a ton for coal mined and there must be a minimum investment of $75,000 during the first three years with a minimum production of 50,000 tons a year beginning with the fourth year of the lease. The other tract includes 800 acres in Pleasant Valley, Wasatch Plateau, about three miles west of Clear Creek. The royalty is on a basis of 10c. for each ton of coal mined, and the minimum investment must be $90,000 during the first three years with a minimum production of 50,000 tons a year beginning with the fourth year of the lease. The sale of these leases will be made in Salt Lake City in the near future.

### WASHINGTON

The Bellingham Coal Co. has obtained control of the Tiger Mountain Mine, 4½ miles south of Issaquah, and is preparing to open up the property at once. It is reported that eight veins of a superior grade of coal from 5 to 10 ft. thick are indicated on the property. Lawrence and George Campbell, of Issaquah, have taken a contract to drive a 90 ft. rock tunnel on which they have started work. This tunnel should cut a 10 ft. bed at a point to provide a 400-ft. lift. By the last of August the company expects to be in a position to produce 500 tons of coal a day.

### WEST VIRGINIA

E. L. Douglass, receiver for Jewett, Bigelow & Brooks, by order of the U. S. District Court of West Virginia, has been empowered to turn back to the owners of the land the properties of the Seminole Gas Coal Co., no bids for the properties having been received. The J. B. B. Co. expended about $365,000 on this plant at Gypsy, and it produced about 18,000 tons of coal a month. The same process will be followed with the property of the Guyon Mining Co., at Manbar, which produced about 22,000 tons per month. Steps have been taken in the United States courts to turn this property back to Miss Irene Hichman, owner of the land.

Howard W. Showalter, president of the Continental Coal Co., announces that the Monongahela and B. & O. Railroads have agreed to recognize Sands mine of the company, at Rivesville, as a joint mine.

An involuntary petition of bankruptcy was filed on July 6 in the U. S. court for the Southern District of West Virginia against the Synn Glen Fuel Co., of Newlyn, Fayette County, on the application of the Charleston Hardware Co. The creditor claims that the coal company owes in excess of $1,000 and that it committed an act of bankruptcy in executing a deed of trust last February to C. B. Floers, trustee for the Banks-Miller Supply Co., of Huntington, to secure a claim of $6,103.41.

Fire was discovered in the Osage Mine of the Brady-Warner Coal Corporation, at Osage, July 10, soon after the day shift had left the mine. The fire, according to officials, is burning in an abandoned section of the mine. R. M. Lambie, head of the state Department of Mines, was notified of the fire and District Mine Inspector William Moore arrived at the mine soon after the fire was discovered and began the work of extinguishing the flames. Mine rescue crews from both the Preston and Marion divisions of the Bethlehem Mines Corporation were sent to fight the fire. They were under the direction of Robert Reid, safety engineer of the Bethlehem corporation. Inspector Moore reported the fire under complete control July 11.

State mining inspectors say that the mine fire at the plant of the Eureka mine of the Bertha-Consumers Co., near Morgantown, has been extinguished, but that it will require 30 days to clean it up. The main fire started March 16.

A judgment of $900 was awarded Shannon Bros. against the mines owned by Henry Ford at Twin Branch, in McDowell County, in the federal court at Bluefield. The plaintiffs sued on an alleged breach of contract for the sum of $3,800.

### CANADA

Foreign coal continues to arrive in Montreal in large quantities. In the past few days the steamer Baron Elinbank, from Glasgow, discharged 2,435 tons there. Other colliers to reach the port with cargoes are the Glencorrie, Glendochart, Keybar and Maple Hill. At Levis, Chicoutimi and Port Alfred a number of steamers are discharging cargoes of United States coal.

Eighty men employed by the Marcus mine, in the Edmonton district, Alberta, who had been out on strike on a wage disagreement since midnight on June 30, returned to work July 8. The men will work at the old scale until such time as the Edmonton quota for the Ontario coal shipment is mined and loaded. The other strikers decided to await the arrival of Fair Wage Officer Harrison, who was expected to try to bring about an agreement between operators and miners.

## Traffic

### I. C. C. Again Defers Cut in Rates from Kentucky

Suspension of the revised tariff on coal from eastern Kentucky and West Virginia mines to Mississippi River points and beyond has been extended until after a hearing is conducted by the Interstate Commerce Commission.

Illinois coal operators opposed the revision, which would have allowed the Kentucky and West Virginia operators a reduction of 15c. a ton on coal to Iowa territory and certain Mississippi River points.

The reduction had been allowed by the Louisville & Nashville R.R., the Chesapeake & Ohio R.R. and the Norfolk & Western Ry. last March, but was never put into effect, the Interstate Commerce Commission suspending the revision until a hearing could be conducted.

The hearing was to have been held in Chicago July 8, but none of the parties interested was ready for trial and the hearing was postponed. As the time for expiration of the suspension was near at hand, the suspension was extended. The Illinois operators contend that the proposed rates would discriminate against them. They assert that they are already working under rate and wage handicaps as compared with the inner crescent pits in the East.

### Southwest Coal Men Ask Refund Following Rate Cut

At the conclusion of a hearing in Kansas City, Mo., July 15, attorneys for about four hundred coal dealers in Kansas and Nebraska who are demanding a refund on freight rates from railroads carrying Colorado coal into their districts, and attorneys for the railroads fighting the refund demand, were instructed by Alfred S. Knowlton, examiner for the Interstate Commerce Commission, to file briefs with the commission not later than Sept. 1. The dealers base their claim on a recent decision of the Commission reducing freight rates from the Colorado field into Kansas and Nebraska. They ask a refund of the difference between the old and new rates on coal shipped them in the last two years. Those in the western part of the two states, where the reduction was greatest, were most interested in presenting their case before the commission examiner.

### Orders Cut in Hard Coal Rates To Staten Island

Rates on anthracite from the Pennsylvania mines to Staten Island, N. Y., were declared unreasonable and unduly prejudicial on July 15 by the Interstate Commerce Commission, which ordered the railroads to establish rates not more than 13c. above the rates now applying to Bayonne, Jersey City and other points in northern New Jersey taking the same rate. A differential of only 10c. above the northern New Jersey rate is allowed to certain points via the Pennsylvania R.R. The change is to be effective Sept. 1. At present the rates to Staten Island are in some instances 70c. per ton higher than those to northern New Jersey.

### Sanction New Rates in New York

The Public Service Commission of New York has approved a new freight schedule of the Lehigh Valley R.R. on bituminous coal and coke, including coke breeze, dust and screenings, carloads, from Buffalo, East Buffalo and Harriet to various stations on its lines and on lines of other carriers; changes effect reductions; effective July 30, 1925.

A new regulation of the Delaware, Lackawanna & Western R.R. filed with the Public Service Commission provides for switching absorption of 38c. per ton (net or gross, as rated) at Corning, N. Y., on coal and coke, carloads, switched by the New York Central.

## Industrial Notes

**P. S. Gardner,** American Rheolaveur Corporation, with Andrews Allen, of Allen & Garcia, left July 15, on the S.S. Mauretania for Europe, where visits will be made to plants in Belgium, France, England and Germany. The purpose is to see some of the 150 Rheolaveur washeries located in Europe, the total capacity of which is 40,000,000 tons annually.

**The Worrell Mine Tie Manufacturing Co.** has been organized with a capital stock of $50,000 and expects to begin operations before Aug. 1. This company will manufacture steel mine ties and also do general electrical work. The officers of the company are J. Hugh Miller, president; J. G. Durant, vice-president; R. H. Worrell, manager; J. C. Durant, Jr., secretary-treasurer. R. H. Worrell, the manager, formerly was with the E. E. White Coal Co. at Stotesbury, as chief mechanic for a number of years.

**A. T. Shurick** leaves for London Aug. 1 to study the Thornley briquetting binders, manufactured by the Thornley Binders, Ltd., 37-41 Gracechurch St., London, England. The plant of the British company is at Stromness, in the Orkney Islands.

**Arlington Bensel,** formerly vice-president and general sales manager of the Driver-Harrison Co., has announced his connection with the **"Hybnickel" Alloy Products Co.,** as exclusive sales agent, with offices at 300 Madison Ave., New York City.

**The Morrow Mfg. Co.,** Wellston, Ohio, announces the opening of a branch sales office at 1018 Fulton Building, Pittsburgh, Pa., in charge of V. T. Barkley, who has been associated with the coal-mining industry for the past fourteen years. Mr. Barkley will be glad to confer on and plan coal-handling problems.

## Association Activities

The third quarterly meeting of the Pittsburgh Coal Mining Institute was held July 11 in the Chamber of Commerce, Pittsburgh. H. N. Eavenson, mining engineer, delivered the principal address at the afternoon meeting. S. C. Reynolds, safety inspector, handled the question-box discussions. S. A. Taylor delivered the chief address at the evening session, when C. P. Byrne, state mine inspector, handled the question box. A good attendance was noted.

## Coming Meetings

**Rocky Mountain Coal Mining Institute.** Summer meeting, Aug. 26-29 at Price, Utah. Secretary, Benedict Shubart, Denver, Colo.

**American Institute of Mining and Metallurgical Engineers.** 132d meeting, at Salt Lake City, Utah, Aug. 31 to Sept. 3. Secretary, F. F. Sharpless, 29 West 39th St., New York City.

**Oklahoma Coal Operators' Association.** Annual meeting, Sept. 10 at McAlester, Okla. Secretary, A. C. Casey, McAlester, Okla.

**New York State Coal Merchants' Association.** Annual convention, Sept. 10-15, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries,** Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**Fourth National Exposition of Power and Mechanical Engineering,** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

# New Equipment

## New Shovel Is Largest Mounted on Tractors

The new Marion Model 125 shovel, with its all-steel boom, firebrick arch, high-pressure boiler, heavy gantry frame, extra large roller circle and improved hoisting unit with pressure oiling, is said to be the largest and heaviest excavator that has ever been mounted on crawling traction trucks. A number are now in coal stripping use.

This new shovel is full revolving, has large dipper capacity, and is designed throughout for the hardest work and toughest digging. The design and construction are such that the main upper frame, which carries all the machinery, including the boiler, piping and cap, can be shipped as a unit on railroad trucks. Because of this, a minimum amount of erection is necessary in the field.

The machine is mounted by three-point suspension on four crawling traction trucks and equalizing is accomplished by means of a pivoted, cast alloy-steel axle. In traveling over uneven ground the front trucks with their axle are free to adjust themselves in a vertical plane without a tendency to create stresses or strains in the frame, or cause a steering movement.

The lower frame is constructed of 30 in. I-beams which, at present, are the deepest manufactured. The top of the frame is covered with heavy 1-in. gusset plates. The lower circle is made of 80-lb. rails and is 16 ft. in diameter.

Propulsion is entirely through gears to all four of the crawler trucks. Any one of the trucks can be disconnected by a clutch. This makes steering easy and permits a small turning radius.

The boiler is a locomotive type with a fire brick arch as standard equipment. This arch is not only a fuel economizer but it also eliminates tube troubles by preventing cold air from reaching the tubes while firing.

Hoist, swing and crawl main bearings are equipped with a lubrication system similar in design to that of an automobile engine and consisting of a motor-driven oil-circulating pump, sump tank, conductor and drainage piping. The makers believe this is the first power shovel to be equipped with a pressure oiling system.

## Strong Briquet Binder Will Harden with Age

A new binder for briquets that shows unusual cohesion will soon be introduced in this country from England, where the process has been in course of development for the past three years, a commercial plant involving an expenditure of something over $500,000 being put in operation during the fall of last year.

At the plant of the Rose Patent Fuel Co., in Great Britain, large briquets, weighing 12 and 24 lb., such as are manufactured quite commonly in Great Britain were dropped from a height of 36 and 40 ft. onto railroad iron, and were fractured only at the point of impact, whereas the same test applied to coal-tar briquets resulted in their breaking up into small bits.

Another distinctive feature of this new binder is that it has the remarkable characteristic of hardening with age, much the same as cement. Thus, instead of disintegrating when not used at once, the briquets continue to harden for an indeterminate period.

The manufacturing process with this binder is exactly the same as with coal-tar pitch, except that less power is required for the grinding, and the plugging. The admixture of the binder with the fines is readily made at tempera-

**Large-Type Crawler Shovel on the Job in a Coal Pit**

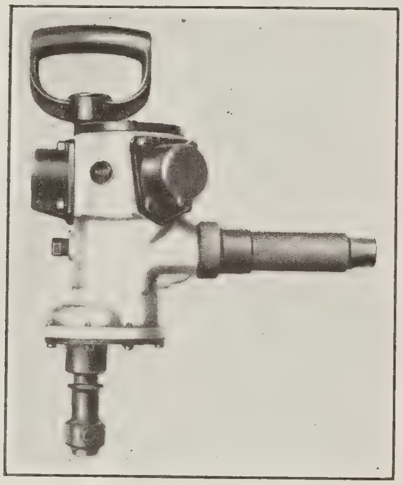
This new shovel is built for hard work in places which it can reach on its own tractors. Heavy construction throughout and the incorporation of a number of advanced ideas in shovel design are counted on to make this excavator popular in coal mining.

tures of 70 to 80 deg., as compared with 110 to 120 deg., as required with coal-tar pitch.

A series of exhaustive steaming tests made at the New River Yard of the Metropolitan Water Board, in London, England, show that these briquets have an appreciably higher calorific value than those formerly used, which were manufactured from coal-tar pitch. Under conditions of forced draft, in the furnace, the briquets "cauliflower" uniformly, thus favoring combustion; there is no tendency to soften, break down or disintegrate while burning. A. T. Shurick, Athens, Ohio, will introduce the new binder into this country.

## Wood-Boring Air Drill Has Renewable Cylinders

A new-size, light-weight, reversible, pneumatic wood-boring machine, brought out by the Ingersoll-Rand Co., has cylinders which are renewable and interchangeable. This is a valuable feature, as any cylinder after long service, easily may be replaced and the motor made as good as new at slight cost. This new drill is known as size DD and is suitable for wood boring up to 1-in. diameter holes. The construction of this machine is similar to cylinder drills which this company manufactures.



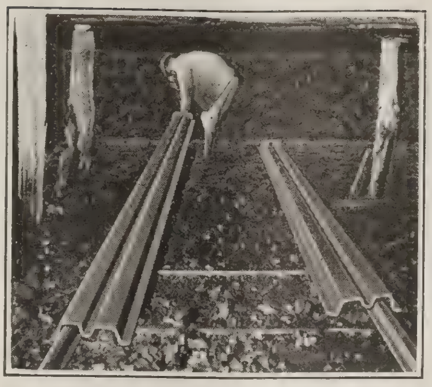
**Three-Cylinder Boring Machine**

This light-weight air drill weighs only 15 lb. It is specially suited for boring wood. A 1-in. drill may be used with it.

The main features of this type machine, in addition to the special cylinders are, briefly: special three-cylinder motor; light-weight aluminum case, with steel bushings cast in position in all the bearing holes and the throttle hole and renewable crankpin sleeve.

The three-cylinder motor has its rotating parts all accurately balanced, eliminating vibration and reducing wear and tear on the machine. The drill is economical in cost of maintenance, is high powered, and, moreover, every part is readily accessible for inspection.

These drills are furnished with a spade handle and bit chuck. A breast plate or feed screw can be substituted in place of the grip handle when so desired and a drill chuck in place of the bit chuck. Thus the drill can be adapted to a wide variety of work.



**Tompkins Extension Rails**

These devices, especially helpful in mines using loading machines, were patented by Harold P. Tompkins of Charleston, W. Va. The ease with which each rail can be moved into place after each length of track is laid, can be appreciated from this illustration showing a man sliding a rail into position. The bail acts as a car stop when it is laid back over the end of the rail. Tompkins extension rails are distributed by the Midland Steel Products Co., of Cleveland, Ohio, and the Banks-Miller Supply Co., of Huntington, W. Va.

## Obituary

**Thomas D. Cassidy**, 69 years of age, coal operator of Lexington, Ky., president of the Cassidy Coal Co. and vice-president of the Elkhorn Coal Co., recently died in that city after a long illness. He was a native of Flemingsburg, Ky., going to Lexington thirty years ago. A son, Tilford J. Cassidy, and his wife, survive.

**Hugh Bone**, first secretary-treasurer of District 14, United Mine Workers, died July 13 at the home of a daughter in Kansas City. He was 76 years old at the time of his death. He served in the Kansas House of Representatives during the Populist era. A native of Scotland, Mr. Bone came to Kansas in 1885 and was active in organizing the district union of the miners in 1892. He left the Kansas district for Kansas City five years ago.

## Publications Received

**Surface Machinery and Methods for Oil-Well Pumping**, by H. C. George, Bureau of Mines, Washington, D. C. Bulletin 224. Pp. 148; 6 x 9 in.; illustrated.

**Bituminous Coal as Generator Fuel for Large Water-Gas Sets with Waste-Heat Boilers**, by Wm. A. Dunkley, Bureau of Mines, Washington, D. C. Technical Paper 335. Pp. 43; 6 x 9 in.; illustrated. Summarizes tests made of bituminous coal in water-gas sets, shows the practical efficiencies obtained and discusses phases of the process.

**Electrical-Machinery Erection**, by Terrell Croft. McGraw-Hill Book Co., 370 Seventh Ave., New York City. Price, $3. Pp. 306; 5½ x 8 in.; illustrated. Describes the methods and processes used in modern practice in the mechanical installation of electrical machinery.

**Personal Leadership in Industry**, by David R. Craig and W. W. Charters. McGraw-Hill Book Co., 370 Seventh Ave., New York City. Price, $2.50. Pp. 245; 5½ x 8 in. Gives complete and practical treatment of what the manager of men faces in getting work done.

**Structure of Herrin (No. 6) Coal Seam Near Duquoin**, by D. J. Fisher. Department of Registration and Education, Division of the State Geological Survey, Urbana, Ill. Report of Investigations—No. 5. Pp. 34; 6x9 in.; illustrated. Describes the results of a geologic study of the Herrin (No. 6) coal seam, including the lay or amount of dip of the coal bed and the faults, splits and other features which interrupt its continuity. The physical characteristics and modes of origin of the coal and its inclosing beds also are briefly treated.

**Third Annual Report of the State Board of Registration for Engineers of West Virginia for Year Ending June 30, 1924.** Pp. 59; 6x9 in.

## New Companies

M. A. Pishner, Carrie Pishner and Joseph Nugnola, of Pittsburgh, Pa., contemplate the incorporation of a new coal company to be known as the **Pishner Fuel Co.** The new company plans to operate a mine. It is expected that a Pennsylvania state charter will be granted within a few weeks.

**The Federal Coal Mining Co.** was incorporated in Henryetta, Okla., early in June, with a capital stock of $15,000, by Patrick J. O'Hara, John P. Johnson and others.

**The Warren Coal Co.** was incorporated in Birmingham, Ala., late in June by H. A. Warren, David McCarty and others.

Papers have been filed chartering the **Byesville Coal Co.**, Byesville, Ohio, with an authorized capital of $12,500 to mine and deal in coal. Incorporators are Fred H. Peters, Alex Ramage, Mike Novotny, H. P. Muhlbach and William Grandy.

## Trade Literature

**Static Condensers for Power Factor Correction.** Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa. Circular 1670-Ed. 2. Pp. 20; 8½x11 in.; illustrated. Effects of low power factor, power factor correction, selection of corrective device, theory of static condensers, chart to determine kva. required, table of sizes are some of the contents of this bulletin.

**Ash and Soot Disposal at Milwaukee Sewerage Plant.** Conveyors Corporation of America. Chicago, Ill. Pp. 16; 8¼x10¾ in.; illustrated. Tells how the ashes and soot are handled by conveyors from the stokers, combustion chambers, economizers and chimney.

**Mesta Automatic Plate Valves.** Mesta Machine Co., Pittsburgh, Pa. Bulletin D. Pp. 16; 7½x10½ in.; illustrated. Describes the use of these valves (Iversen patents) on all types of compressors. Charts giving temperatures of air delivered by compressors and blowing engines and showing curve for flow of gases through orifices and nozzles are included.

The Falk Corp., Milwaukee, Wis., recently issued bulletin No. 38, 47 pp.; 8¼x 10¾ in., illustrated, on its **Herringbone Gear Speed Reducers.**

**Model "D" Megohmer.** Herman H. Sticht & Co., 15 Park Row, New York City. Bulletin No. 130. Pp. 7; 6x9 in.; illustrated. Besides describing this instrument, instructions for its use are given.

**Standardized Substations.** Delta-Star Electric Co., Chicago, Ill. Bulletin No. 12. Describes new line of standardized steel tower outdoor substations intended for installation by utilities serving customers buying power from high-tension distribution lines.

**Maag Gears.** Niles-Bement-Pond Co., New York City. Pp. 19; 9 x 11 in.; illustrated. Circular No. 265-1. Describes the advantages and construction of these gears.

**Modern Practice in Mining**, by Sir R. A. S. Redmayne. Longmans, Green & Co., 55 Fifth Ave., New York City. Third Edition. Vols. I and II. Price, $3.75 each. Vol. I covers the occurrence of coal, value and method of boring. It has 231 pp.; illustrated. Vol. II is on sinking of shafts. It has 273 pp.; illustrated. Both books are 6 x 9 in.

**Our World Trade in 1924.** Foreign Commerce Department, Chamber of Commerce of the United States, Washington, D. C. Seventeenth quarterly issue. Pp. 31; 6 x 9 in. Gives the value and volume of principal exports and imports between the United States and chief foreign markets.

**Microscopical Structure of Anthracite**, by Homer G. Turner, assistant professor of geology, Lehigh University, Bethlehem, Pa. Circular No. 2. Reprinted from the Transactions of the American Institute of Mining and Metallurgical Engineers. Pp. 21; 6 x 9 in.; illustrated.

**Grinding, Pulverizing and Separating Machinery.** Raymond Brothers Impact Pulverizer Co., Chicago, Ill. Catalog No. 17. Pp. 50; 8 x 11 in.; illustrated. Describes the difficulties of grinding and their solution. Plant layouts are shown covering proper arrangement for various materials.

COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
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Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

R. DAWSON HALL
*Engineering Editor*

Volume 28 NEW YORK, JULY 30, 1925 Number 5

## Those Terrible Mines?

EVERY ONCE in a while comes the plaint of the miner against the unfortunate conditions under which he works. He really does not wish to labor in the open with the carpenter and mason, but he does want extra pay for toiling underground. It is true, mining work is done in the dark and in the dirt, but it is not done under a wilting sun or in the frost. The carpenter and mason have much harder physical conditions than the miner. The plasterer, the grader and the trench digger and backfiller have just as dirty work and have to face the climatic variations also.

The miner is really fortunate. He has no hot and no cold days. True, he may have a wet place, and if the water falls from above he may have to put up sheet iron or wear slickers, but carpenters, masons, graders and trench diggers often work in the rain and when it gets beyond their endurance they quit work and lose pay for the days or part days they are idle. We all irk somewhat under the compulsions of industry, whatever we may be doing, and the miner is to be excused for his long-drawn sigh, but that is no reason why he should receive sympathy, instead of the congratulation to which he is entitled. He knows he has the better fate, for he almost never leaves the industry, and when he is asked to work outside he refuses or he accepts the new occupation with more complaints than he ever leveled at his accustomed job and with the intention of getting "below" again as soon as he can.

## Before or After Taking

CONTACT with the actual problems of mining before or after receiving collegiate training in engineering is necessary if a man would be a successful and competent mining engineer. The technically trained man must either start from the earth or come down to earth before he can be successful at supervision. It is true that the young man who has worked in the mines is sometimes so enamored of his job that he resents being sent to college "to cram" as he expresses it and that the man who goes to college first wants to sit behind the mahogany and issue orders as soon as he returns. But neither plan gives good results.

Not only technological training specific to the industry but information that can be attained only from personal contact with the actual work is necessary for the man who walks around and gives orders. It is just as well to make up one's mind to that. Even in Europe actual experience of this kind is customary. One would say that the "physical training" should be as long as the academic and the closer it is to the actual work the better, the more the atmosphere is absorbed and the closer are the observations that are made.

Six to eight years, half academic and half in actual field contact, is not too long a period in which to make a real start. A man thus trained should be occupying a really responsible position at the age of 30. Many a man by the old route without college training and with hard work gets to such a position in less time, but such advancements are usually made in small corporations, and the men that get them usually stay for the rest of their lives either just where they are or find employment with a company of no larger size.

## Less than One in a Thousand

GREAT BRITAIN REPORTS that the fatality rate per thousand in its coal mines is lowered to 0.98. Last year it was 1.06. In the same year the fatality rate in the United States was 2.87 per thousand employees or nearly three times as high as in Great Britain, and that in a year of relative depression. It must be remembered, however, that Great Britain also suffered from a depression and that the number of working hours in a day is only seven.

Perhaps it would be best to make a comparison per thousand 2,000-hr. workers. The British rate in 1924 we figure as 1.20, whereas our rate during 1923 was 3.63 or about three times as great. Many believe the British miner is exposed to more natural hazards than the American. That is always difficult of proof, but the figures given are disquieting, to say the least, and only by an investigation of the rate per million tons produced can any relieving consideration be found.

The fatality rate per million tons of coal mined in this country was 4.15, whereas in Great Britain it was 4.36, so the tonnage was obtained in the United States at a lower blood cost per ton. In the matter of ease of production America certainly has the advantage, so it can hardy be wondered that it has a lower rate per million tons mined. The marvel is that we have not been able to make the difference more considerable.

## If Coal Cutting Failed This Is the Reason

SAYS John L. Lewis, the president of the United Mine Workers, in his book "The Miners' Fight for American Standards," which should read for "Standards Higher than Those Normal to American Labor:" "Fifty years have passed into history [it should be only a little over half that length of time but let that pass] since the first undercutting coal machine designed to relieve the strength-sapping strain on the miner's body and [to attain] materially lowered production costs was introduced; yet coal mines continue to be opened, the owners of which have neither the capital nor intention to provide this essential machine."

In judging the conclusion that this is a "sin of management in the bituminous-coal industry" we will pass by the generally admitted fact that the mine workers opposed this great innovation and are still opposing it where it is not introduced, though it saves a "strength-sapping strain on the miner's body," and we will proceed to call attention to the fact that the miners through their unions repeatedly have attempted and almost everywhere succeeded in establishing a differential that makes the introduction of the machine a doubtful source of profit and the use of the better classes of cutters productive of only indirect gain. Machine coal in many instances is more economical than what is termed "hand-mined coal" (but rather should be called "powder-mined coal") only because it is not so badly shattered and because its production reduces the area to be developed and maintained and saves in the construction of houses.

In cases where the use to be made of the coal does not demand the production of large sizes the advantage of the machine is slight except in so far as it removes the danger of solid shooting. The union is responsible largely for this being a hazard. There is little evidence that "powder mining" is strength-sapping. Its chief disadvantage is its danger, and where the coal is soft and easily shot and precautions are taken, as in the Connellsville region, which, by the way, is non-union and uses proper methods of shooting, the statistics show that the dangers can be avoided. In union fields, where the union men insist in overloading their holes and in firing them or having them fired, and where face sprinkling is unknown, the hazard of "powder mining" is extreme.

This charge of Mr. Lewis falls to the ground. We rejoice to see machine mining develop, but only because of secondary, almost impalpable economies and because of safety and not because the mining by machine is *per se* any cheaper in most cases than "powder mining" or true "hand mining." In the cost of machine mining the cost of powder, repairs, interest and depreciation have, of course, to be considered and when they are the machine has only incidental advantages over hand mining. The union has seen to that. Yet Mr. Lewis uses the fact that the use of machines is only 67 per cent instead of 100 per cent as a club against the operator. Being with his back to the wall, we suppose he will be excused for using what weapons come to his hand to the best advantage, even though he cannot prove the right of ownership.

In the anthracite region the use of the mining machine has been made practically impossible by the action of the union. It has introduced into the contract made with the operators a provision that has caused the arbitrator in his belief no option but to give such a decision to the mine workers as makes the operation of mining machines unprofitable. Mr. Lewis has uncovered a mare's nest. His attack on coal operators calls renewed attention to the union's studied opposition to mine-operating efficiency.

## Waiting for Others

FROM COLONIAL times the farmer has waited for others to find a way for him. Fortunate, indeed, it is that the Department of Agriculture and the state agricultural colleges have developed fertilizers, insect poisons, new systems and plant varieties so that the farmer has been able to overcome the steady impoverishment of his soil, droughts and the attacks of plant plagues.

Coal men have followed a similar course to the farmers. They have left progress in the use of their product to chance. It is true that the early anthracite companies urged and assisted the consumer, or possible consumer, to make use of anthracite. In the early days the Delaware & Hudson Co. was quite active in inducing steamboat owners, householders and industries to use that fuel instead of wood. The anthracite companies are fostering the use of fine coal, but they have invented few or none of these devices. Eckley Coxe, it is true, made important efforts to put the automatic stoker in the steam field, but on the whole, coal men have left to the manufacturers the work of devising new stokers and ascertaining the best method of employing them.

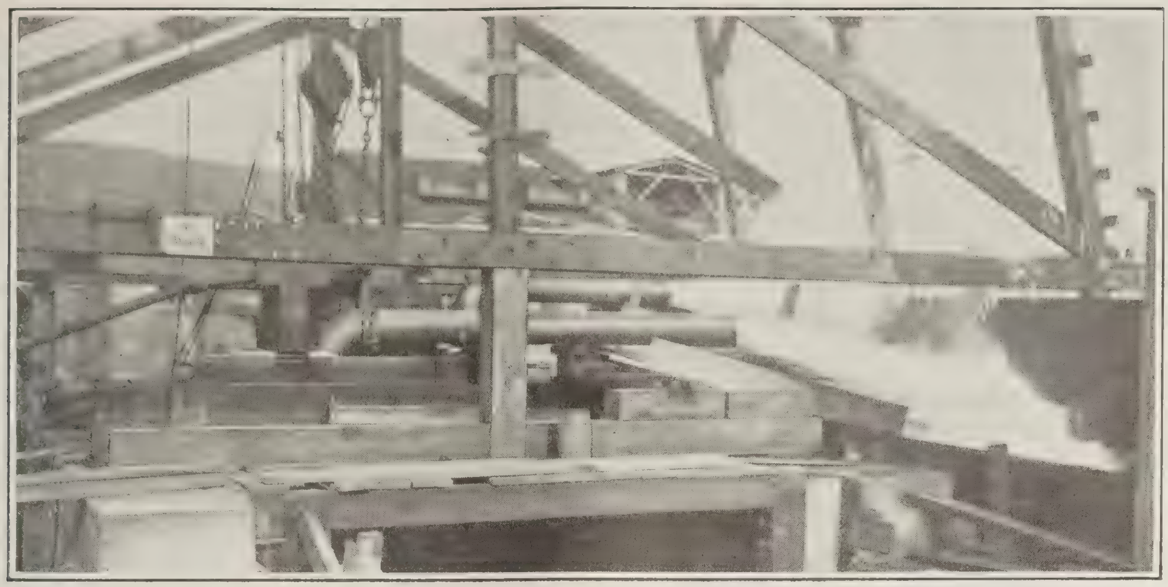
By and large, the coal men have done little. They wanted the consumer to provide his own expansion of the coal industry, and the development that made the small sizes saleable slowly came about, thanks to the consuming public, not to the operator.

In Great Britain the mine owners are contributing to research. They are trying to expand their narrowing market. As the British and Continental industries are more wasteful of fuel than ours, they have to face a greater restriction in the sale of coal than we have. Our operators probably already have encountered the worst of their troubles, but in Europe the long period that has passed without much advance in combustion methods will make conditions desperate when once the tide sets full for economy with our progress serving the economizers as a guide. In the United States almost the only studies being made are those of the National Coal Association and the Bureau of Mines. It is only a beginning but it is suggestive of a brighter future. It looks forward to the time when petroleum will be driven not only from the steam field but also from the internal combustion and lubricating fields. This is only a small part of the progress necessary. Coal should have a leading place in our organic chemistry field and that industry should be immensely more important than it is now.

The electrical industry is taking time by the forelock with its Society of Electrical Development which is finding further uses for electricity. Fortunately the problems of the public utility companies are small compared with ours, for theirs is largely an attempt to hurry the inevitable change in the habits of mankind, whereas the coal industry is seeking to find new devices for the conversion of one chemical substance into another. Probably the coal industry would do well to try also the method of that electrical society, inducing the public to use more heat, to refrigerate their houses, offices and public buildings, to cease burning wood and to use small, instead of large, coal, paying a better price for the small sizes. The Copper and Brass Research Association and the American Zinc Institute are promoting the use of copper and of zinc respectively. The brick manufacturers are associated in an endeavor to popularize brick. Coal men have a lot of good exemplars to follow and they should get in touch with them and learn their ways and, where possible, co-operate with them, especially the Society of Electrical Development, in the promotion of the refrigeration plan.

The natural means for doing this work as far as the bituminous field is concerned is the National Coal Association. It can be the bituminous coal men's Coal Research Institute and its Society of Coal Development.

Why wait for others? Let us find a place for our coal and instead of the present ruinous competition we can find employment for all. But let us be practical, tackling the easiest roads to increased demand most energetically and leaving the larger and less obvious problems for secondary consideration.



# Air-Lift Pumping System Quickly Raises Water From Flooded Anthracite Mine Areas

## Ordinary Dewatering Methods Could Not Easily Be Used at First — Now Air Lifts Water Part Way Up Shaft and Centrifugal Units Pump to Surface

By E. J. Gealy
Associate Editor, *Coal Age*,
New York City

UNUSUAL METHODS are being employed to reopen the Neilson mine of the Shamokin Coal Co. in the city of Shamokin, Pa. For many years the property had been idle and the water had risen in the shaft to within about 30 ft. of the ground level. All of those parts of the coal beds which had been previously mined were, therefore, full of water and it was necessary to start any unwatering operations from the outside.

The officials of the company decided that the best way to start unwatering the mine was by means of an air-lift pumping system. Probably the fact that the mine will need air-compressing equipment when it gets into operation had much to do with selecting this method of raising the water. Nevertheless, something different from ordinary mine-pumping machinery had to be used so as to obviate the necessity and expense of providing preliminary structures for pumps and buckets.

On Nov. 9, 1924, one air lift was started. It consisted of a 190-ft. column line of 10-in. wrought iron pipe supported in the old mine shaft. This length of pipe was considered sufficiently long to obtain satisfactory submergence, although the shaft was 1,200 ft. deep and the vertical depth of the water was greater than this because of the basins in the steeply pitching beds.

The air supply for the lift was furnished by a compressor located in a large building a few feet from the shaft. In December another similar air lift was installed in the shaft and the two lifts were kept in operation as much of the time as possible. The air lifts were stopped only when it became necessary to add extra lengths of pipes to maintain sufficient submergence to obtain satisfactory results.

In the air-compressor house two large compressors driven by 2,300-volt synchronous motors supplied the air. One compressor was a 1,500-cu.ft. per minute unit driven by a 300-hp. motor and the other a 3,500-cu.ft. per minute machine connected to a 600-hp. motor. Both machines were directly connected to their respective drives.

The cooling water for the compressors was circulated to a tank located on a hillside a short distance from the compressor house where it was cooled by being discharged upon a screen mounted a few feet above the top of the tank. The water dropped through the perforations in the screen and separated into fine streams which permitted the particles to cool and then drop into the tank and be conducted back to the water jackets on the compressors.

Passing from the compressors, the air was conducted through an 8-in. wrought iron pipe. Near the top of the shaft this pipe was connected to two 4-in. pipes which supplied the air to each lift. Suitable control valves were placed in the air lines so that the quantity of air could be regulated or stopped whenever it was necessary.

Several novel features were incorporated in the design and operation of the lifts by B. C. Osler, superintendent of the mine. The foot piece was constructed

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The view in the headpiece shows the two air lifts in operation. At first the water was within 30 ft. of the ground level. By means of these lifts the water was lowered to a point 505 ft. below the surface of the ground. Now air lifts raise the water to the No. 12 level and it is relayed to the surface by two 1,000-gal. per minute centrifugal pumps.

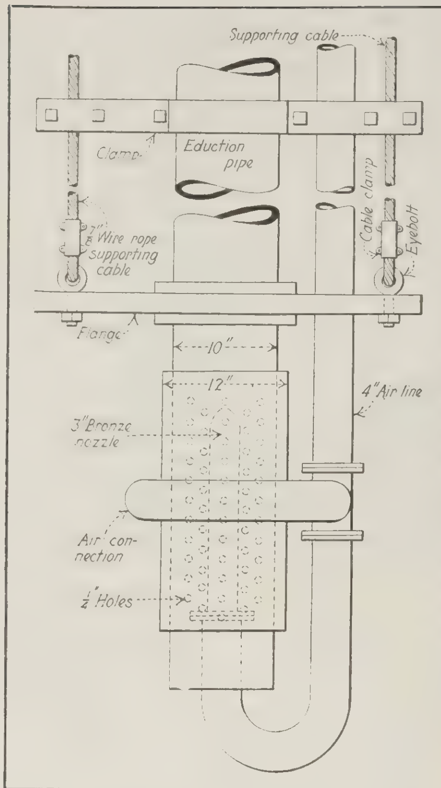

FIG. 1

**Foot Piece and Fastenings**

The air was broken up into small streams by entering the eduction pipe through ½-in. holes. Both a jacket and a nozzle assisted in introducing the air into the pipe. All the weight was taken on wire cables attached to a flange fastened to the junction between the last whole section of pipe and the foot piece.

out of a straight 5-ft. section of 10-in. pipe drilled full of ½-in. holes except near each end, as shown in Fig. 1. Around the perforated part of the pipe a short section of 12-in. pipe was welded in such a manner as to form a jacket or chamber. At diametrically opposite points in this outer pipe connections were made to the air line. An additional part of the foot piece was a 3-in. bronze nozzle also connected to the 4-in. air line. Thus the construction of the foot piece was such that a large volume of air broken up into many fine streams had easy access into the eduction pipe.

The ideal design of an air lift eduction pipe or discharge line is one which properly tapers throughout its whole length in proportion to the expansion of the air bubbles as they rise in the pipe. Such a tube is hardly practical because the length and taper of the pipe would be different for every different air lift. However, to approach such a characteristic the air lift discharge lines at the Neilson mine were made of three different size pipes. When the air lifts were stopped from pumping directly to the outside surface they consisted of a lower section of 10-in. pipe 200 ft. long to which was attached another 200-ft. section of 11-in. pipe and at the top was still another section of 12-in. pipe about 240 ft. long.

The ultimate total weight of one of these eduction pipes was nearly 20 tons and, consequently, required strong supports. In addition to suspending the air and discharge pipes, arrangements had to be such that extra pieces of pipe could be added and the whole column line lowered as the water level receded.

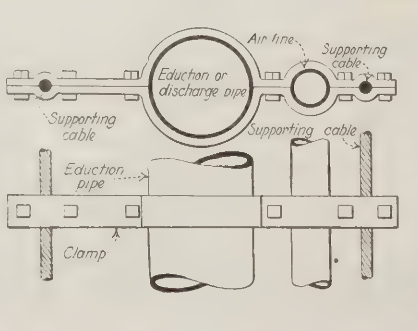

FIG. 2

**Pipe and Rope Clamp**

To keep the eduction and air pipes properly aligned, clamps were placed at various points along the line. In this manner the total weight of the pipes was suspended on the cables.

One of the most essential features effecting the successful operation of an air lift is the submergence of the eduction pipe. Obviously, as the level of the water in the Neilson shaft became lower the pipes had to be dropped so as to maintain sufficient submergence. To accomplish such adjustments as efficiently and quickly as possible, all extra sections of pipe were added to the top and the whole eduction pipe was suspended on ⅞-in. steel hoisting cables.

At the junction of the foot piece and bottom section of pipe a large round collar or flange was inserted. Sufficiently spaced from the outer edge of this ring two eye-bolts were attached as shown in Fig. 1. To these bolts the ⅞-in. supporting ropes were attached. At various positions along the discharge pipe, clamps similar to those shown in Fig. 2 were used to hold the pipe to the ropes and also tie the 4-in. air line to the large pipe.

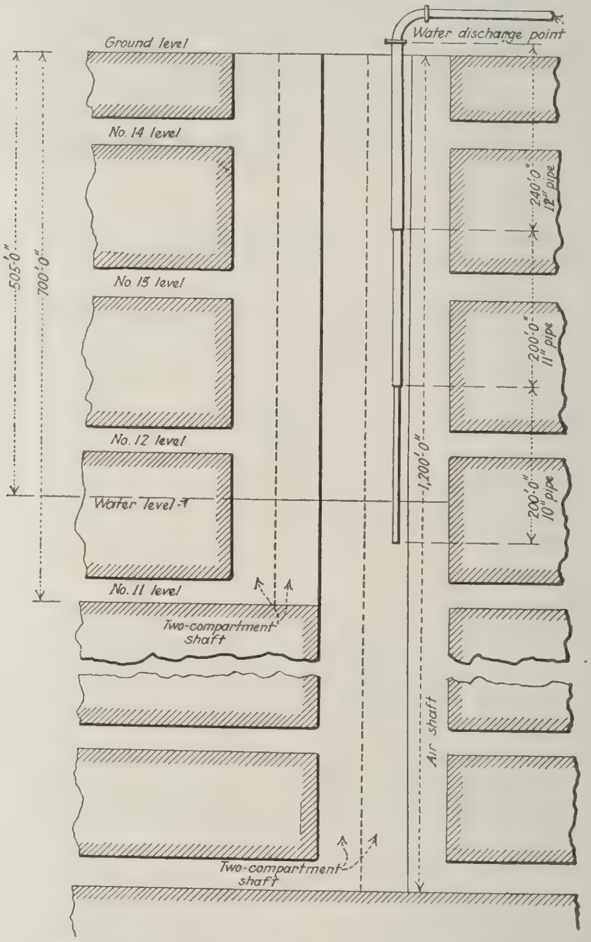

**Fig. 3—Sketch Showing Air Lift and Shaft**

Two compartments extend to the No. 11 level and two to the bottom level. The air lift was first used to discharge the water to the ground level as shown here. Now pumps are located on the No. 12 level and the air lift has been moved down the shaft so that it discharges into a basin in the No. 12 level from which it is relayed to the surface by two 1,000-gal. per minute, centrifugal pumps.

The support at the top of the shaft was as shown in Figs. 4 and 5. Two rope clamps 10 in. long were attached to each rope and the weight of the pipes was supported on a yoke or cross member which in turn rested on heavy beams. Each rope extended over the headframe onto a reel from which it was unrolled as required.

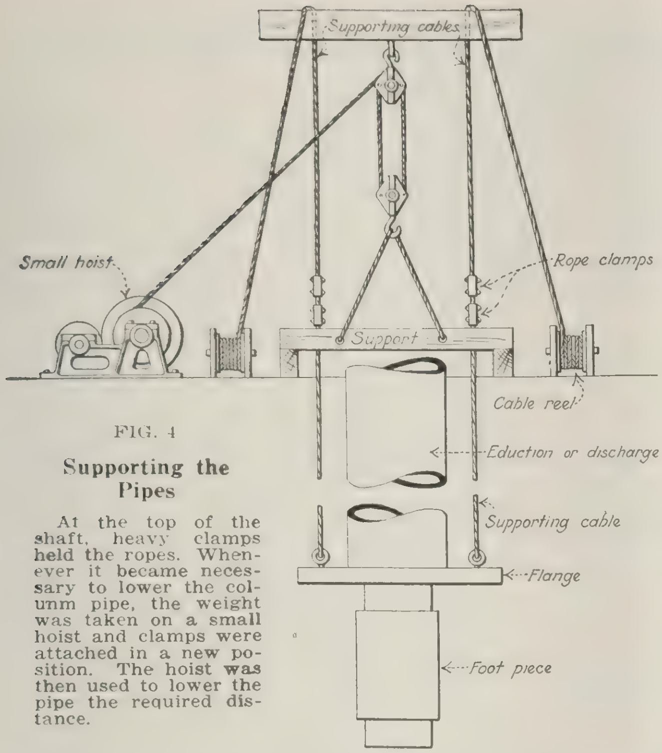

FIG. 4

**Supporting the Pipes**

At the top of the shaft, heavy clamps held the ropes. Whenever it became necessary to lower the colunm pipe, the weight was taken on a small hoist and clamps were attached in a new position. The hoist was then used to lower the pipe the required distance.

When it became necessary to attach additional sections of pipe and lower the column line, other clamps were placed on the ropes farther up near the top. When this was done the weight of the pipe was placed upon large pulley blocks which operated through a cable connected to a small hoisting engine. In this manner the pipes were lowered until their weight again rested on the new clamps. See Fig. 4.

During the period between Nov. 9, 1924, and Feb. 19, 1925, one or the other or both of the air lifts were in almost continuous operation. As a matter of fact, only about 65 hr. of operating time was lost in making the various changes to the lifts.

On Feb. 19, when the lifts were stopped from pumping to the outside surface, the eduction pipes were 640 ft. long and the water had been lowered about 475 ft. This indicates that the water level dropped at the rate of about 4½ ft. every 24 hr. It has also been estimated that during part of the time 5,000 gal. per minute was pumped and a total of about 335,000,000 gal. was raised to the surface.

The discharge from the air lifts varied, as would be expected, depending upon the amount of submergence and depth from which the water had to be raised. Best results were obtained when the submergence was about 200 ft. and the lift about 100 ft. Averaged over the whole range of operation the cost of raising the water was slightly over 6.5c. per 1,000 gal.

Although the total depth of the shaft at this mine is about 1,200 ft., the mine workings extend about 200 ft. lower. Obviously, the work of unwatering the mine was not complete when, on Feb. 19, the air lifts were stopped from pumping to the surface.

Fig. 3 shows the arrangement of the shaft. Two compartments go down to the No. 11 level which is about 700 ft. from the surface at this point. The two other hoisting compartments extend to a point 1,200 ft. from the surface. An airway also goes to the bottom level. In all, probably sixteen coal beds are cut by the whole shaft.

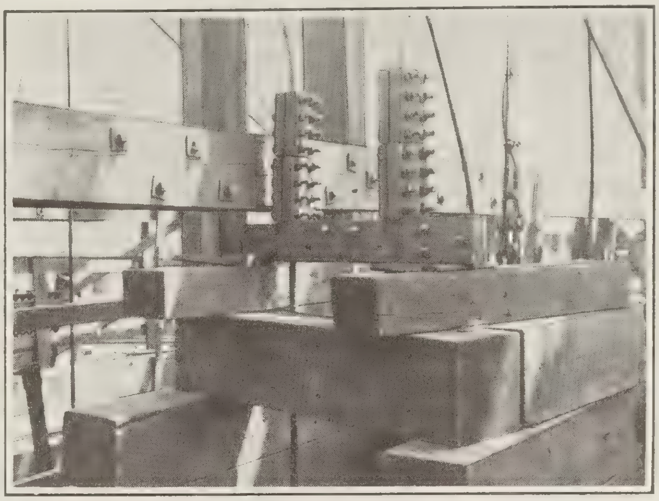

**Fig. 5—Rope Clamps Prevent Cables from Slipping**

Two large clamps were fastened to each wire and the weight of the pipes supported on cribbing which spanned the mine shaft.

The dewatering of the mine having reached the point attained on Feb. 19, air-lift pumping to the surface was discontinued so as to finish the job as efficiently as possible. Since then two 1,000-gal. per minute pumps have been set up in the No. 12 level and the air lift discharges to these units which in turn relay the water to the surface. In time, two more centrifugal pumps will be located in the No. 11 level and the water relayed

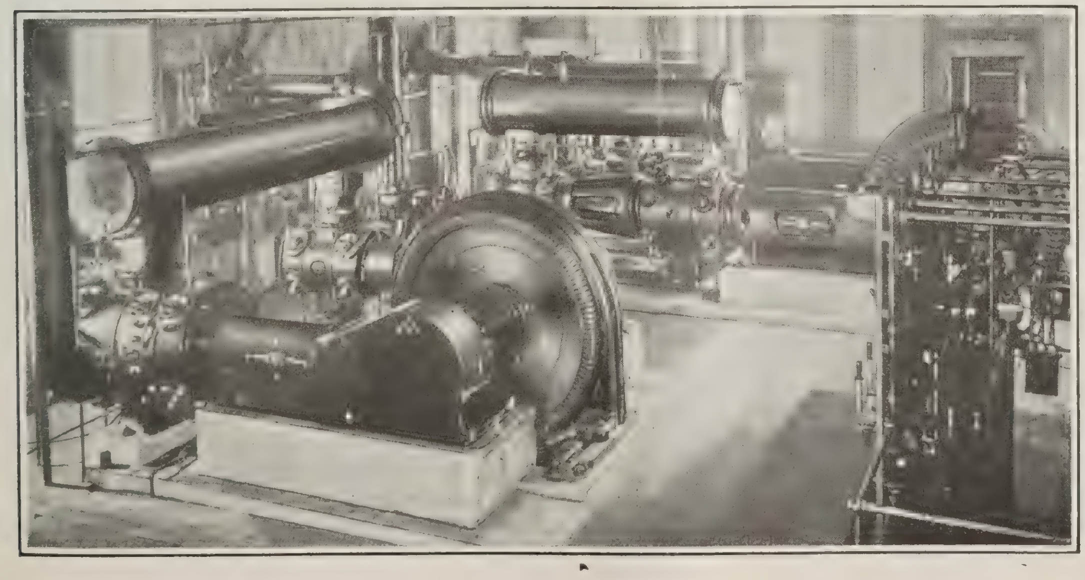

FIG. 6

**Compressors for Air Lifts**

Both of these units worked together to supply air to the two air lifts. An 8-in. pipe conveyed the air to the shaft and from there it was dropped into the shaft through two 4-in. air pipes. Each air line was attached to the outside of the discharge pipe.

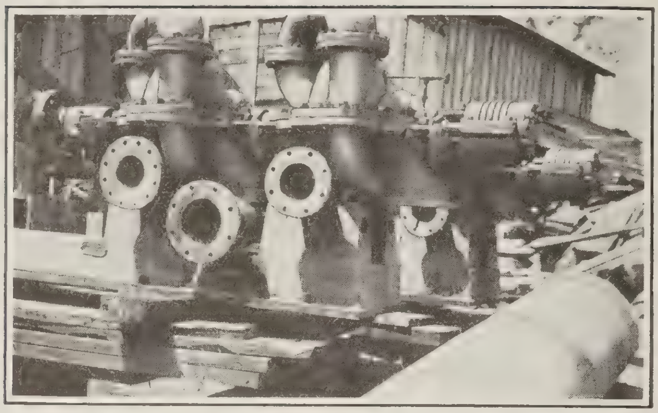

**Fig. 7—Units for Permanent Mine Service**

These are two of the centrifugal pumps which will be permanently located inside the mine to take care of the regular inflow after the coal beds are unwatered.

to them by the air lift. In this manner it is intended to carry the unwatering plan until the air-lift system will be impractical for further use here.

The success of the Shamokin Coal Co. with the air-lift method of raising water recalls to memory three other important applications of the system in the anthracite region. These were made by the Glen Alden Coal Co. at Hampton Water Shaft, the Hudson Coal Co. near Carbondale, Pa., and the Madeira, Hill & Co.

# Natal Mines Four Million Tons Of Coal Yearly

### Seams Are Thin and in Most Cases Split —Volatile Matter Varies Widely but Is Always Low—Dolerite Sheets and Dykes

Coal was discovered in Natal in the year 1838, but beyond this bare statement no further information is obtainable. "On Aug. 20, 1842," says W. J. Wybergh in his small monograph on "The Inland Coalfields of Natal," Vol. II of "The Coal Resources of the Union of South Africa," published by Geological Survey of that commonwealth, "Captain Smith, writing from Pietermaritzburg to Sir George Napier, stated that there was no doubt that coal existed in considerable quantities about 130 miles from the coast and advocated the formation of a company to work it." In 1888 a number of mines were opened, of which the Newcastle Colliery, Elandslaagte Colliery and Dundee Coal Co. mine still exist.

During the first year the coal was transported by bullock wagon, but before the year was over a branch was constructed by the company from Glencoe to Dundee, since taken over by the Government and made part of the Glencoe-Vryheid-Piet Relief Ry. In that year the bunker trade was successfully inaugurated on a commercial scale, a total of 686 tons being taken by six steamers. The total tonnage, coal and rock mined in 1923 was 5,618,404, of which 1,124,947 short tons was classified as waste. The total coal sold was 4,302,892 short tons for which $8,251,390 was received, or $1.92 per ton.

There are three main fields—the Klip River, the Vryheid and the Utrecht. In the Klip River are only two seams of commercial value the "Top" and the "Bottom." In only a few collieries can both seams be worked over the whole area, though in most cases at least a portion of both have been considered workable under existing economic conditions. The coal is quite usually gaseous, even in some cases where it is covered by only 70 ft. of cover.

Some have ascribed this to the action of igneous sheets which are from 25 to 380 ft. thick and are found from 60 to 398 ft. above the coal. Some declare that these sheets prevent the gas from escaping, but the author quotes Mr. Steart to the effect that the sandstones and shales are more impervious than the dolerite sheets. The effect of the dolerite on the percentage of volatiles in the coal does not seem to accord with any rule, certainly not with the rule that the effect will be found to vary with the thickness of the sheet ($T$) and inversely as the thickness of intervening measures ($D$). In one place $D \div T = 1.8$, that is, the protecting measure is thicker than the molten sheet. Here the percentage of volatile matter is 8.48 and the coal is practically an anthracite. In another place the $D \div T = 0.7$, that is the protecting measure is thinner than the molten sheet, yet the percentage of volatile matter is 20.77. The thickness of the sheet is 310 ft. and the thickness of the intervening strata only 206 ft. Nevertheless, the coal is distinctly semi-bituminous and not anthracite.

As the author states "It is more than likely that not merely the ratio $D \div T$ but the absolute distance from the coal irrespective of thickness" must be considered.

"Of course," says Mr. Wybergh, "where the percentage of volatiles is unexpectedly low, this may, in some cases, be due to the proximity of a vertical or highly inclined dyke not disclosed by the borehole, or conceivably, but improbably, to the existence of another sheet below the coal." At the New Campbell colliery a dyke over 1,200 ft. thick was struck about 100 ft. from the shaft, at which point the coal contained 4 per cent of volatile matter. At a distance of 1,200 ft. from the dyke it had 15 per cent of volatile matter and at 1,400 ft. it had 19 per cent, and the coal showed indications of coking.

### Splits Reduce Value of Seams

The coal is extensively faulted and the parting between the Top and Bottom coals varies from a few inches to 40 or 50 ft., and even in a single colliery from one foot to 50 ft. The thicknesses of these splits vary from less than 2 ft. to 10 ft. or more but in the greater part of the area are between 3 ft. and 5 ft. thick. The ash percentage in the coal as used at Capetown varies from 9.89 to 15.60.

In the Vryheid district are four commercial seams, the Alfred, Gus, Dundas and Coking seams and others of lesser importance. The Gus seam is usually unsplit and runs from 4 ft. to 6 ft. 8 in. The Coking seam is thin and runs from 1 ft. 2 in. to 2 ft. 6 in. The Alfred and Dundas seams frequently split, but in one place the latter contains two layers 4 ft. 7 in. and 4 ft. 3 in. respectively, with a shale parting. The sulphur in these seams is quite low, 0.50 to 1.20 per cent. The ash runs from 7.44 to 15.95 per cent and the volatile matter from 10.22 to 26.06 per cent. Here, also, are igneous sheets, dykes and faults.

The Utrecht coal field has no railroad, but it contains some of the best coal in Natal. The same seams are found as in the Vryheid district. Thus at the Utrecht colliery the Alfred seam is 6 ft. 1 in. thick, the Gus seam 5 ft. and the Dundas seam 2 ft. At Dumbe Mountain these seams are 6 ft., 3 ft. 6 in. and 6 ft. 5 in. respectively, with the Coking seam 3 ft.

# Alternators Supplying Mine Loads Are Easily and Safely Paralleled and Operated

## Fluctuating Loads Make Special Precautions Necessary—Synchroscopes Can Be Made from Lamps and Voltmeters—Diagrams Explain Bad Effects of Poor Power Factors

By **J. A. Erskine**
Pittsburgh Terminal Coal Co.,
Pittsburgh, Pa.

THE INCREASED use of electricity in the working of mines necessitates in many cases a power plant comparable in size with that for supplying light and power for a fairly large sized town. The colliery electrician has, therefore, to take charge of a plant where alternators frequently are required to run in parallel and connected to a load which is certainly not helpful to good parallel operation. The aim of this article is to show how this difficulty can be overcome.

The work of paralleling alternating-current machines is a more difficult operation than is the case with continuous-current generators. With direct-current generators the only important point is that the voltage of the incoming machine should be the same as the busbar voltage.

With alternating-current machines not only must the voltage be the same but the periodicity also. Further than this, the machines must be in phase; that is to say, it is not sufficient for the periodicity of the machines to be exactly the same, but the voltage of the machines must rise and fall at the same instant.

The process of bringing machines into phase is called synchronizing. "Synchronous" means that the pressures and currents rise and fall exactly at the same time. Two alternators to be connected in parallel, must both be of the same pressure and current at the same instant; each must be at the positive maximum of pressure and current at the same instant; each must be at zero pressure and current at the same instant. At any instant the pressure furnished by each machine must be exactly the same.

When connecting three-phase machines in parallel, like phases must be connected together; that is to say, referring to Fig. 1, phase *1* of the two machines to be paralleled must be connected together; phase *2* of the two machines connected together, and so also with phase *3*. If phase *2* of one machine is connected to phase *3* of the other machine, and, say, phase *3* of the first machine to phase *2* of the second machine, the machines will not parallel, and large currents will pass between them.

Fig. 1 shows diagrammatically the three phases of two machines that are to be paralleled, and how the connections should be made. It will be noticed that phase *1* of the left-hand machine is connected to phase *1* of the right-hand machine, phase *2* of the left to phase *2* of the right-hand machine, and phase *3* to phase *3*. Fig. 2 shows diagrammatically the same two machines, but with their phases connected incorrectly. From this diagram it will be seen that while phase *1* of the left-hand machine is connected as before to phase *1* of the right-hand machine, phase *3* of the left-hand machine is connected to phase *2* of the right-hand machine; and phase *2* of the left-hand to phase *3* of the right-hand.

The difference in the arrangement of the phases between the right-hand machine and the left-hand one will be recognized as that which is used to reverse the direction of rotation of an induction motor. And this provides the test for ensuring that the phases are in proper sequence. Before connecting two alternators to run in parallel, if there is any doubt as to the sequence of the phases of the two machines, each of them should be tried upon an induction motor. If the motor runs in the same direction with the currents from both machines, they may be safely connected in parallel; if not, it will be necessary to alter the connections of one of the alternators, so as to bring them into the proper sequence as shown in Fig. 1.

When an alternator is to be connected in parallel with others that are running, it is first brought up to about the speed at which it will run when taking its share of the load. The exciting current of the field magnets is then brought up to the strength that will give the pressure the machine is to furnish when running in parallel. The third step is to bring the machine into exact synchronism. Synchronism is obtained by varying the speed at which the incoming alternator is running. Having the speed near that at which it is it to run, the revolutions are slightly increased or decreased, until the phases of the incoming machine are exactly in synchronism with the machine already at work.

The main object of synchronism is to prevent the

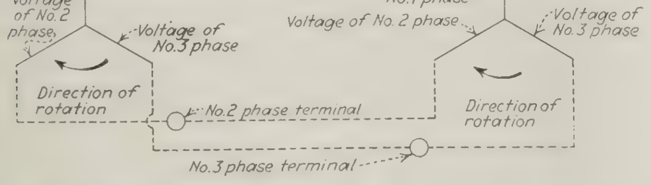

**Fig. 1—Three-Phase Machines Connected in Parallel**

It is important that each phase be properly arranged so that the circulating current will be low.

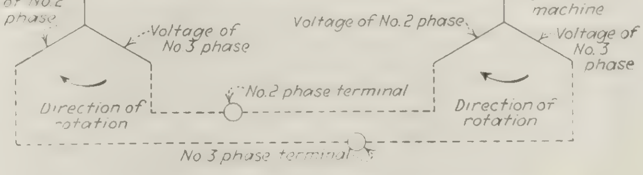

**Fig. 2—Incorrect Phase Arrangement**

The phase rotation in each circuit must be the same before the machines are switched together.

passage of useless current between two or more alternators when running. If any alternator is out of step with the others, currents will pass between the machines, the power for which has to be furnished by the prime movers. These currents operate against the successful working of the units. The operation of getting the incoming machine into exact synchronism requires a certain amount of nerve to throw in the switch at the right moment, and, of course, some form of synchronizing apparatus is required. When a lamp synchronizer is used, it is the usual custom to also have a synchronizing voltmeter. The lamp synchronizer is not so good a guide as the voltmeter, but the two together should enable the engineer in charge to know the exact moment to close the switch.

With low-tension machines, the lamp is connected between two similar phases of the two machines; or say, between a certain phase of the incoming machine and the same phase of the busbars. This arrangement is shown diagrammatically in Fig. 3, and for simplicity the connections between the other phases are omitted. When the machines are in synchronism, the pressures delivered by the phases of the two machines to which the lamp is connected are exactly equal at all parts of the cycle, and therefore no current passes through the lamp.

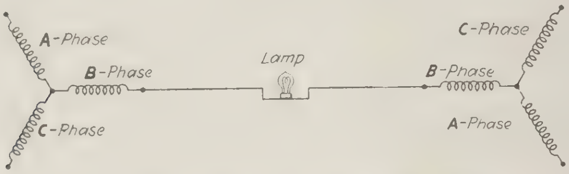

**Fig. 3—Lamp Used to Synchronize Generators**

Note that the lamp is connected into one conductor only. If the phase rotation, voltage and frequency are correct, a lamp in one line is all that is necessary to determine when to close the paralleling switch.

For high-tension machines, a modification is shown diagrammatically in Fig. 4. A transformer is wound with a primary coil for each generator; or, say, a primary for the busbars and another primary for the incoming machine. The secondary of the transformer is connected to the lamp. The primaries are so wound that they oppose each other; and when the two machines are in phase, no lines of force are created in the magnetic circuit of the transformer. Therefore, there is no secondary pressure at the terminals of the lamp, and no current flows.

In a further modification of the arrangement shown in Fig. 4, the primary coils are so wound that when the machines are in phase, sufficient pressure is induced in the secondary coil to light the lamp to which it is connected to its full brilliance.

In another arrangement connections from the different phases are made so that certain lamps light and certain others are dark when the machines are in synchronism.

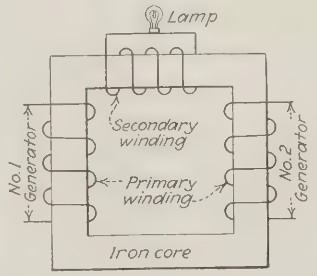

FIG. 4

**Lamp and Transformer**

When a heavier voltage than the lamp can withstand is used, a transformer reduces the line voltage. Care must be taken to connect the transformer and lamp, otherwise incorrect results will be obtained.

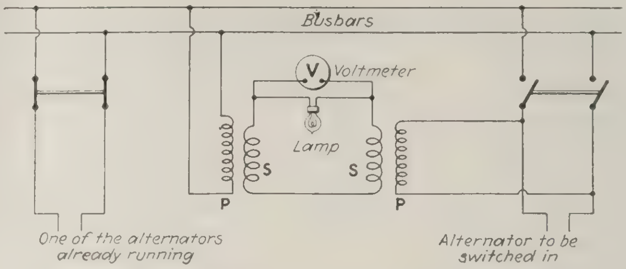
Busbars
V
Voltmeter
Lamp
S
S
P
P
One of the alternators already running
Alternator to be switched in

**Fig. 5—Voltmeter Aids Work of Synchronizing**

The light of a lamp varies and, therefore, it is sometimes quite difficult to tell when it is at its maximum brilliance; a voltmeter is often used with a lamp to overcome this difficulty.

With the lamp and voltmeter synchronizer shown in Fig. 5, the method of synchronizing is as follows: The primaries *pp* of the two step-down transformers are connected, one to the two busbars, and the other to the machine to be synchronized; while the secondaries *ss* are joined in series and connected to an incandescent lamp and a voltmeter, as shown in Fig. 5. The lamp should be a carbon-filament one, so as to be very susceptible to changes in the current through it. It also must be suitable for the full voltage of $s + s$.

The windings of the transformers are so connected that when the voltages in the secondaries are in step, they work together; but if out of step, they oppose each other more or less. If the frequency of the alternator to be switched in is not correct, the lamp lights up and goes out at rapid intervals. The speed of the machine must then be adjusted until the light of the lamp rises and falls only a few times a minute. This shows that the speed and, therefore, the frequency also are correct. The machine is then switched in at the moment the lamp is fully lighted and the voltmeter reading is at its maximum. This indicates that the machine is in synchronism with the others. Before closing the switch, the alternator voltage must, of course, be adjusted to correspond with that of the busbars.

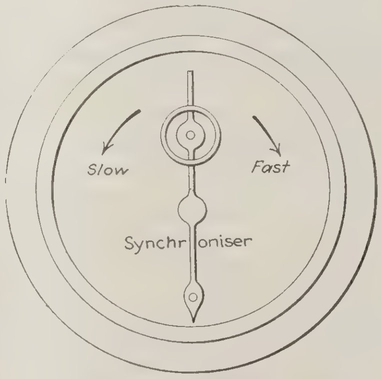

FIG. 6

**Rotary Synchroscope**

This instrument indicates whether the machine to be put on the line is running too fast or too slow.

A more recently developed arrangement than that shown indicates not only synchronism but also whether the incoming alternator is running too fast or too slow, or if it is simply out of phase.

This type, an example of which is given in Fig. 6, is termed a rotary synchronizer. It has a rotating pointer which moves in one direction or the other while the incoming machine is out of synchronism. If the pointer rotates clockwise, the incoming machine is too fast; if counter clockwise, the machine is too slow.

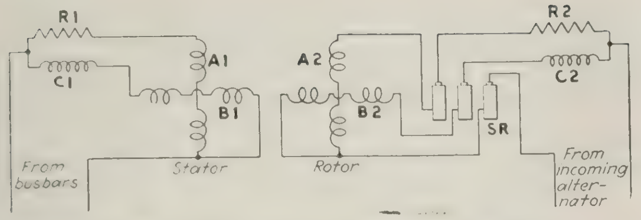

**Fig. 7—How the Synchroscope Works**

The device contains a simple slip-ring motor which runs at a speed and direction depending upon the frequency of the current supplied to its stator and rotor.

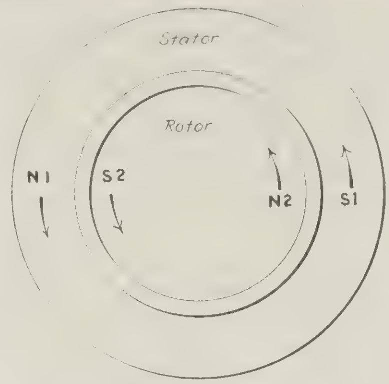

FIG. 8

**Fields Establish Speed**

The rotor circuit drives the indicator needle by the force tending to hold the magnetic fields together.

The principle of this instrument is shown in Figs. 7 and 8. The essential part of the apparatus consists of a miniature slip-ring motor. The stator and rotor are both wound for two phases, and in series with these are connected non-inductive resistances *R1 R2* (in the form of incandescent lamps) and choking coils *C1 C2;* The connections to the rotor being made by means of three slip-rings marked *SR.*

In Fig. 7, the windings *A1* and *B1* produce a rotating field, the speed of which depends upon the frequency of the busbar supply; and windings, *A2* and *B2* also set up a rotating field, whose speed corresponds to the frequency of the incoming alternator.

The device is arranged so that these two fields, indicated by *N1 S1* and *N2 S2* respectively in Fig. 8, shall rotate in the same direction; and it will be evident that owing to magnetic attraction between *N1 S2* and *N2 S1*, the rotor field *N2 S2* will always try to follow the stator field.

If the two fields are rotating at the same speed, that is, if the frequency of the incoming machines is the same as that of the busbars, the rotor will remain stationary. But suppose the two frequencies are not the same, and that *N1 S1* is rotating at, say, 1,500 r.p.m., and *N2 S2* at 1,400 r.p.m., when the rotor is at a standstill; then, in order that *N2 S2* may still keep pace with *N1 S1*, the rotor must turn in the same direction, namely, counter clockwise in Fig. 8, at the rate of 100 r.p.m. The pointer which is attached to the rotor would thus travel around the dial in Fig. 6, at 100 r.p.m. in the direction marked "Slow." On the other hand, suppose *N2 S2* is rotating at 1,600 r.p.m. when the rotor is held stationary due to the incoming alternator running at too high a frequency; then for *N2 S2* still to keep in step with *N1 S1*, the rotor will turn backward, or clockwise, at a speed of 100 r.p.m. This would be indicated on the dial by the pointer indicating "Fast."

Now, in addition to equality of frequency, the voltage of the incoming alternator must also be in phase with

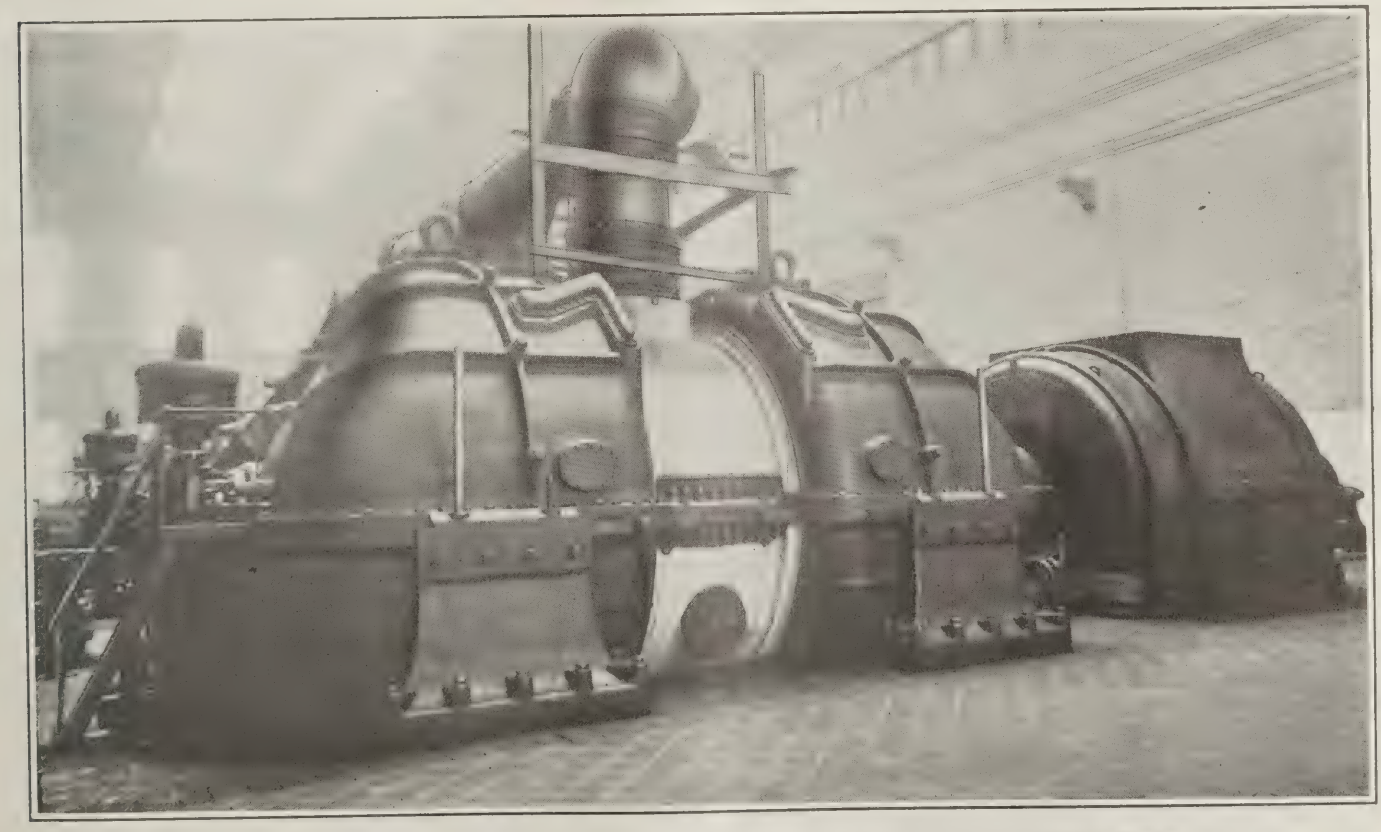

**Fig. 9—High Fuel Economies and Reliability Have Reduced Power Generating Costs**

Only by using modern type generating units can a power house supply electrical energy at an economic rate today. Recent advances in the design and construction of large turbo-generator units such as this have made them so highly efficient that the savings which they make over old types justify the expense of replacing the old units that of the busbars. This is indicated by the synchroscope pointer being vertical. If it is in any other position, the voltages are out of phase, the deflection of the pointer from the vertical being an indication of the phase difference.

As regards the actual process of synchronizing, the speed of the alternator is adjusted until the pointer of the synchroscope is rotating very slowly, say at about 2 or 3 r.p.m.

Then, after adjusting the voltage of the alternator to that of the busbars the alternator switch is closed just as the pointer is coming to the vertical position.

For high-voltage circuits, the synchroscope is used in conjunction with a small step-down transformer, the secondary voltage of which is usually arranged for about 100 volts. The transformer used for this purpose is referred to as a potential transformer.

In collieries there is usually a large number of induction motors, and the power factor is low. Where the power factor is less than unity the current lags behind the pressure, and the exciting current has to be larger than with unity power factor. The lagging current tends to weaken the field, and an increase of the exciting current, therefore, is necessary to make up for this weakening.

Following this idea it will be found that if any particular alternator is overexcited, it will furnish a lagging current. In this matter its action is the reverse of that of a synchronous motor, which is, of course, an alternator run as a motor. When a synchronous motor is overexcited, it furnishes a leading current to the service, and on this occasion such a motor is often employed for the purpose of raising the power factor of a particular service.

When two or more alternators are running in parallel, if one of them is overexcited it commences to furnish a lagging current, and as a consequence, the others tend to furnish a leading current. Induction motors have comparatively low power factors, and, therefore, demand lagging currents, which the alternators have to supply.

If one alternator has a higher excitation than the others, it tends to supply more of the lagging current, and the other machines tend to work at nearer unity power factor, or, in other words, tend to furnish a smaller lagging current, or a leading current. On the other hand, an alternator, if under excited, gives a leading current, which is again the opposite to the action of a synchronous motor.

The question of the action of its excitation upon each particular alternator must not be confused with the action of the speed. It is the speed which practically determines the amount of load which each alternator takes to itself. Any increase of speed of an individual alternator causes it to take up more of the load and the other machines to drop a portion of it. But it is the variation of the exciting current of each alternator which causes the variation in the power factor of each alternator.

When the current is constantly changing in a circuit forming part of an electro-magnetic system, as in an alternating-current generator or motor, a voltage is induced in the circuit, which opposes the change of current. This pressure depends upon the rate of the change of current, its maximum value occurring when the current is passing through its zero value, that is where the maximum rate of change takes place. The minimum value occurs when the current is at its maximum, or when the rate of change is least. This induced voltage, therefore, is in quadrature with the current.

Fig. 11 shows diagrammatically three poles of an alternator, with one coil of the armature passing in front of the north pole. With the coil in the position shown, and the power factor unity, the volts and am-

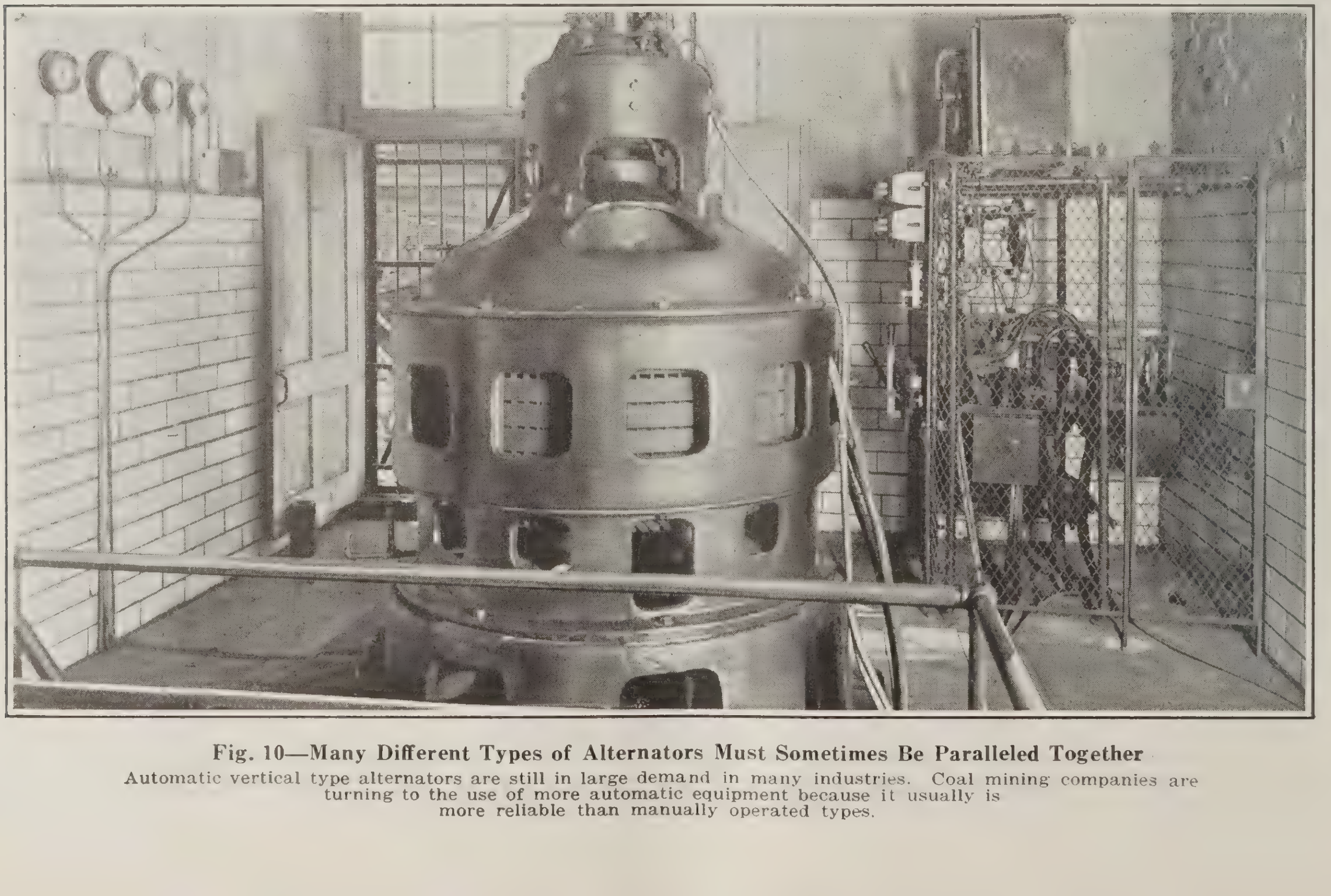

**Fig. 10—Many Different Types of Alternators Must Sometimes Be Paralleled Together**

Automatic vertical type alternators are still in large demand in many industries. Coal mining companies are turning to the use of more automatic equipment because it usually is more reliable than manually operated types.

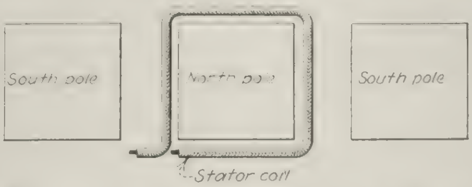

**Fig. 11—Unity Power Factor Load Requires a Normal Field**

With a unity power factor load, an alternator coil in this position exerts no dampening effect on the field pole, but when the current lags the voltage, the current in the stator coil when it reaches this position demagnetizes part of the field.

peres are passing together through their zero values; but should the generator be working on an inductive load, the current tends to lag behind the voltage. As the coil approaches the position shown in Fig. 11, it will still have a current flowing in it which was induced by the last south pole. The direction of this current will be such that its magnetic effect will be in opposition to that of the north pole; consequently, the actual magnetic effect produced by the north pole will be the resultant of these two magnetic influences. It must be less than when the north pole is not opposed by an armature coil carrying a current. This partly explains why an inductive load weakens the field of the generator, and necessitates a larger exciting current to maintain a voltage constant.

Machines which have the same armature reaction run better in parallel than those differing in that respect, because the latter require constant alteration of their exciting currents. When two alternators which have not the same armature reaction are run in parallel, if their exciting currents do not receive constant attention, the effect upon the machine is similar to that which would be produced by improperly varying the excitation. The armature reaction will vary with every change in the inductive load, because the power factor of the circuit—and, therefore, the strength of the lagging current—will be changing.

The protection of alternators while they are running in parallel, and while being synchronized, is an important detail and deserves some consideration. In colliery work, continuity of supply of power is the most important matter to be considered. It is, therefore, essential that, in case of poor synchronizing, both generators shall not be disconnected from the circuit. This is guarded against by fitting reverse current relays on each generator.

These reverse current relays protect either machine from being motored. The relays are set to operate on a small percentage of the full-load current of each machine. They are made on the same principle as an ordinary wattmeter. In case of a reversal of current, the instrument also reverses, and closes a load circuit in which the machine circuit-breaker is included. It is also essential that time-limit relays should be fixed for each generator. The time limit should depend upon the load. Should an incoming machine be running too fast when switched in, and it snatches all the load, a time limit gives the machines a chance to right themselves before they are cut out.

In the working of a colliery power station, synchronizing is often difficult, owing to the inability of the loaded generators to run absolutely steady; this, again, being due to the fact that the prime movers are unable to follow the variations of the load without a small time lag. The variations in the speed of the engine are always a little behind the power demand.

I find it better to have the needle of the synchroscope, where such an instrument is employed, a little fast before switching in, instead of the reverse method, as is sometimes advocated. One may wait a few seconds after the machines are in step, but it may happen that the very moment the switch is closed, either a load comes on, or it is removed from the machine already running, and the machines fall out of step before the switch is properly home. If the synchronizer reads a little fast, the incoming machine will probably fall very nicely into step, as there is always a certain pull upon any machine when first taking its load.

The diagrams apparently relate only to single-phase alternators, since there are only two wires from the machines. But as a matter of fact, these arrangements are also applicable to two- and three-phase alternators, as connection has only to be made to one phase in these cases. Three-phase alternators, for instance, are connected to three busbars, and the two busbar wires of the synchronizer are joined up to two of these bars. The other pair of wires from the synchronizer goes to the corresponding phase of the incoming machine.

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## Woodward Iron Co. Develops Crockard Mine to Produce 5,000 Tons

The plans of the Woodward Iron Co. for the development of the Crockard mine, announcement of which has previously been made in *Coal Age*, call for a shaft operation with an ultimate capacity of 5,000 tons per day. This mine is located fifteen miles northwest of Bessemer and about three miles from Mulga mine, one of the company's largest producers. The shaft will be 509 ft. deep, with a concrete lining, making a single compartment, equipped with double skips. The shaft measures 7 ft. 1 in. by 17 ft. 8½ in. in cross-section. A manway slope 17 ft. wide by 8 ft. high and 1,024 ft. long will be driven on an angle of 30 deg. The mine is said to tap the thickest coal in the Pratt seam and will have a tributary area of 40,000,000 tons of Pratt coal recoverable through the shaft.

The underground layout of the shaft bottom is somewhat unusual, providing for an elliptical yard with a six-entry system radiating therefrom. Coal will be extracted on the room-and-pillar system, blocked out in panels 2,600 ft. long. Coal will be recovered retreating.

Two commodious dormitories and a dining hall are now under construction, and additional buildings, including a hoist and power house, boiler house, machine shop and blacksmith shop will be provided as needed.

The mine will be served by a spur track four and a half miles long, which will connect with the company's coal railroad at Bone Gap, and over this line the output of the mine will be shipped to the company's large washery at Woodward. There it will be converted into coke at the Woodward byproduct plant and used in the company's district furnaces.

The initial dirt was shoveled from the shaft opening by Joseph and Alan Woodward, sons of Chairman A. H. Woodward, of the Woodward Iron Co., being representatives of the fourth generation of Woodwards, who have owned and operated this property continuously. The new mine is named in honor of Frank H. Crockard, president of the company and one of the most able mine executives in the district.

# New Kentucky Mine Has Some Cost-Reducing Features

### Drop-Bottom Cars and a Single Dump-House for Two Seams Help Justify Investment Made in Face of Trade Depression

New mines opened in the face of the prevailing depression usually are marked by features designed to reduce the cost of coal. The new mine of the Columbus Mining Co., at Allais, Ky., has such features. About two months ago the company, which for some time has operated four other mines in Perry County, Ky., opened No. 5-B directly across the hollow from old No. 5-A.

Each mine has openings in two seams which are separated by an interval of 60 to 70 ft. In both cases rope-and-button conveyors are used to retard the coal in its passage down the mountain side to the common tipple. At the older mine are two dump houses, one equipped with a rotary dump and the other with one of the cross-over type; while at the new mine there is but one dump house for the two seams and this is equipped exclusively for the use of drop-bottom mine cars. This may reduce coal-handling costs.

The rope-and-button conveyor and the common dump house of the new mine are shown in Fig. 1.

The conveyor is 840 ft. long and the average grade is 24 per cent. It is designed for a normal carrying capacity of 1,500 tons in 8 hr. From the illustration it might be construed that the conveyor structure is entirely of steel; but on the contrary the only steel used is that of the several towers or high bents at the bottom end near the tipple. The framing of the rest of the structure is of wood. The roof and sides are covered with galvanized iron.

The upper part of the dump house at No. 5-B is a sheet-iron house covering two through tracks, one of these, the load track, being equipped with a scale and a long pit, the bottom of which forms the conveyor feed hopper. The elevation of the dump house track is somewhat below the center point between the two coal seams, the approach grades being 2 per cent in favor of the loads from the upper seam and 1½ per cent against the loads from the lower steam. Fig. 3 shows the convergence of the two tram roads.

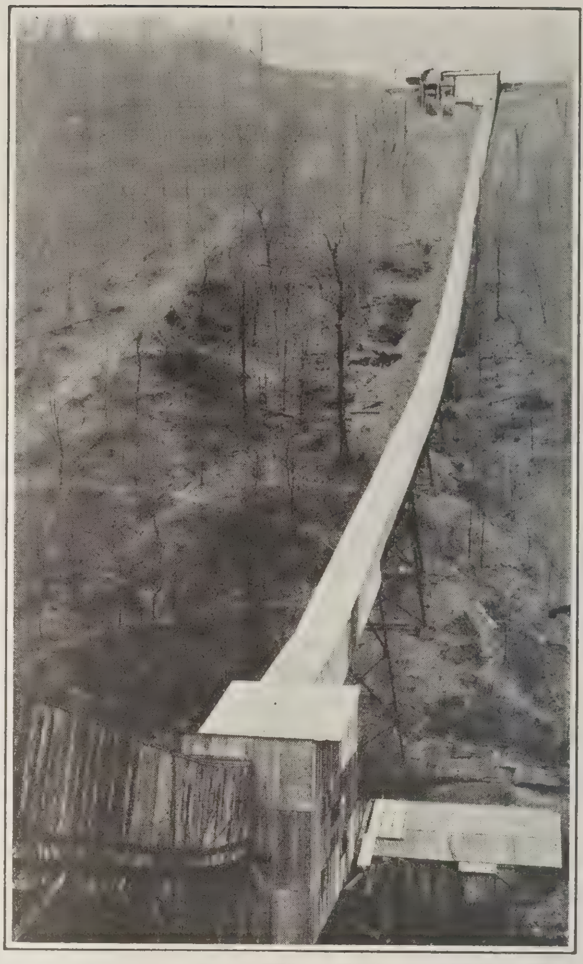


**Fig. 1—New Mine Feeds to Old Tipple**

No. 5-B started to produce about two months ago. The 840-ft. rope-and-button conveyor is designed for a normal capacity of 1,500 tons in 8 hr. Excepting the galvanized iron covering and the few steel bents at the bottom, the conveyor structure is of wood. The metal discs or buttons of the conveyor proper are 10 in. in diameter and are spaced 38 in. apart on the wire rope.

The two features of the new mine, the use of drop-bottom cars, and the one common dump house for the two seams, simplifies the installation to a marked degree. The simplicity is the more marked in this case because of the contrast afforded by the old mine directly across the hollow.

At the new mine, precautions are taken to lengthen

FIG. 2

**New Mine's Outlet**

Another view of the dump house and its approach. The trolley suspension construction is simple, neat, and of a permanent nature. The creosoted wooden railings are made up of gate-like sections of uniform dimensions set up between, and fastened to, the metal trolley posts

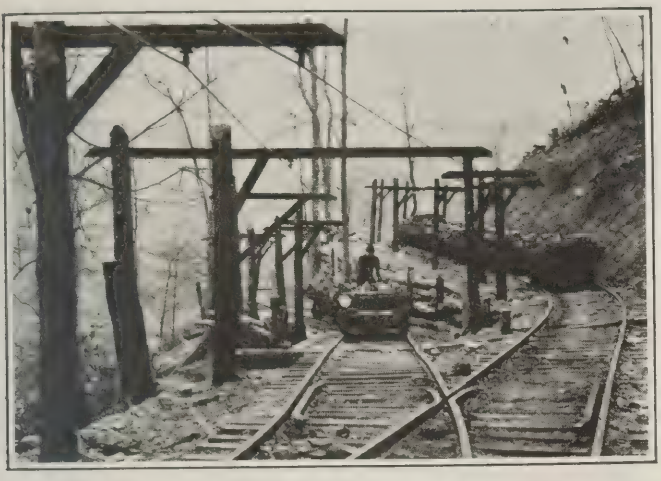


**Fig. 3—Where Coal from Two Seams Flows Together**

The tipple is at an elevation somewhat below the center point between the two seams, which are separated by an interval of 60 to 70 ft. The tracks from the two veins converge at a point about 300 ft. from the tipple. The grade from the upper seam is 2 per cent in favor of the loads and that from the lower seam 1½ per cent against the loads.

the life of the wood structures. All of the weather-exposed wood construction of the conveyor and tipple, and all wood used in the tipple approaches and tram road trolley-line supports has been given a thorough brush treatment of creosote preservative. A. F. Barbieux of Hazard, Ky., general superintendent and electrical engineer of the company's Perry County operations, estimates that the creosote coating will lengthen the life of the wood structures from three to four years. Another precaution is the setting of trolley posts in concrete, which, besides increasing the life of the posts, keeps them plumb.

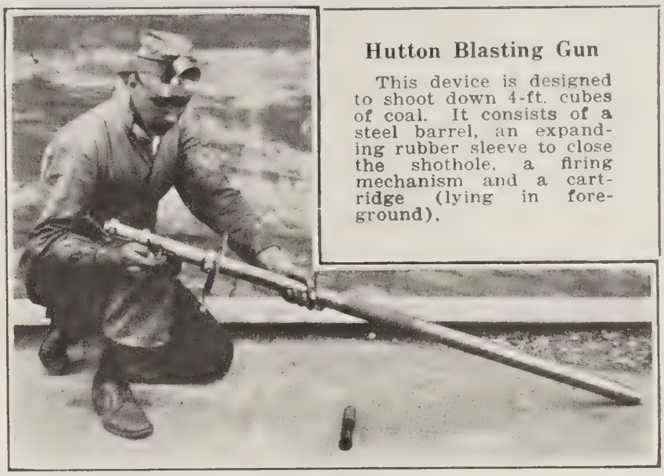
## Hutton Blasting Gun Newest Device for Shotfiring

A DEVICE for firing shots in coal to reduce the quantity of explosive used and thus to raise the factor of safety in mines has been patented by Ernest Hutton of Fairmont, W. Va. It is, essentially, a firing barrel equipped with a detonating mechanism at the "breach," a cartridge chamber at the end which is inserted in a shothole in coal and an expanding rubber sleeve to close the hole. Mr. Hutton perfected it to be used on a combination shooting, loading and conveying machine not yet manufactured but he hopes the gun will find a place for itself in coal mining whether the machine does or not. He thinks mining methods now developing may require small and frequent shots rather than the ordinary heavy charges fired at infrequent intervals.

It has been determined that the best results with the gun are obtained by shooting a block of coal not exceeding, in size, a 3½- to 4-ft. cube which is open on three sides—these three sides being the face, an open end and the undercut. This of course is a small amount of coal per shot as compared with the common methods of shooting where two or three sticks of permissible explosive per shot are used, and it is not anticipated that the gun will displace the present methods of shooting where the old methods of mining obtain.

In general appearance the gun is a piece of 2-in. pipe. It consists essentially of the following parts: First, a piece of steel tubing, 6 to 8 ft. long; second, a firing pin at the inner end where the cartridge is attached which is operated by a hammer inside of the tube, the hammer being tripped by a trigger at the outer end of the gun; third, a rubber sleeve about 18 in. long fitted over the tubing at the proper point to close the outer end of a shothole; fourth, means for expanding this rubber sleeve in the hole, preferably by compressed air, to hold the gun in position and to serve as the tamping.

The cartridge used with the gun is fitted on the inner end so that the firing pin of the gun may come in contact with a combination percussion cap and detonator. The cartridge consists of the following essential parts when ready to be fitted to the gun for firing: First, the shell of the cartridge which is of the proper diameter to receive the ordinary stick of permissible explosive and which has its base arranged to receive the combination percussion cap and detonator; second, the combination percussion cap and detonator which is fitted into the base of the cartridge, and third, the explosive proper, which may be any length from one-third to one full stick of permissible.



**Hutton Blasting Gun**

This device is designed to shoot down 4-ft. cubes of coal. It consists of a steel barrel, an expanding rubber sleeve to close the shothole, a firing mechanism and a cartridge (lying in foreground).

It is estimated that the cost of shooting coal with this gun will not, in general, exceed the cost of shooting by means of electric detonators or by the cap and fuse method, and there is a great probability that the cost per ton will be less. This, however, is not the vital consideration so far as the use of the gun is concerned.

If it finds a wide field as a shooting device, its inventor believes, it will be because of its safety of operation due to the small amount of explosive used, the proper "tamping" which it assures, and the improved quality of the coal it may produce.

**After the Wreck**

This 4-ton locomotive left the track in the tipple of Allock mine of the Carrs Fork Coal Co., at Allock, Ky., in the Hazard field. The motorman was not injured but had a narrow escape. The locomotive remained suspended by its hitching to a mine car. Instead of rerailing it in the tipple, it was lowered through the hole it had smashed in the siding, then it went back up to the mine level on a supply incline.

# New Snubber Increases Yield Of Lump Coal

### Shoulder or Notched Kerf Causes Coal to Break Advantageously and to Be Well Rolled Out Onto Mine Floor

KEEN competition in the production of coal demands that the mine product shall contain a large percentage of lump. Furthermore, the operation of the average loading machine is most efficient and can effect real savings only when the coal to be handled is properly shot and rolled out on the mine floor. The individual pieces of coal must not be too small or they cease to be lumps; on the other hand, they must not be too large or they will bind between the machine conveyor or the car and the roof. In short, present conditions demand a better mining of coal than has heretofore been necessary, and at no material increase in cost. Undercutting the face with the new type 114 Goodman snubbing machine accomplishes this result. This machine, which is shown in the accompanying illustrations, has been thoroughly tested in service with highly gratifying results.

**Fig. 1—The New Machine at Work**

In every respect the snubber resembles the standard undercutter except that it carries a short secondary cutter bar above the regular one and the base is higher. Most of the component parts of the standard machine are interchangeable with those of the snubber.

A snubbing machine is one capable of cutting a kerf resembling that made with a hand pick by the old-time miner. The old hand-made kerf was triangular in section, as shown in Fig. 2. The general shape of a hand cut kerf, with its adequate dimensions, greatly assisted in breaking down the coal and rolling it well out on the floor. It also yielded a goodly percentage of lump with a minimum expenditure of powder. With hand cutting light shots shattered the coal less and produced a larger proportion of lump than usually is obtained with machine mining. Mechanical undercutting, however, has so many important advantages well recognized throughout the coal industry that it has become indispensable.

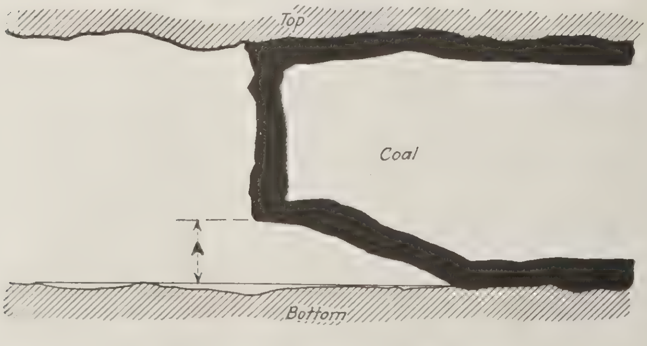


**Fig. 2—Kerf Cut with Hand Pick**

A kerf of this kind is triangular in cross-section. When the coal is shot down it naturally falls and rolls out upon the mine floor instead of merely settling in a compact mass. Light shooting with a cut of this kind therefore is equally as effective as heavier shots in a face that has been machine undercut in the ordinary manner and more lump is produced.

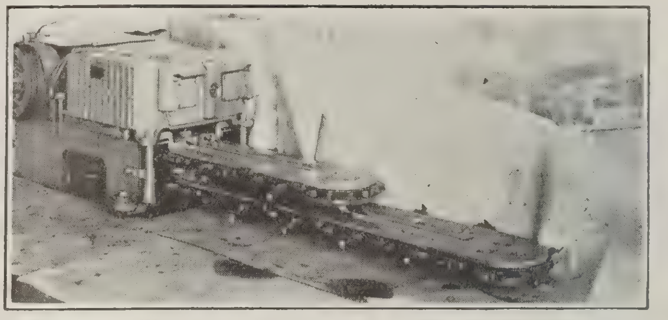


**Fig. 3—Front View of the Machine**

This well illustrates the comparative lengths of the two cutter bars. While it may be advantageous to vary the length ratios of these bars to suit local conditions the upper one usually is made about half as long as the lower.

As shown in Fig. 3 the new snubber is practically a Goodman universal-control shortwall machine equipped with high underframe and two cutter bars carrying similar cutter chains but of unequal length. Necessary reinforcements have been added to withstand the increased load arising from this construction. Wearing parts, however, have not been materially altered and are interchangeable with those of the universal shortwall machine. For this reason adoption of the snubber does not necessitate any great extension in the list of repair parts that should be kept in stock at any mine where the universal-control shortwall machine is now in use.

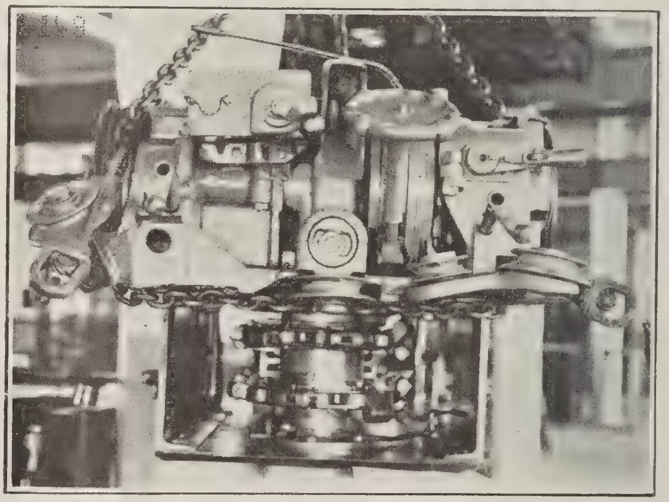


**Fig. 4—Rear View of Snubber**

The high sub-base is here well illustrated. The greater height as compared to the standard undercutting machine is made necessary by the addition of the upper or secondary cutter bar.

This new snubbing machine may be adapted to either direct or alternating current. It has a 50-hp. motor of either the open or government approved inclosed type. Its electrical equipment throughout is interchangeable with that of the universal machine of the same specification. The over-all dimensions also, except for an increase of 7 in. in height, are the same.

As shown in Fig. 3, this machine has an upper bar about half the length of the lower one. The relative lengths of the two bars, however, are subject to variation to suit local conditions. Tests indicate that the irregular shape of the kerf cut by the snubbing ma-

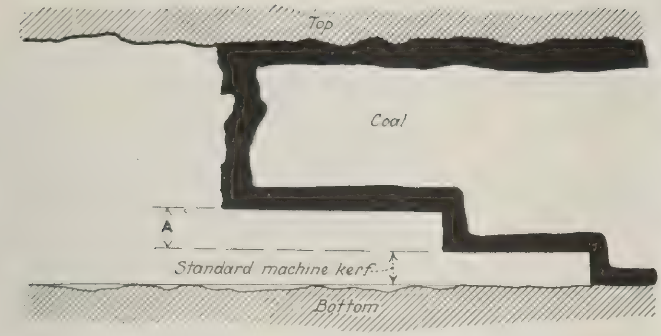


**Fig. 5—Kerf Cut by Snubbing Machine**

This is practically two standard undercutter kerfs of different depths superimposed one upon the other. In cross-section this kerf approximates that made by the hand pick or by the pneumatic puncher.

chine, as shown in Fig. 5, is more desirable than the plain wedge-shaped undercut made with hand picks. The sharp offset, corner or ledge, formed by the upper chain near the middle point of the kerf length appears to have an excellent effect in rupturing the coal when it strikes the floor, just as a notch cut into any hard substance usually forms the starting point of a break.

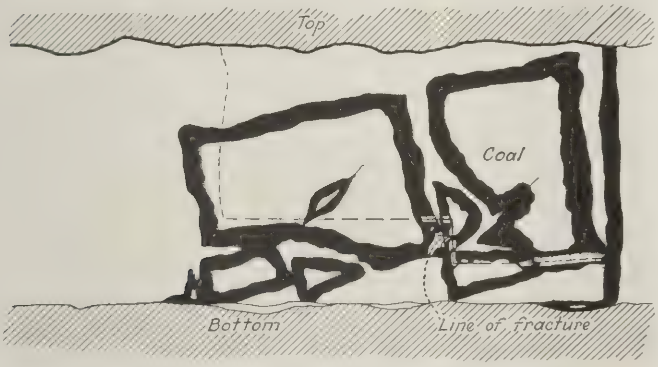


**Fig. 6—Action of Kerf Offset in Blasting**

When coal undercut by a snubbing machine is shot down the shoulder on its lower face, coming in contact with the floor rock imparts an extra shock to the falling mass. Thus not only is the tumbling action of the hand-cut kerf effected but equal results are obtained with less powder.

It seems that this ledge ruptures the coal and causes it to fall in two sections, as shown in Fig. 6, with the result that a smaller amount of powder is required than is necessary with the plain wedge-shaped undercut.

Thus the use of this machine gives a double powder saving, assures an ample rolling action and secures a maximum proportion of lump. Of course this is possible only when the shotholes are effectively placed, the explosive loaded in proper quantity and the shots correctly fired.

This new snubbing machine has given an excellent account of itself under actual mining conditions. It is easily adaptable—principally by varying the length of the two cutter bars—to meet the requirements of divergent mining conditions and the varying natures of different coals.

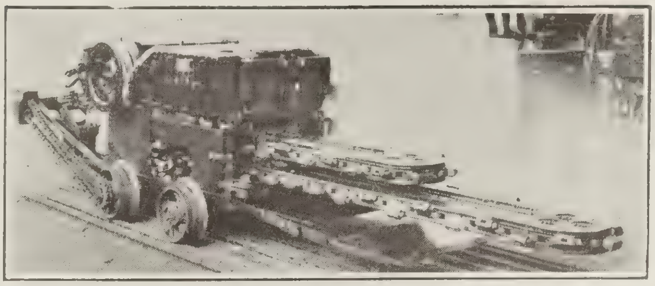


**Fig. 7—Ready for a Move**

The truck and other equipment provided for transporting the snubbing machine is practically identical with that with which the standard undercutter is equipped. The new machine may thus be moved about loaded and unloaded as easily as the machines intended for making ordinary undercuts.

## Wagon Loader Helps Solve Entry Problems Underground

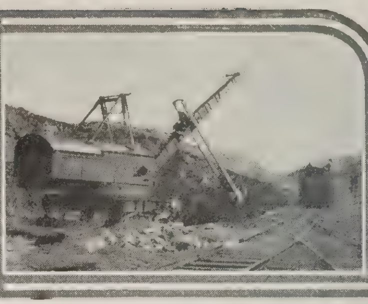
When N. H. McClevey, manager of the Pike County Coal Corp., Petersburg, Ind., decided to speed up entry work in developing territory for his long-face Ace loaders, he purchased an ordinary wagon loader, took it off the regular mounting and mounted it on mine car wheels. The upright frame was pivoted on the base plate of the truck so that this frame can be let down to pass under low places in the mine.

The photograph, from which the accompanying illustration was made, was taken in the coal company's shop at Petersburg, just before the loader was taken into the mine. In actual use the machine has proven to be very satisfactory, loading over 60 tons per shift. In reality the machine is not a loader but is only a conveyor which elevates the coal after it has been shoveled by hand on to the lower end. The entire cost of the unit was not over $700.

**Wagon Loader Goes in Mine**

This outdoor machine was taken off its regular mounting and put on a mine car truck, reducing its headroom requirements. Then it went underground and loaded 60 tons of coal a day in entry work.

# News
# Of the Industry



## Anthracite Conferees Reach No Agreement on Miners' Wage and Check-off Demands; Parley Runs On

**By Sydney A. Hale**
Special Contributor, *Coal Age*
New York City

Concentration upon the two major planks in the miners' demands—wage increase and check-off—featured the second week's negotiations of the subcommittee of the anthracite operators and miners at the Hotel Traymore, Atlantic City, N. J., July 21-24. The union representatives fought hard to break down the position of the employers that the competitive situation facing hard coal made it impossible to agree to changes in wage rates which would increase the cost of coal to the domestic consumer. Although spokesmen for the operators have conceded the initiative to the Mine Workers by stating that the latter were, in effect, "the plaintiffs" in the negotiations, the union men were on the defensive, seeking to combat the arguments set forth by S. D. Warriner in his reply to the miners' demands made when the scale committee first convened on July 9.

That reply indicated clearly that the operators have in mind a number of counter-demands to present to the miners. They have, however, consistently refused to disclose these demands until the miners have completed the presentation of all the arguments in favor of the program that was framed by the tri-district convention at Scranton the first of July. This does not mean that the operators on the subcommittee have not vigorously answered the contentions made by the spokesmen for the union on that committee; far from it. But they have refused to give a flat acceptance or rejection to any proposition advanced by the miners during the meetings.

### Operators Sidestep Rate Issue

The operators, it is true, have declined to assent to the proposal for a joint petition to the Interstate Commerce Commission to investigate anthracite freight rates. But, aside from the fact that that question is already before the commission, the operators do not feel that it is properly a part of the present negotiations. Their opposition to the check-off also has shown no signs of weakening, so that their position on that question is so well known to the miners that a definite restatement of their attitude would add nothing to the general understanding of the situation. The greater part of the sessions last week were devoted to a discussion of that subject, euphoniously phrased in the miners' demands as "complete recognition" of the union, and it is not a matter of public knowledge that any new arguments were advanced by either side.

Neither side, of course, will make any prediction as to the outcome of the negotiations. It is estimated that it will take another two weeks to complete the presentation of the miners' demands. The operators say that they think they can make their presentation in less time than it has taken their opponents. Spokesmen for both groups express the hope that an agreement will be reached by the present committee, but when Major W. W. Inglis, chairman of the operators' group, asked the miners to eliminate all danger of a suspension on Sept. 1 by joining with the operators in an agreement to continue work after that date, the miners rejected the offer as "premature."

### Discount Bittner Telegrams

Major Inglis' proposal followed the publication of the Van Bittner telegrams to Secretaries Davis and Hoover in which the United Mine Workers' official renewed the threat of a general strike to enforce the Jacksonville agreement. These telegrams were not seriously regarded by observers at Atlantic City, but a statement credited to Mr. Bittner that both anthracite and bituminous workers were included in his threat caused the operators to seek further light. Vice-President Murray of the union disclaimed any intent upon the part of his organization to involve the hard-coal region in the bituminous troubles arising out of the Jacksonville agreement.

In the consideration of the demand for a 10 per cent increase in contract rates and an advance of $1 per day to day men the subcommittee entered into an extended discussion of competition between anthracite and other fuels. The competition between the steam sizes of anthracite and bituminous coal was outlined. Working time and conditions in the soft-coal regions also were touched upon. The miners sought to stress statements made in "The Burning Question" (a monthly bulletin sent by operators to retail distributors) featuring the claims of anthracite as a domestic fuel and the high cost of gas.

Engineers who have looked into the gas question predict growing competition from this source and a material reduction in the cost of gas heating. This prediction is based upon the rapid development of coal-gas manufacture—a development which means the substitution of bituminous coal for anthracite in gas manufacture, as well as a large increase in the tonnage of coke to be marketed through domestic channels—and the work being done in perfecting a combination gas and fuel-oil burner.

In connection with the general discussion on the wage demands there was some argument in the committee on present and past working time in the anthracite regions and the outlook for the future. The miners also sought information as to retrenchment policies evidenced in the closing down of certain collieries and the reasons such action was taken. There also was debate upon the original cost, depletion and present value of the anthracite producing properties. The official communiqués of the week, however, were barren of any suggestion that the miners had offered any economic justification of their demand for higher rates of pay, although Mr. Murray, after the sessions had adjourned over the week-end, promised the press that such an effort would be made.

The subcommittee resumed its sessions on July 28.

### *Americans and British Buy Half of a Stinnes Company*

American and British bankers on July 27 bought a half interest in the Deutsche Luxemburgische Co., one of the largest of the group of Stinnes concerns in Germany, for approximately $4,000,000. This is the first time British and American interests have combined to invest in any German industrials on such a scale as this. The buyers are Dillon, Read & Co., of New York, and J. H. Shroder & Co., of London. The Deutsche Luxemburgische Co. together with the Gelsenkirchen, Bochumerverein and Siemens constitutes the Rhine-Elbe Union, the largest producers of coal, coke, iron and steel in Germany.

# General British Mine Strike May Bring 1,200,000 Men Out July 31 Though Government Is Mediating

Great Britain may experience a general coal-mining strike July 31. Four days before the deadline it appeared possible that the coal-mine operators and the men would continue a joint conference which had begun with a short session on July 24, but there were no indications of results. This conference—the first that had taken place since the operators several days earlier had posted notices at the pitheads all over Great Britain that reduced wages and longer working days would be put into effect Aug. 1—was arranged through government mediation. The mediator was the First Lord of the Admiralty, W. C. Bridgeman. Up to the moment he brought representatives of both sides together neither faction had been willing to grant a single point and each seemed obdurate. Whether the conferences, if they continue up to the night of July 31, will soften the position of either remains to be seen.

Many keen observers in England have been declaring that a general coal strike cannot be avoided. The London *Times* editorially refers to the resumed negotiations as "amiable delusions resting upon vague recollections of former disputes under totally different circumstances." The *Times* says the more the two parties to the dispute get together the less they agree. It holds that the coal industry is sick and that a radical remedy of some sort must be found before labor difficulties can be removed. It warns the English people to awake to this fact. The Archbishop of Canterbury on Sunday issued an appeal to the people of England to pray for guidance that some way may be found to prevent the industrial chaos toward which Great Britain is headed. "Never, so far as I can judge," said he, "has the danger been so grave and so urgent as it is today."

Not only are England's 1,200,000 coal miners on the verge of laying down their tools on the order of the Trades Union Congress, which has the miners' case in its hands, but it is broadly hinted that transportation unions will quit in sympathy. Herbert Smith, president of the Miners' Federation, said that if there was a strike and if German coal began to come in, he "could trust the transport workers" and railwaymen to refuse to handle it. He did not refer to American coal, though inquiry from American shippers was becoming brisk.

In the government's struggle to stave off the mine strike Premier Baldwin agreed to meet the Trades Union Congress special mine committee on the 27th. There was some hope pinned to this meeting. However, the situation seemed to be at deadlock. The nearest thing to negotiation was a proposal made rather indefinitely from the operators' side that wages be adjusted so that allowance be made for the size of a miner's family.

The Miners' Federation has agreed that even if there is a strike, maintenance men shall be left on the job to save the mines from flooding, provided these men receive the present scale of wages no matter how long the strike may last.

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## Ohio Merger Not Dead Yet

Merger discussion in the eastern Ohio No. 8 field has come to a standstill largely on account of the absence from Ohio of officers of companies whose consolidation has been talked of. Edward Johnson, of the Lorain Coal & Dock Co., Columbus, is in Europe.

The impression got around the coal trade in Cleveland that the merger had been given up or indefinitely postponed, but this is incorrect. The report resulted from the decision on the part of some of the parties to the plan to sell certain properties not needed in the consolidation.

It is expected the project will be taken up in September. Plans call for a $40,000,000 company controlling nearly all the big operations in a field whose business is now principally railroad fueling. The effect of the Interstate Commerce Commission's refusal to alter the freight rates on lake cargo coal is expected, if anything, to increase the sentiment in favor of a merger.

## Ten Dead from Fire and Blast In Tennessee Mine

William J. Snow, superintendent of the Roane Iron Co. coal mines, and nine other men were imprisoned by an explosion in the company's mine at Rockwood, Tenn., early July 23. Two were killed outright by the blast and no hope is held out for the others.

The men had gone into Bryson Dip on the No. 7 entry to combat a fire that broke out some time ago and was walled up in an attempt to extinguish it. The barricade was removed last week in the presence of state and federal mine inspectors, who pronounced conditions satisfactory. At 11 o'clock the old blaze broke out again and a fire-fighting party was organized.

The bodies of Claude Tindell and Raymond Watkins were later brought to the surface. The bodies were horribly mangled and were identified only by their clothing. Another rescue party entered the mine, but hope of finding the other entombed men alive has been abandoned.

The entrance to Bryson's Dip mine of the Roane Iron Co. was sealed July 24 and all efforts to recover the bodies were abandoned until the fire raging in the mine burns itself out. Rescue workers said that the flames may not subside for a month.

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## Pauley Named President of J. K. Dering Coal Co.

J. B. Pauley, for several years vice-president and operating head of the J. K. Dering Coal Co., of Chicago, has been made president of the company, succeeding the late J. K. Dering. Mr. Pauley also is executor of Mr. Dering's estate. Mr. Pauley has been a rising figure in the coal field of the Middle West ever since he left an important connection with the International Harvester Co. to join Mr. Dering. His dominating strength, keenness, tact and good humor have aided him to become one of the logical leaders among coal operators. He has represented coal operating interests in various capacities, chiefly during negotiations between operators and miners. He is now a director-at-large of the National Coal Association. His company operates both in Indiana and Illinois.

**Tipple Destroyed by Lightning and Fire**

Montour No. 9, of the Pittsburgh Coal Co., two and a half miles northwest of McDonald, Pa., set afire by lightning July 10, causing a loss of about $100,000. The tipple was built in 1917 and was one of the largest in the district, serving two shafts. It was equipped with modern machinery.

## Railroads Put 83,291 Cars in Service in Six Months

The largest number of freight cars on record was placed in service during the first six months this year by Class 1 railroads of this country, according to a report by the Car Service Division of the American Railway Association.

The total number installed during the first half of this year was 83,291, exceeding by 12,417 the number placed in service during the first six months last year and by 4,051 the number placed in service during the first six months in 1923.

Box cars placed in service during the six months period totaled 43,627, an increase of 12,191 over the number installed during the same period last year and 10,541 in excess of the same period in 1923. Coal cars placed in service this year numbered 29,504, an increase of 7,029 above last year but 2,240 below two years ago.

Freight cars on order on July 1, 1925, totaled only 28,197 compared with 60,315 on July 1, 1924, and 96,855 on July 1, 1923.

Class 1 railroads during the first half of 1925 placed in service 927 steam locomotives compared with 1,071 during the same period last year and 1,998 during the same period in 1923. The same roads on July 1, 1925, had 279 locomotives on order compared with 360 on the same day last year and 1,902 two years ago.

These figures as to cars and locomotives include new, rebuilt and leased equipment.

The average capacity of the freight cars owned by the Class 1 railroads on July 1 this year was 44.56 tons compared with 43.88 tons on the same date last year, or an increase of 1.5 per cent.

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A. B. Lewis, state director of the Department of Mines and Minerals of Illinois, has announced the August itinerary of the Illinois Miners' Examining Board as follows: Aug. 3, Collinsville; Aug. 4, Harrisburg; Aug. 5, Herrin; Aug. 6, Marion; Aug. 7, West Frankfort; Aug. 8, Duquoin; Aug. 10, Staunton; Aug. 11, Springfield; Aug. 12, Taylorville; Aug. 13, Danville; Aug. 14, La Salle; and Aug. 15, Peoria.

*Keystone View Co.*

**Lady Rhondda**

Addressing the first conference of women in science and commerce at Wembley, England, Lady Rhondda pleaded for fathers to take their daughters into partnership. There should be more names reading "John Brown & Daughters" instead of "John Brown & Sons." Lady Rhondda herself was trained in business by her father, one of the richest coal operators in Wales, and she is a director in many companies.

## N. & W. Orders 1,000 Coal Cars

The Norfolk & Western Ry. has ordered 1,000 hopper coal cars from the Ralston Steel Car Co. and is understood to be buying 30 tender engines from Baldwin Locomotive Works. The Richmond, Fredericksburg & Potomac also has ordered two mountain type and two switching engines from the American Locomotive Co.

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Plans of C. P. White, chief of the Coal Division, Department of Commerce, and secretary of the Advisory Committee of the Bureau of Mines, call for a meeting the latter part of this week of the Advisory Committee. Not more than four of the seven members are expected at this meeting, which will be preliminary to a meeting of the full committee to be held about ten days later, at which Secretary Hoover, who will return from California the first week of August, will be present.

## Industrial Coal Stocks Gain Slightly

Coal stocks on hand in industry July 1 are estimated by the National Association of Purchasing Agents at 39,432,000 tons, sufficient for forty-one days' supply based on the amount consumed daily during June. The June 1 estimate of stocks was 39,317,000 tons.

A survey throughout the United States and Canada shows that 18 per cent of industrial consumers carried about the same amount of coal on hand July 1 as on June 1; 37 per cent had more on hand and 45 per cent had less. Those carrying more coal than on the first of the previous month did not have abnormally large stocks on hand, showing that the increase was due simply to a normal replenishment of used stock.

It is estimated that 28,050,000 tons of coal were used in industry during June. This figure does not include any coal used for heating buildings. This is about one and a half million tons less than May consumption. The difference in daily consumption was only 10,000 tons less for June, however, as May contained 31 days. About 2,000,000 tons less coal was used in June, 1925, than during June, 1924, a decrease of 7 per cent.

## U. P. Old Timers Organize

Nearly three hundred employees of the Union Pacific Coal Co. who have been in the service of the company from twenty to forty years have formed an organization known as the "Old Timers." The organization meeting, at Rock Springs, Wyo., late in June, was featured by a musical program, recitations and a banquet with speeches by notables, George B. Pryde, vice-president and general manager of the company, acting as toastmaster.

The climax of the affair came when Eugene McAuliffe, president of the company, expressed his appreciation of the long and faithful service of the men in the new organization and presented gold buttons to twenty-one men who have been in the company's employ forty years or more. Three of the latter are Chinese.

# Bituminous Coal Loaded Into Vessels at Lake Erie Ports During Season to End of June

(In Net Tons)

| Ports | Railroads | 1925 Cargo | 1925 Fuel | 1925 Total | 1924 Cargo | 1924 Fuel | 1924 Total | 1923 Cargo | 1923 Fuel | 1923 Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Toledo | Hocking Valley | 3,003,070 | 86,759 | 3,089,829 | 2,283,927 | 67,447 | 2,351,374 | 1,553,478 | 45,717 | 1,599,195 |
| | Big Four | 517,657 | 1,651 | 519,308 | | | | | | |
| | N. Y. C.-Ohio Central Lines | 259,290 | 24,050 | 283,340 | 4,505 | 227 | 4,732 | 642,792 | 19,653 | 662,445 |
| | Baltimore & Ohio | 1,002,569 | 30,378 | 1,032,947 | 468,692 | 14,834 | 483,526 | 723,174 | 21,577 | 744,751 |
| Sandusky | Pennsylvania | 1,677,960 | 51,178 | 1,729,138 | 637,844 | 19,219 | 657,063 | 835,312 | 24,321 | 859,633 |
| Huron | Wheeling & Lake Erie | 272,100 | 12,629 | 284,729 | 262,486 | 12,726 | 275,212 | 504,478 | 18,071 | 522,549 |
| Lorain | Baltimore & Ohio | **135,913 | 41,239 | 177,152 | 454,962 | 42,758 | 497,720 | 968,567 | 58,641 | 1,027,208 |
| Cleveland | Pennsylvania | 45,587 | 49,720 | 95,307 | 350,273 | 55,631 | 405,904 | 641,445 | 53,040 | 694,485 |
| | Erie | 18,138 | 1,252 | 19,390 | 113,021 | 3,631 | 116,652 | 358,487 | 15,176 | 373,663 |
| Fairport | Baltimore & Ohio | ‡108,673 | 32,133 | 140,806 | 151,589 | 33,491 | 185,080 | 224,947 | 20,860 | 245,807 |
| Ashtabula | New York Central | 111,785 | 36,812 | 148,597 | 326,648 | 38,807 | 365,455 | 1,372,834 | 79,608 | 1,452,442 |
| | Pennsylvania | 151,160 | 19,943 | 171,103 | 321,273 | 27,629 | 348,902 | 640,104 | 26,908 | 667,012 |
| Conneaut | Bessemer & Lake Erie | 371,597 | 82,636 | 454,233 | 557,685 | 81,051 | 638,736 | 958,390 | 58,164 | 1,016,554 |
| Erie | Pennsylvania | 56,047 | 19,838 | 75,885 | 137,330 | 24,161 | 161,491 | 207,098 | 26,551 | 233,649 |
| Totals | | 7,731,546 | 490,218 | 8,221,764 | 6,070,235 | 421,612 | 6,491,847 | 9,631,106 | 468,287 | 10,099,393 |
| Storage Loading | | †33,017 | 1,048 | 34,065 | *182,060 | 4,940 | 187,000 | | | |

* Coal loaded into vessels in December, 1923, after close of navigation and forwarded from Lake Erie ports during 1924.

† Coal loaded into vessels in December, 1924, after close of navigation and forwarded from Lake Erie ports during 1925.

‡ Includes 5,142 tons cargo, 56 tons fuel diverted from Lorain, B. & O.

** Includes 27,868 tons cargo, 1,697 tons fuel dumped at Huron on account of fire at Lorain, June 12, 1925; also 3,631 tons fuel dumped over ore dock at Lorain.

Compiled by Ore & Coal Exchange, Cleveland, Ohio; H. M. Griggs, manager.

# Anthracite Shortage Unlikely Even If Miners Strike, Washington View; Soft-Coal Threat Not Taken Seriously

**By Paul Wooton**

Washington Correspondent of *Coal Age*

Observers of the coal situation with headquarters in Washington are at a loss to understand articles in the daily press intimating that a severe shortage of coal would follow promptly on the heels of an anthracite strike. The opinion of specialists both inside and out of the government service is to the effect that any such a shortage is highly unlikely. While stocks on June 1, when regarded generally, were no more than normal, the probabilities are that they will be built up rapidly before the end of the anthracite agreement. The time is ample to provide a comfortable reserve against a possible shutdown.

The stocks of bituminous coal on June 1, according to the recent report of the U. S. Geological Survey, aggregated 38,000,000 tons. During the time which will have elapsed by Sept. 1 consumers easily could add 2,000,000 tons a week to their stockpiles without straining either the productive capacity of the mines or the carrying capacity of the railroads.

Few of the Washington observers expect the threatened strike in the bituminous mines to materialize. They realize that there are some operators in both the union and non-union camps who would welcome a strike, but the belief is that the great majority of them feel that it would be a great calamity. The sacrifices made to deflate the industry under the Jacksonville agreement would be in vain if a period of high prices should ensue. The thousands of mines now closed would spring back to life. At the end of its debauch the industry would awake with more excess capacity than ever.

### Strike Might Save Lost Cause

It also is appreciated that some of the leaders among the mine workers would welcome a strike as the only way out of an impossible situation, which otherwise spells defeat and ruin for their personal fortunes. Here also wiser counsel is likely to prevail, it is believed. The leaders must take into account the heavy losses which their ranks have suffered. Practically 70 per cent of the current output of coal now is being furnished by non-union workers, as compared with 40 per cent two years ago. The situation in northern West Virginia is typical of union loss of ground. A coal miner from that section says:

"None of the coal in northern West Virginia which ordinarily is referred to as union tonnage is produced in strict compliance with the terms of the Jacksonville agreement. Modifications permit that coal to be produced at a cost much lower than would be possible were the agreement followed exactly. It permits the so-called union mines to compete with non-union operations in that part of the state. They are thirteen in number with a total output of 200 railroad cars per day, which is 12 per cent of northern West Virginia's current production."

To provoke a strike under such conditions obviously would benefit chiefly the non-union operations. The expanded non-union area can produce more than the railroads can haul away. The railroad capacity is 8,000,000 tons a week—enough to keep the country going for a long time. A bituminous strike, all agree, would be the signal for the signing of many new contracts with non-union shippers.

Had it not been for the experience in 1922, when such strong non-union centers as Somerset, Cumberland and Westmoreland were closed, as much to the surprise of the United Mine Workers as to the employers, no one would consider the possibility of non-union men going out this year. The knowledge of the great depression in union fields will be a restraining influence on the non-union miners who might otherwise join in the movement.

### Hard-Coal Stocks for 52 Days

Even in the matter of anthracite supplies are ample for some time. The stock report shows fifty-two days' supply on hand. This does not include stocks in the bins of the ultimate consumer. While few householders buy winter fuel before June 1, the surplus from the preceding winter makes a sizable aggregate. It is admitted, however, that rationing of anthracite would have to begin before the winter was over. The experience of 1922 and 1923 furnishes a yardstick. At that time a five months' strike caused a 40-per cent shortage. While stocks probably are no larger now than then, a large number of consumers have been educated to use substitutes. New England, by reason of experience in the previous strike, has learned that coal can be landed in an emergency in considerable amounts at most of its smaller ports. For these reasons it is believed that a longer suspension would be necessary to bring New England to the point that it was at the end of the last strike.

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Bituminous coal mines in 1924 used 165,543,000 lb. of all classes of explosives, states W. W. Adams, statistician, Bureau of Mines. This quantity represented 342 lb. of explosives for each thousand tons of coal produced. Of the 342 lb. of explosives, 73 lb. was permissibles, 20 lb. was other high explosives, and 249 lb. was black powder. Permissibles, therefore, constituted about 20 per cent of the total quantity of all explosives used in mining bituminous coal. In 1917 permissibles formed only 11 per cent of the total quantity of explosives used.

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## *Pittsburgh Coal Co. to Centralize Four Mines*

Pittsburgh, Pa., July 28.—The Pittsburgh Coal Co., it was learned today, has started work on centralization of four of its mines at an approximate cost of $600,000. The mines are the Warden, located in Douglas Hollow, near Douglas station on the Pittsburgh, McKeesport & Youghiogheny branch of the Pittsburgh & Lake Erie R.R.; Ocean No. 2, Lovedale and Forest Hill mines. The last three, it was said, will be connected by tunnels with the Warden Mine, at which a steel tipple will be constructed. In this way all coal taken from the four mines can be loaded on cars at the mouth of the Warden Mine.

Construction work has been started at the entrance of the Warden mine. The project includes the construction of a concrete wall and the laying of a railroad spur through Douglas Hollow from the mine to the Pittsburgh, McKeesport & Youghiogheny branch.

Of the total amount of money appropriated for the work, it was said, $200,000 will be for mine cars.

There is no expectation, company officials said, of opening the mines by Nov. 1, as reported in the press.

## Lake Cargo Rates to Stand

There will be no change in bituminous lake cargo rates to Lake Erie ports this season.

The Interstate Commerce Commission, in a decision by Commissioner Hall, has dismissed the complaints of the operators associations of Ohio, Pittsburgh and the Fairmont district seeking reductions in transportation charges and a widening in the spread in the differentials between the rates from those fields and the charges in effect from southern West Virginia and Kentucky. In taking this action, the commission reversed the report of its examiners, whose tentative opinion (*Coal Age*, March 12, p. 403) was, on the whole, favorable to the contentions of the complainants.

The decision of the commission reiterates, as in the Boileau case, that cost is not the only factor to be considered. Taking all the elements into account, it finds that the existing basis is neither unreasonable nor unduly prejudicial. It points out that the rates from the Southern fields, which formed the gravamen of the complaints in these proceedings, are made by carriers who have no voice in the making of rates from Ohio and western Pennsylvania, so that a finding of unjust discrimination cannot lie. While the minimum rate powers of the commission were invoked, the federal tribunal declined to exercise them. Such powers, it declares, must be used sparingly.

Commissioners Eastman, Lewis and McManamy dissented to the majority decision. Commissioner McChord filed a brief opinion repeating his conviction, expressed in the Ohio-Michigan Coal cases, that Ohio and Pittsburgh rates are still out of line.

# Open-Shop and Union Mines Resume In West Virginia Strike Zone

More mines resumed operation in the West Virginia strike region recently. The Consolidation Coal Co. reopened New England mine, at Watson, near Fairmont. This is one of the older and best known operations of the company and produces thirty cars of coal daily under normal conditions. No difficulty is being encountered in obtaining men for work at the mine, it is reported. With the resumption of work on the 1917 wage scale the New England mine is the most picketed mine in the region at present. Every morning from 300 to 600 pickets, including women and children, are appearing on the picket line, urging miners not to return to work.

The work of cleaning up Riverdale mine of the Consolidation Coal Co. was under way last week and coal will be loaded there soon. The mine has been idle 1½ years.

Rosedale mine No. 2 of the Rosedale Coal Co., at Poland, Pa., resumed work on a non-union basis last week. The tipple of this plant was burned down several weeks ago.

### Two Mines Start Union

Davis & Gilbert Coal Co. mines Nos. 1 and 2, in Scott's Run, resumed operation on a union basis July 23, according to officials of the United Mine Workers. Efforts to work there previously resulted in a disagreement and the union withdrew the men. The mines, it is reported, will employ 450 men. A day shift will be worked at mine No. 1 and a night shift at No. 2, according to reports. The company recently completed a modern tipple at its plants.

Miners employed by the Consolidation Coal Co. under the so-called company contract plan held a meeting in Shinnston on Thursday night of last week, when great satisfaction was expressed over the progress of the new labor organization in this field, according to reports. The plan now is to start a district organization among the miners employed by the company, it is announced, and another meeting has been called for this week to perfect the organization. Grievances were presented and disposed of and minor difficulties were settled, according to press reports. The men are well satisfied with the check weighman plan as used by the company union and it is said that this will be one of the more important features of the big union. John B. Wyatt of Shinnston, counsel for the miners working at company contract mines, has been retained for the big union.

Alleging that he was attacked and beaten up by men carrying out the order of J. W. Devison, of Grant Town, general superintendent, and other officials of the New England Fuel & Transportation Co., Daniel Cronin, Jr., has brought suit through his attorneys in the sum of $25,000, with attachment proceedings, against that concern.

The United Mine Workers continues to hold miners' mass meetings in the field. Meetings were held last week at Everson, Zeizing, Downs, Kingmont and Monongah. Week-end meetings were arranged for Carolina, Barrackville and Laura Lee.

A blast of dynamite which exploded in the early morning of Wednesday, July 22, caused reports to be circulated that depredations were being committed in the region. The charge was set off by Baltimore & Ohio employees, to dislodge accumulations of tar and débris which clogged up a culvert near Fairmont, causing the water that was dammed to wash out a portion of the roadbed. All traffic was tied up 11 hours and the coal movement to the east on both the M. R. branch to Clarksburg and the main line to Grafton was cut off.

Officials of the United Mine Workers issued a statement last week in which they alleged that the non-union coal operators were padding their production reports for the purpose of weakening the morale of the union miners. The statement set forth also that merchants in northern West Virginia realized that the state of business did not lead them to believe that the coal production had reached such dizzy heights as claimed.

Patrick Buckley, president of local union No. 1,643, of Monongah, the largest local union of the United Mine Workers in the region, issued a statement last week in which he asserted that only twelve members had deserted the ranks to work non-union at the New England mine at Watson, and these men, according to Buckley, had gone back to work on the 1917 wage scale at Scott Mine of the Bethlehem Coal Co. prior to this.

### Lull in Panhandle Region

The Panhandle strike has quieted down again. A temporary injunction was granted by Judge J. B. Sommerville of the Circuit Court in behalf of the Pittsburgh, Virginia & Kentucky Coal Co. of Wellsburg, Brooke County, against John L. Lewis, Philip Murray, William Roy, Frank Ledvinka, Lee Hall, Joseph Angelio and 50 other members of the United Mine Workers, prohibiting them from picketing, intimidating employees or in any way intefering with the operation of the company's mines. According to last reports the union officials are making preparations to take an appeal from the decision of the court.

Threat of a general strike in the anthracite and bituminous coal fields in a telegram to the government by Van A. Bittner, West Virginia international representative of the United Mine Workers, who was in Atlantic City, attending the anthracite wage conference last week, caused a mild stir. Much of the sting was removed, however, when hard-coal miners expressed the belief that each industry must stand on its own feet and that the hard-coal fields could not be depended upon in the proposed strike plans.

Deputy sheriffs arrested twelve union men at the New England mine of the Consolidation Coal Co. on July 24, on charges of being disorderly incident to picketing at the plant. Each man was held under $200 bond for a hearing before a magistrate in Fairmont.

Operations in Northern West Virginia produced 5,571 cars of coal in the first four days of last week. Union mines had an output of 856 cars. A new daily peak for non-union coal production was reached July 22, when 1,427 cars, were loaded. Production continues heavy on the Monongah Division, B. & O., where a new daily loading level was reached July 22, when 726 cars were produced. Non-union production continues heavy along the Monongahela Ry.

## *Smelter Shifts to Coal*

The Phelps Dodge Co. will spend approximately $100,000 within the next few months in remodeling its furnaces at the Clifton (Ariz.) smelter to use pulverized coal instead of oil, according to a recent statement by J. P. Hodgson, general manager. The company believes that a material saving can be effected by the change. The equipment to be installed will include a coal pulverizer. Coal from the Phelps-Dodge mines at Dawson will be used by the Clifton smelter and will be prepared for use here exactly as it comes from the mine.

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## Drop Injunction Proceedings

Injunction proceedings to prevent directors of the Harmon Creek Coal Co. from extending the lien on a $1,500,000 mortgage, executed in August, 1917, to cover additional properties have been dropped upon the agreement of the majority of the directors that such extension would not be made. A temporary restraining order against H. F. Sinclair, of New York, and J. T. M. Stoneroad, George H. Flinn, R. B. Haverstick and B. H. Jones, of Pittsburgh, had been issued by the Court of Common Pleas at Pittsburgh, Pa., last Friday (July 24) on petition of the Creditors' Committee of the Carnegie Trust Co. The committee charged that the proposal to extend the lien was a conspiracy to deprive creditors of their equity in coal lands sold to the Harmon company by John A. Bell but not completely paid for. A statement issued by Mr. Flinn declared that he and Mr. Sinclair had disposed of their interest in the coal company to Mr. Bell over four years ago and had received mortgage bonds in payment.

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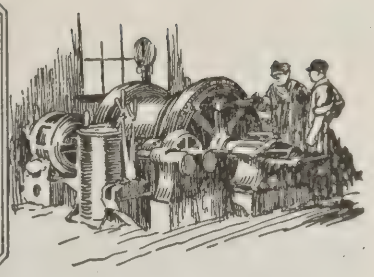
The Great Valley Anthracite Mines, Inc., which holds leases on 371 acres of coal land at McCoy, Va., on the Virginian Ry. and facing the New River is offering for sale through the Union Trust Co. of Maryland, Baltimore, Md., half of an authorized issue of $500,000 general-mortgage 7-per cent sinking-fund gold bonds. This company recently entered the property and now has a 30-deg. slope down 900 ft. in what is said to be "tough coal over 8 ft. thick."

# Practical Pointers For Electrical And Mechanical Men



## Inexpensive Filter Device Prevents Clogging of Water Mains

Many mining operations and camps experience considerable difficulty in keeping their water mains and pipe lines free from a deposit that eventually will obstruct the water passage and thus prevent a free flow of water. Frequently, this deposit is the result of a certain reaction between calcium or other members of the alkaline earths when they come in contact with the iron in the pipe. Such conditions usually necessitate the digging up of the old line and replacing it with new pipe. This operation is sometimes difficult and is always expensive.

The purpose of this article is to tell the maintenance engineer of a cheap device that has proven efficient. However, the reader must bear in mind that such an arrangement is not suitable for a water softener but is merely intended to prevent the obstruction of water lines.

### MATERIAL EASY TO OBTAIN

The material required for such a device or trap, over and above the equipment already employed in the water system, may be listed as follows: One length of 10- or 12-in. iron pipe about 10 ft. in length, a flange coupling fitted to each end of this pipe, two end plates drilled to correspond with the bolt holes in the flange couplings and one hole drilled and tapped in the center of each plate to accommodate the water main; also an ample supply of ordinary coarse slag. The material listed above usually can be found somewhere about any property. Hence the material cost is lowered to a minimum. As for the slag, after it has been polluted with the deposit it may still be used for roadbeds and many other purposes. Although, I cannot recommend it for any kind of cementing project.

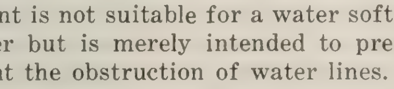


**Fig. 1—Chamber for Slag**

The water which is passed through this pipe comes in contact with materials which take the impurities out of solution.

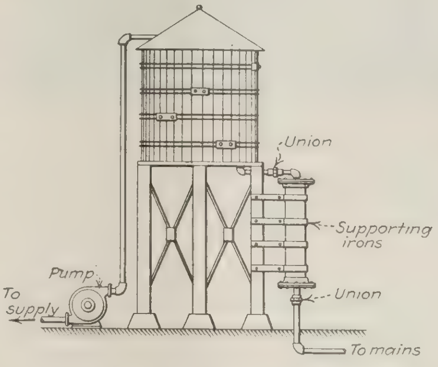


**Fig. 2—How the Filter Is Connected Into the Water System**

Note the filter is connected to the discharge piping of the tank. Here the water travels slower and provides more time for the separation of the impurities from the water.

Fig. 1 shows the assembly of the materials listed above. Now let us make a mental picture of this iron pipe or cylinder, as shown in Fig. 1, full of coarse slag which is porous and rough, ready to collect any solid matter that might pass its way, and connected in series with a water supply system, as shown in Fig. 2; then, we have a clear understanding of the principle on which it operates.

### CONNECT FILTER IN SERIES

It is preferable that this filtering device be connected in series with the discharge line rather than between the pump and the tank, due to the fact that the water usually does not pass out of the tank with as great pressure and speed as it is forced into the tank. Therefore, the slag is given more time in which to collect the sediment and little of it is likely to pass on into the pipe lines.

It is desirable that the cylinder be supported from the tank in a perpendicular position, thus leaving the end plates free for removal when changing the slag. The end plates should be connected to the line by means of pipe nipples and unions so that they may be removed easily. However, when the cylinder stands in an upright position it will be necessary to cover the lower opening with a screen of small mesh to prevent the slag from passing on into the outlet pipe.

The removal and renewal of slag in the cylinder can only be determined through careful observation and experience, as it is obvious this requirement will be governed wholly by the amount of slag employed, the volume of water passing through the cylinder and the amount of solid substance that the water may contain.

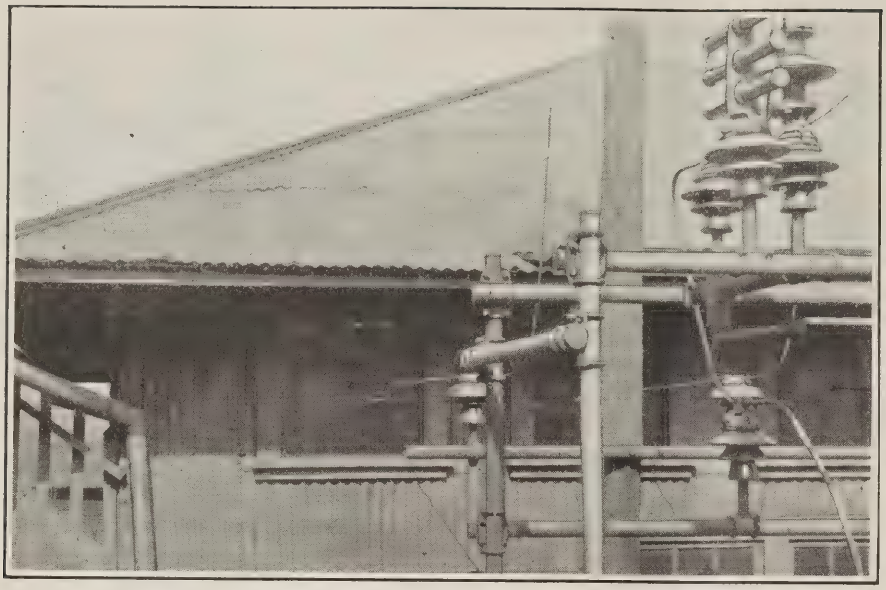
R. L. GRIMES.

## Plate Glass Windows Serve As Wall Bushings

The insulation of high voltage wires at the point where they enter a building is more important when the walls are of wood or metal than when they are of brick or stone. The latter are in themselves fairly good insulators and are not combustible. With a wood or metal-covered building lack of proper insulation may be the cause of a short-circuit or a fire or both. An entrance of rather unusual type is used at the Wayland, Ky., substation of the Elkhorn Coal Corporation.

Here the three-phase 40,000-volt line is brought in through panes of glass rather than through the usual porcelain wall bushings. A 26- x 26-in. single-pane, ¼-in. plate-glass window is provided for each of the three wires. The conductors, which are of solid copper, enter the substation through small holes drilled in the centers of the panes. The three windows are located close to the roof and are protected in a measure from the weather by broad overhanging eaves.

This installation, which no doubt cost less than if porcelain wall bushings had been used, has demonstrated its worth by 12 years of service. It is interesting to note that the leak-



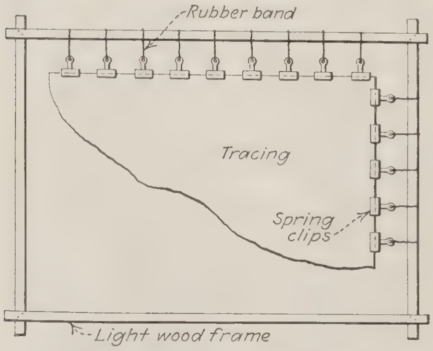
Each Wire Is Carried in Through a Hole in the Glass

Are the windows used as wall bushings or are the wall bushings used as windows? In this case the three upper windows were installed primarily as wall bushings, therefore the light admitted was merely a secondary result. These 40,000-volt entrances which are of $\frac{1}{4}$-in. plate glass have demonstrated their worth by many years of satisfactory service.

age surface on the 40,000-volt plate-glass insulators is 13 in. as compared to 19 in. on present-day porcelain wall bushings rated for use on lines operating at 60,000 volts. In these two cases the length of the leakage path, commonly spoken of as the leakage surface, is practically proportional to the line voltage.

## Home-Made Frame Restores Water-Soaked Drawings

A way to flatten tracings which have been wrinkled and bulged from contact with water is suggested by H. N. Clendening, West Virginia Coal & Coke Co., Logan, W. Va. Several years ago, after a fire he had on his hands a number of tracings which, from severe wetting, resembled bedraggled rags. But the lines, letters and figures on these sheets were still legible, which led him to search for a method to restore the tracings and save the cost of re-inking or perhaps even laying out anew maps from stale notes.



This Frame Is Easily Made

The proper tension around the edges of the drying sheet is maintained by twisted rubber bands to which each clamp is attached.

He hit upon a process which gave satisfactory results. First of all the tracings on the wrong or under side are moistened with a sponge. Then each is stretched on a frame, being held by compression spring clips, arranged at close enough intervals to insure a fairly even stretch on all parts of the cloth, in somewhat the manner of squaring up a house curtain on a stretcher frame. Rubber bands may be utilized to keep the cloth taut, these being tied to the clips on one end and to the frame on the other. The scheme is shown in the accompanying illustration.

Care should be taken to provide uniform tension at all points of suspension so as not to distort the drawing; and only sufficient tension should be provided to take out the wrinkles and bulges. Too great a tension will stretch the drawing excessively out of scale. After the cloth has dried it is well to draw in the indistinct lines and lettering, after which the cloth should be coated with a flexible and transparent water-proofing fluid or varnish. The same general process can be applied to water-soaked drawings on rather heavy paper stock.

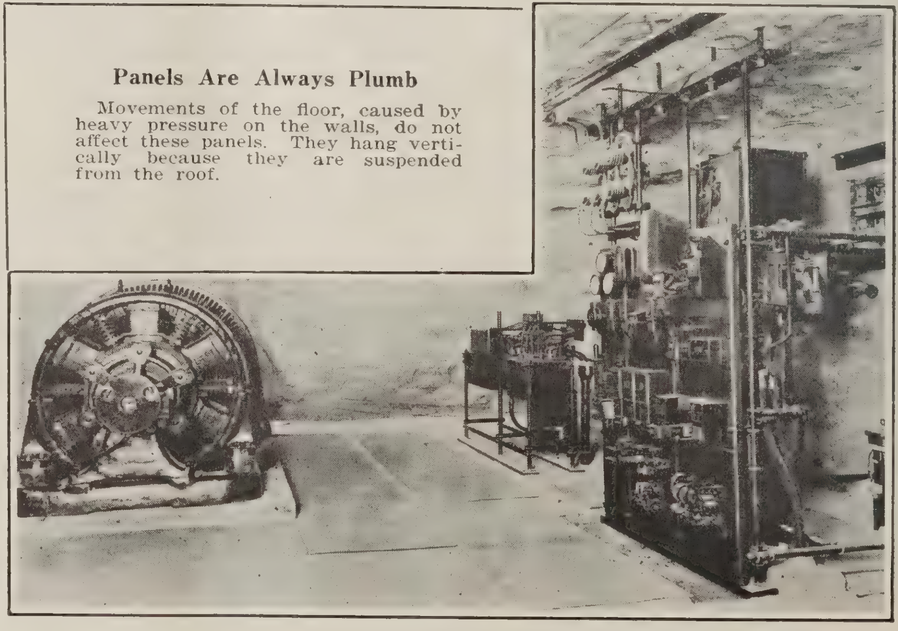
The accuracy of the finished job depends upon the degree of care taken. The lines are bound to be at least slightly distorted and more or less out of scale, but on the whole the drawings will serve their purpose for, after all, what drawing can be scaled accurately to a hair?

## Panels Suspended from Mine Roof Hang Vertically

Some coal mine electrical man may get a helpful idea from the accompanying photograph. It shows a substation in a salt mine. The overhead pressure on the pillars around the substation room was so great that the floor tended to bulge. This unusual condition was met by supporting the automatic substation control panels from the roof.

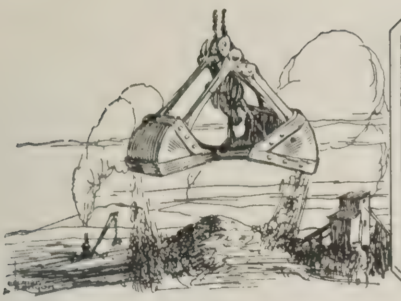
Holes were drilled in the roof of the mine chamber and hangers similar to those used for suspending trolley wires were utilized. By this means the control panels hang in a vertical position. Because the switching equipment provides automatic control it was essential that the panels be plumb at all times.

The motor-generator set was mounted on a massive block of concrete in no way attached to the side walls.



Panels Are Always Plumb

Movements of the floor, caused by heavy pressure on the walls, do not affect these panels. They hang vertically because they are suspended from the roof.



# Production And the Market

## Sentiment Improves in Soft-Coal Market; Anthracite Trade Gains Steadily

Sentiment in the soft-coal trade continues to improve gradually but steadily. Demand is picking up and inquiries are increasing, and the market is better off for the fact that there is nothing of the spectacular in developments. If producers continue to adhere to the present conservative volume of output there is every reason to believe that better things are in store for the trade. As usual, some elements in the business are speculating on the possibilities in the event of a hard-coal strike, but with the railroads giving excellent service there is little likelihood of a runaway market

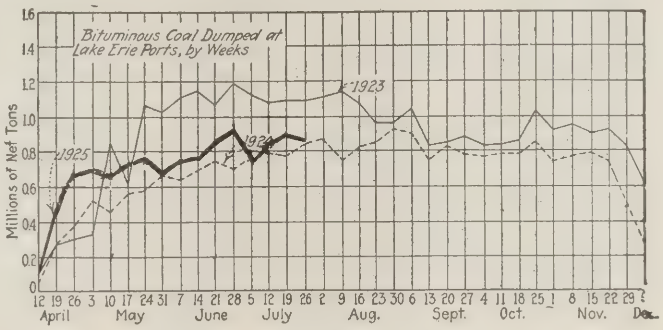
The Midwest market exhibits further strength due partly to increasing retail demand for domestic sizes based on strike talk. Steam coals are quiet, demand being spotty. In Kentucky increasing industrial and domestic demand has brought about a generally improved spirit. Screenings prices in western Kentucky have weakened further, however. The situation at the head of the lakes is disappointing—some inquiries are afloat, but orders are scarce. The docks are heavily stocked, but prices hold firm. Conditions have changed little during the week in Utah, Colorado, Kansas and the Southwest.

Outwardly the Cincinnati market is calm with virtually no change in prices, but a report that part of a big lake contract went to Kentucky and West Virginia producers at 10c. to 15c. under the spot market served to dampen optimism and the hope of better prices. A slight upward tendency is in evidence in southern and eastern Ohio. Apathy still reigns in the Pittsburgh market. The recent betterment in New England, New York and the other Eastern markets continues.

### Hard-Coal Trade Gains Strength

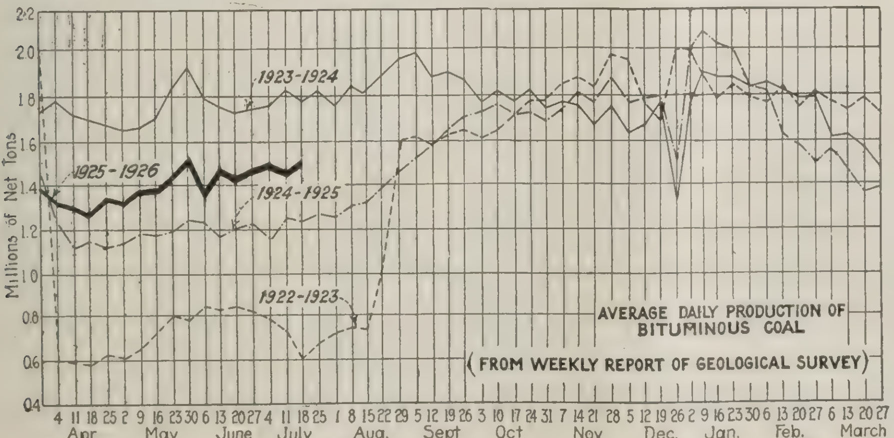
Increasing strength characterizes the anthracite market, stimulated by news of the wage negotiations and the possibility of a suspension. Better demand has stiffened independent prices, but in no case has the advance been extreme. Stove and egg are most active, pea also is moving well, but chestnut is rather slow. Steam sizes likewise are in better demand, buckwheat being perhaps the least active.

Bituminous coal output in the week ended July 18 is estimated by the Geological Survey at 8,972,000 net tons, compared with 8,640,000 tons in the previous week, as shown by revised figures. Anthracite production in the week ended July 18 totaled 1,985,000 net tons, compared with 1,854,000 tons in the preceding week



*Coal Age* Index of spot prices of bituminous coal made a fractional advance during the past week, standing on July 27 at slightly above 160, the corresponding price being $1.94.

Dumpings at Lake Erie ports during the week ended July 26, according to the Ore & Coal Exchange, were: Cargo, 798,567 net tons; steamship fuel, 47,139 tons—a total of 845,706 net tons, compared with 881,383 tons in the preceding week. Hampton Roads dumpings in the week ended July 23 totaled 408,064 net tons, compared with 351,037 tons in the previous week.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| July 4 | 5,913,000 | 7,351,000 |
| July 11 (*a*) | 7,742,000 | 8,640,000 |
| July 18 (*b*) | 7,644,000 | 8,972,000 |
| Daily average | 1,274,000 | 1,495,000 |
| Cal. yr. to date | 251,071,000 | 256,743,000 |
| Daily av. to date (*c*) | 1,495,000 | 1,526,000 |
| **ANTHRACITE** | | |
| July 4 | 1,296,000 | 1,514,000 |
| July 11 | 1,871,000 | 1,854,000 |
| July 18 | 1,840,000 | 1,985,000 |
| Cal. yr. to date (*c*) | 50,152,000 | 49,788,000 |
| **COKE** | | |
| July 11 (*a*) | 106,000 | 129,000 |
| July 18 (*b*) | 103,000 | 126,000 |
| Cal. yr. to date (*c*) | 6,307,000 | 5,606,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Market Gains Strength

The Chicago market is a shade stronger than it was last week. Operators in Illinois as well as in Indiana report a fair volume of business booked from their retail trade. This betterment in current demand is directly due to strike talk, a little demand from the farmers for threshing coal and a number of small orders from school boards for winter coal. Retail dealers are a little more optimistic with this awakening of interest.

Mail-order competition has not cut into the retail trade to any great extent as yet. One of the progressive Illinois operators has circularized his retail dealers with printed matter similar to the mail-order "ads" and has quoted prices which will enable them to compete with the mail-order firms at their own game.

The steam market is quiet, demand being spotty. Some operators are able to maintain prices on screenings and are refraining from forcing sales. Not much steam is being shipped to Chicago on consignment.

Anthracite is moving in good volume, companies reporting heavy bookings for early August shipment. Smokeless coals are strong at $3 for prepared sizes and $2 for mine-run. Some operators have even withdrawn prices until further notice and are taking business only on the basis of quotations current at the time of shipment. Orders for Kentucky block coal eased a little last week, and prices for 4 in. now vary from $2.30 to $2.65, as against a minimum of $2.45 last week.

Domestic business shows considerable improvement in the Williamson and Franklin County fields in some spots and at some mines. This will likely continue to show improvement from now on, but steam is not as active as it has been. Railroad tonnage is fairly good at both shaft and strip mines. Shaft mines are getting two and three days a week, with the usual exception, while strip mines are working practically full time. Some mines continue to crush coal. Prices are unchanged.

In the Duquoin field there is practically no change since last week. In the Mt. Olive field conditions are unusually quiet, the only activity being a little steam, and the mines are still crushing for their steam contracts. In the Standard field coal is selling at about cost. There are no improvements here and conditions are unusually bad. Even steam sizes are lagging and all mines have "no bill" coal on track. Working time is from one to two and three days a week, depending on railroad and steam contracts. Railroad tonnage is light. No change in prices.

At St. Louis there is a little summer activity in the storage of coal, principally of high-grade Illinois. Anthracite, smokeless and coke continue slow and there is very little demand for Mt. Olive, but some summer apartment

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | July 28 1924 | July 13 1925 | July 20 1925 | July 27 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.85 | $2.85 | $2.85 | $2.75@$3.00 |
| Smokeless mine run | Columbus | 2.10 | 1.85 | 1.85 | 1.75@ 2.00 |
| Smokeless screenings | Columbus | 1.30 | 1.30 | 1.35 | 1.25@ 1.50 |
| Smokeless lump | Chicago | 3.85 | 3.10 | 3.10 | 3.00@ 3.25 |
| Smokeless mine run | Chicago | 1.85 | 1.85 | 1.90 | **1.90@ 2.10** |
| Smokeless lump | Cincinnati | 3.85 | 2.85 | 2.90 | *2.75@ 3.00* |
| Smokeless mine run | Cincinnati | 1.85 | 2.00 | 2.00 | 2.00 |
| Smokeless screenings | Cincinnati | 1.35 | 1.25 | 1.20 | **1.30@ 1.35** |
| *Smokeless mine run | Boston | 4.30 | 4.25 | 4.30 | **4.30@ 4.40** |
| Clearfield mine run | Boston | 1.85 | 1.80 | 1.75 | **1.65@ 1.95** |
| Cambria mine run | Boston | 2.30 | 2.00 | 1.95 | *1.80@ 2.10* |
| Somerset mine run | Boston | 2.00 | 1.85 | 1.85 | *1.70@ 2.00* |
| Pool 1 (Navy Standard) | New York | 2.70 | 2.55 | 2.55 | 2.40@ 2.70 |
| Pool 1 (Navy Standard) | Philadelphia | 2.80 | 2.60 | 2.60 | 2.45@ 2.75 |
| Pool 1 (Navy Standard) | Baltimore | ..... | 1.85 | 1.85 | 1.80@ 1.95 |
| Pool 9 (Super. Low Vol.) | New York | 2.05 | 2.00 | 1.95 | 1.80@ 2.15 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.00 | 2.00 | 1.85@ 2.20 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.95 | 1.75 | 1.75 | 1.65@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.80 | 1.80 | 1.80 | *1.70@ 1.90* |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.70 | 1.70 | 1.60@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.70 | 1.60 | 1.60 | 1.55@ 1.65 |
| Pool 11 (Low Vol.) | New York | 1.55 | 1.55 | 1.55 | 1.50@ 1.65 |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.40 | 1.40 | 1.35@ 1.45 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.50 | 1.50 | 1.40@ 1.65 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.50 | 1.50 | 1.45@ 1.60 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.35 | 1.35 | 1.30@ 1.45 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.40 | 2.40 | 2.30@ 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.20 | 1.50 | 1.50 | 1.40@ 1.60 |
| Kanawha lump | Columbus | 2.10 | 1.85 | 1.85 | **1.90@ 2.15** |
| Kanawha mine run | Columbus | 1.45 | 1.40 | 1.40 | 1.35@ 1.50 |
| Kanawha screenings | Columbus | 1.10 | 1.15 | 1.15 | 1.10@ 1.25 |
| W. Va. lump | Cincinnati | 2.10 | 2.25 | 2.25 | 2.00@ 2.50 |
| W. Va. gas mine run | Cincinnati | 1.40 | 1.40 | 1.45 | *1.35@ 1.50* |
| W. Va. steam mine run | Cincinnati | 1.40 | 1.30 | 1.30 | 1.25@ 1.40 |
| W. Va. screenings | Cincinnati | .85 | 1.10 | 1.10 | **1.10@ 1.25** |
| Hocking lump | Columbus | 2.45 | 2.15 | 2.15 | 2.00@ 2.30 |
| Hocking mine run | Columbus | 1.70 | 1.50 | 1.50 | **1.45@ 1.70** |
| Hocking screenings | Columbus | 1.15 | 1.30 | 1.30 | **1.25@ 1.45** |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.20 | 2.20 | **1.90@ 2.60** |
| Pitts. No. 8 mine run | Cleveland | 1.35 | 1.85 | 1.85 | **1.85@ 1.95** |
| Pitts. No. 8 screenings | Cleveland | 1.05 | 1.45 | 1.50 | *1.35@ 1.45* |

| Midwest | Market Quoted | July 28 1924 | July 13 1925 | July 20 1925 | July 27 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $2.85 | $2.60 | $2.60 | $2.50@$2.75 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.70 | 2.00 | 2.00 | 1.75@ 2.25 |
| Central Ill. lump | Chicago | 2.50 | 2.35 | 2.35 | 2.25@ 2.50 |
| Central Ill. mine run | Chicago | 2.10 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central Ill. screenings | Chicago | 1.60 | 1.75 | 1.70 | 1.50@ 1.90 |
| Ind. 4th Vein lump | Chicago | 2.60 | 2.60 | 2.60 | 2.50@ 2.75 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.70 | 1.80 | 1.80 | 1.65@ 2.00 |
| Ind. 5th Vein lump | Chicago | 2.35 | 2.25 | 2.25 | 2.15@ 2.40 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.55 | 1.50 | 1.50 | 1.40@ 1.60 |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.25 | 2.25 | 2.25 |
| Mt. Olive screenings | St. Louis | 2.00 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.15 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.45 | 1.50 | 1.30 | 1.25@ 1.40 |
| West Ky. block‡ | Louisville | 2.10 | 1.40 | 1.55 | **1.60@ 1.75** |
| West Ky. mine run | Louisville | 1.60 | 1.25 | 1.15 | 1.10@ 1.25 |
| West Ky. screenings | Louisville | 1.15 | 1.00 | .85 | .80@ .95 |
| West Ky. block‡ | Chicago | 2.05 | 2.00 | 1.90 | 1.60@ 2.25 |
| West Ky. mine run | Chicago | 1.60 | 1.35 | 1.35 | 1.15@ 1.60 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.20 | 2.00 | 2.00 | *1.75@ 2.25* |
| Big Seam mine run | Birmingham | 1.75 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.00 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block‡ | Chicago | 2.10 | 2.45 | 2.55 | 2.45@ 2.65 |
| S. E. Ky. mine run | Chicago | 1.50 | 1.70 | 1.70 | 1.60@ 1.85 |
| S. E. Ky. block‡ | Louisville | 2.10 | 2.25 | 2.25 | 2.00@ 2.50 |
| S. E. Ky. mine run | Louisville | 1.55 | 1.40 | 1.55 | 1.35@ 1.75 |
| S. E. Ky. screenings | Louisville | .95 | 1.05 | 1.10 | 1.00@ 1.25 |
| S. E. Ky. block‡ | Cincinnati | 2.25 | 2.35 | 2.25 | **2.25@ 2.50** |
| S. E. Ky. mine run | Cincinnati | 1.50 | 1.35 | 1.40 | **1.25@ 1.65** |
| S. E. Ky. screenings | Cincinnati | .90 | 1.10 | 1.10 | 1.00@ 1.25 |
| Kansas lump | Kansas City | 4.50 | 4.00 | 4.00 | 4.00 |
| Kansas mine run | Kansas City | 3.50 | 3.00 | 3.00 | 3.00 |
| Kansas screenings | Kansas City | 2.00 | 2.50 | 2.50 | 2.50 |

* Gross tons, f.o.b. vessel, Hampton Roads.

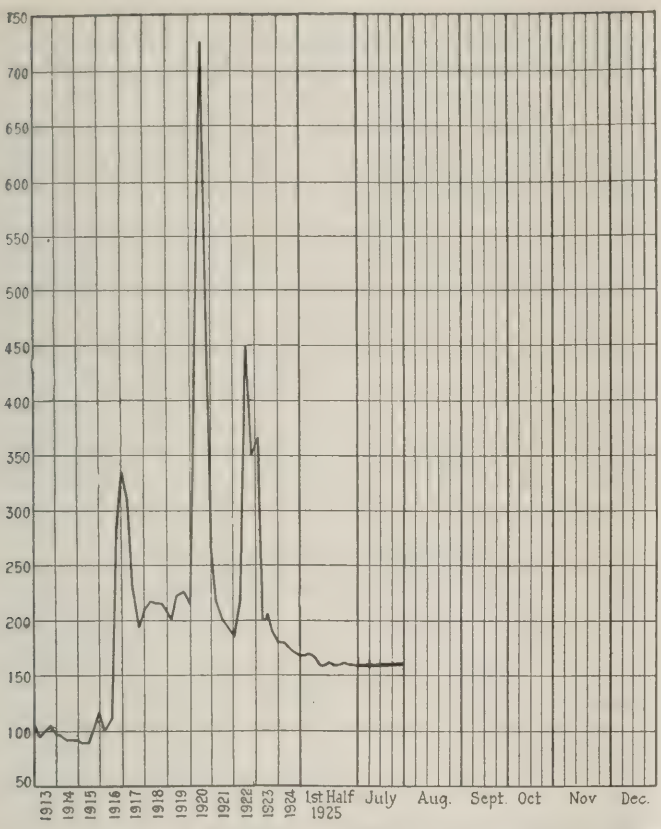
† Advances over previous week shown in **heavy type**; declines in *italics*.

‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | July 28, 1924 | | July 20, 1925 | | July 27, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ............ | $8.00@$8.95 | ............ | $8.15@$8.80 | ............ | $8.15@$8.80 |
| Broken | Philadelphia | 2.39 | ............ | 8.80@ 8.95 | ............ | 8.70 | ............ | 8.70 |
| Egg | New York | 2.34 | $8.50@$8.75 | 8.55@ 8.95 | $8.75@$9.00 | 8.55@ 8.80 | **$8.75@$9.10** | 8.55@ 8.80 |
| Egg | Philadelphia | 2.39 | 8.90@ 9.60 | 8.90@ 8.95 | 8.80@ 9.40 | 8.60@ 8.80 | 8.80@ 9.40 | 8.60@ 8.80 |
| Egg | Chicago* | 5.06 | 7.99@ 8.10 | 7.94@ 8.00 | 7.86@ 8.50 | 7.54@ 8.28 | **7.86@ 8.60** | 7.54@ 8.28 |
| Stove | New York | 2.34 | 9.00@ 9.25 | 8.55@ 9.20 | 9.10@ 9.40 | 9.05@ 9.30 | **9.25@ 9.75** | 9.05@ 9.30 |
| Stove | Philadelphia | 2.39 | 9.25@ 9.90 | 8.95@ 9.10 | 9.40@ 9.75 | 9.05@ 9.20 | 9.40@ 9.75 | 9.05@ 9.20 |
| Stove | Chicago* | 5.06 | 8.30@ 8.40 | 8.24@ 8.34 | 8.22@ 8.70 | 8.02@ 8.20 | 8.22@ 8.70 | **8.32@ 8.80** |
| Chestnut | New York | 2.34 | 8.50@ 8.75 | 8.55@ 9.05 | 8.75@ 9.00 | 8.55@ 8.80 | **8.75@ 9.10** | 8.55@ 8.80 |
| Chestnut | Philadelphia | 2.39 | 8.75@ 9.70 | 8.90@ 8.95 | 8.80@ 9.65 | 8.70@ 8.80 | 8.80@ 9.65 | 8.70@ 8.80 |
| Chestnut | Chicago* | 5.06 | 8.08@ 8.23 | 8.18@ 8.24 | 8.14@ 8.35 | 7.79@ 8.10 | **8.24@ 8.45** | 7.79@ 8.10 |
| Pea | New York | 2.22 | 4.50@ 5.25 | 5.50@ 6.00 | 5.25@ 5.50 | 5.00@ 5.80 | 5.25@ 5.50 | 5.00@ 5.80 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.57@ 6.00 | 5.50@ 5.75 | 5.00@ 5.40 | 5.50@ 5.75 | 5.00@ 5.40 |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 5.91 | 4.91@ 5.36 | 4.69@ 5.00 | 4.91@ 5.36 | **4.91@ 5.36** |
| Buckwheat No. 1 | New York | 2.22 | 1.75@ 2.50 | 3.00@ 3.15 | 2.00@ 2.50 | 2.50 | 2.00@ 2.50 | 2.50 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | 2.15@ 2.75 | 2.50 | 2.15@ 2.75 | 2.50 |
| Rice | New York | 2.22 | 1.50@ 2.15 | 2.00@ 2.25 | 1.90@ 2.00 | 2.00 | 1.90@ 2.00 | 2.00 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | 1.85@ 2.00 | 2.00 | 1.85@ 2.00 | 2.00 |
| Barley | New York | 2.22 | 1.00@ 1.50 | 1.50 | 1.40@ 1.50 | 1.50 | **1.35@ 1.60** | **1.50@ 1.60** |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | 1.40@ 1.50 | 1.50 | 1.40@ 1.50 | 1.50 |
| Birdseye | New York | 2.22 | ............ | 1.60 | 1.40@ 1.60 | 1.60 | 1.40@ 1.60 | 1.60 |

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | July 27 | July 20 | July 13 | July 28 |
| Index | 160 | 160 | 160 | 163 |
| Weighted average price | $1.94 | $1.93 | $1.93 | $1.98 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

and school Standard coal is being put in. Local wagonload steam is unusually easy and carload is slowing up. Country steam is quiet and country domestic begins to show activity on different grades in different sections. A good tonnage of western Kentucky seems to be moving into the St. Louis territory, while in Illinois, eastern Kentucky seems to be moving fairly well.

### Outlook Brighter in Kentucky

The Kentucky situation is gradually improving and the outlook is much better than it has been, more confidence being shown and a generally improved spirit in the trade. Industrial, utility and railroad consumption continue active. Movement of fuel to retailers and domestic consumers also is more active in many sections. Lake movement has been very good, and with $1 the minimum on screenings, block selling up to $2.50 and special coals higher, the field on a non-union production basis eastern Kentucky has a very fair business.

Western Kentucky has no accumulation of "no bills" but operators reduced screenings prices and are now getting 80@95c., when they might just as well be getting $1 a ton or better. Block coal, which was at a maximum of $1.50 in early July, has advanced to $1.85 as a maximum and $1.60 as low. Egg and lump are $1.50@$1.60. Mine-run is very low at $1.10@$1.25.

Generally speaking, however, prices are better, and movement much better. Reports are being received from eastern Kentucky stating that some mines which have been down on account of poor prices and weak markets have secured new business at better prices and have resumed operations. In western Kentucky some mines are now up to four days a week or better, whereas not long ago not many mines were working more than two days, except where large companies closed down some of their mines and ran the remaining ones full time.

### Northwest Finds Orders Scarce

Trade remains slow at Duluth, anthracite being practically at a standstill and bituminous showing signs of life as far as inquiries are concerned, but with a deplorable lack of orders.

Strike threats do not worry anyone in either hard or soft coal. The docks are so full that a stopping of shipments might come as a relief.

Dock men evidently expect to sell all the coal that they bring up as prices are holding firm throughout the lists in both hard and soft. In the recent opening of bids for school coal Youghiogheny screenings were bid at $5.10 delivered, which is $1.10 above dock; run of pile was offered at $6.25, anthracite dust at $4.85 and Pocahontas at about the dock price plus cartage. All the dock companies bid the same and the business will be divided among them. Ford bid 20 to 30c. higher than the docks.

Outside towns are expected to ask bids soon for winter coal.

It is reported that 15,000 tons of bituminous coal a day have been landed during the past month at Two Harbors by the Duluth & Iron Range Ry. It is thought that the railroad will sell this coal to employees, use some on the railroad, and consume the balance at the mines on the iron range.

Last week forty-eight cargoes of coal were brought into the port, of which nine were hard coal, and thirteen were reported on the way from lower lake ports—all bituminous. The anthracite situation is getting serious, with storage space becoming limited. It is reported that two docks had to pay demurrage charges on anthracite shipments last week because unable to handle ships when they arrived.

It is estimated that there are 575,000 tons of hard coal on the docks and 3,700,000 tons of soft coal. This is a large stock for this time of the year.

The coal trade in Milwaukee apparently is reaching the end of the annual period of summer dullness. Dock managers report a stronger and steadier outflow of coal to consumers and are looking forward to better demand between now and the winter of 1925-26. Thus far Milwaukee has received more coal by cargo than during the season of 1924. Receipts up to and including July 23 this year total 1,453,469 tons—372,855 tons of anthracite and 1,080,614 tons of bituminous coal. Last year the receipts to the same date totaled 1,191,556 tons—347,238 tons of anthracite and 844,318 tons of bituminous coal.

### Southwest Sticks to Old Groove

Conditions have changed but little in the Southwest since last week. The threshing demand, a small factor at best, is about ended, but dealers still are buying in small quantities. Kansas production is about as it has been for the last two months. Production in the Henryetta (Okla.) field is more or less stable under the 1917 scale and under protection of the national guard. The McAlester (Okla.) district is more free from opposition to the lower scale. In the last two weeks two Puterbaugh mines have been opened in Arkansas under the 1917 scale, one near Greenwood with forty-eight men, and one near Russelville, with twenty.

Colorado reports a slight improvement in the orders for domestic lump and nut coal, but no change in steam coal. Operators expect to increase production the latter part of this month in anticipation of the cut in freight rates to Missouri River territory. Aug. 1 prices on Walsenburg-Canon City coal are: Domestic lump, $5.25; nut, $4.50; washed pea, $3; semi-coking 8-in. lump, $4.85; nut, $3.75; pea, $3; Segundo Salamander coke, $7.50; Segundo nut, $6; Crested Butte-Elk Mountain Nos. 1 and 2 (furnace size) anthracite, $7; Nos. 3 and 5 (base burner size), $7.50; Horace anthracite Nos. 1 and 2 (furnace size), $8.75.

Utah dealers report storage orders as coming in faster than they were, but they say the storage business is below normal for the time of year. Furnace lump is in greatest demand for storage, with nut leading for immediate consumption. A heat wave such as Utah has rarely seen before has hurt the trade. One of the largest producers with headquarters in Salt Lake City reports its best business coming from California now. There seems little doubt that the price of coal will be higher in Salt Lake City this fall.

The best industrial buyers now are the metal mines and smelters and the cement plants, and they are taking slack, dust and coke. Railroads seem to be buying a little, but only for immediate consumption. Here and there an order is being received from the sugar companies for storage purposes. Although the sugar beet acreage this year is well behind that of 1924, present crop estimates place the tonnage as considerably larger than a year ago and the sugar companies will buy more coal than was generally anticipated.

A few coal contracts are being advertised, but there is no big contract business at this time.

### Cincinnati Outwardly Calm

Cincinnati was surprised to hear that part of a large contract for the head of the lakes was alloted to Kentucky and West Virginia producers at from 10c. to 15c. under the spot market for lump, egg and 2-in. This tended to put a damper on optimistic talk and to the hopeful price current that had been backtracking the anthracite wage conference.

High-volatile people had a good place to fall back on in stiffer prices on slack and mine-run and a better situation at tide, which allowed them to put coal there instead of forcing the inland market. In spite of seeming opposing forces, the market maintains outward calm. There has been virtually no change in prices.

The smokeless market still seems to be feeling its way. With August at hand standard producers say they are inclined to hold the figures "as they stand" with a definite demand for $3 on lump and egg. Other companies that have been quoting $2.75 on egg and $3 on lump and making the spot on the latter somewhere between, say that they see no cause to change their attitude. As with domestic lump the urge of the buyer is lacking. There is a disposition to "play the market" with the supposition that retailers and country dealers will come with a rush, and then they will have to pay for the "spot" coal that is available.

Several local retailers have advanced the price on smokeless lump to $8 for August delivery though the general price runs at $7.50; mine-run is quoted at $5.75@$6; bituminous lump $6 and slack $4.25@$4.50.

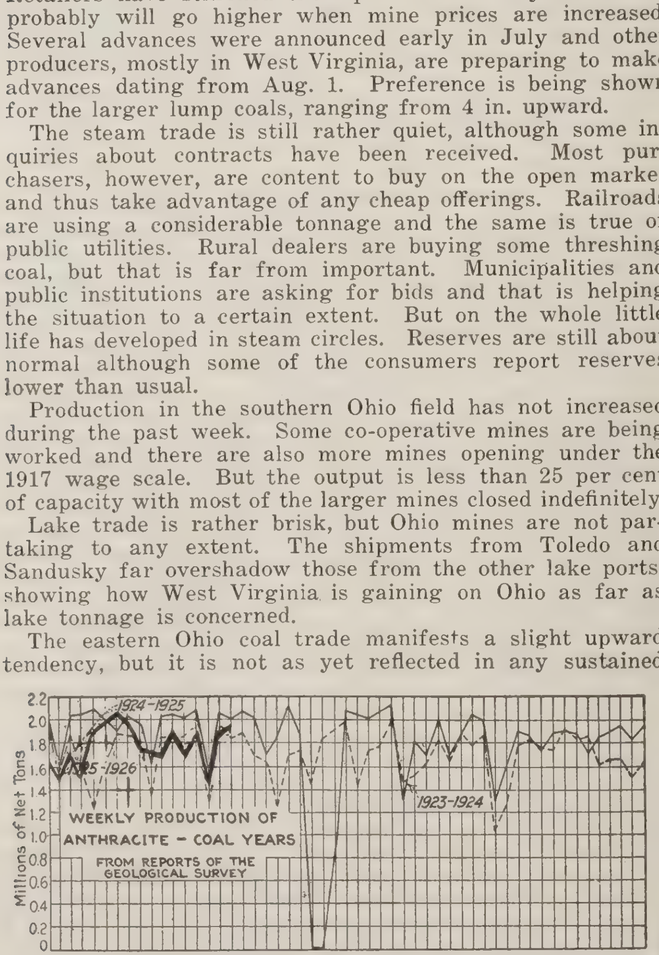
A slightly better feeling in domestic circles in Columbus has developed as a result of better buying of prepared sizes. Retailers have stiffened their prices materially and levels probably will go higher when mine prices are increased. Several advances were announced early in July and other producers, mostly in West Virginia, are preparing to make advances dating from Aug. 1. Preference is being shown for the larger lump coals, ranging from 4 in. upward.

The steam trade is still rather quiet, although some inquiries about contracts have been received. Most purchasers, however, are content to buy on the open market and thus take advantage of any cheap offerings. Railroads are using a considerable tonnage and the same is true of public utilities. Rural dealers are buying some threshing coal, but that is far from important. Municipalities and public institutions are asking for bids and that is helping the situation to a certain extent. But on the whole little life has developed in steam circles. Reserves are still about normal although some of the consumers report reserves lower than usual.

Production in the southern Ohio field has not increased during the past week. Some co-operative mines are being worked and there are also more mines opening under the 1917 wage scale. But the output is less than 25 per cent of capacity with most of the larger mines closed indefinitely.

Lake trade is rather brisk, but Ohio mines are not partaking to any extent. The shipments from Toledo and Sandusky far overshadow those from the other lake ports, showing how West Virginia is gaining on Ohio as far as lake tonnage is concerned.

The eastern Ohio coal trade manifests a slight upward tendency, but it is not as yet reflected in any sustained impetus to mining operations. Steam demand is a trifle better and retailers are beginning to stock for late summer and fall trade, but the latter are laying by principally smokeless fuels from West Virginia and eastern Kentucky. Steam buyers are buying pretty much for current needs only, although some of the larger consumers are said to be giving serious consideration to accumulating reserves soon.



The sharp demand for slack and screenings has subsided somewhat, though the supply is light and only small quantities of these grades are being offered. The spot price on slack and nut-and-slack has weakened 5 to 10c. per ton as compared with a week ago. Other spot prices show little change, but the trade confidently expects increased activity and possibly better prices in another thirty days.

Output in eastern Ohio during the week ending July 18 was 215,000 tons, or approximately 30 per cent of potential capacity. This was a decline of 11,000 tons from the previous week.

Another hope of the Ohio coal trade has been blasted, with the announcement that the Interstate Commerce Commission has denied any relief whatsoever in the freight rates from the mines to the docks on lake cargo fuel.

### Pittsburgh Expects Upturn

The Pittsburgh market continues practically as dull as it has been right along. Prices are unchanged, even in the case of slack. Transactions are generally between consumers and regular sources of supply, inquiries not getting into the open market to any extent. It is predicted in conservative quarters that there will be a decided improvement in demand soon, as stocks are lower than a year ago, when an upturn took place. The majority of mines are idle but most of those working are on part time, and until increasing demand gave these mines full employment prices would hardly advance. Afterward, some increase probably would be requisite to induce idle mines to start.

At Buffalo the coal trade drags along. Now and then a shipper shows a good list of orders, but even he finds trade dropping off again after a little. Several new concerns, mostly organized by members of the trade left flat by retiring agencies, are getting complimentary orders, which make them feel pleasant for the time, but they may find it hard to keep up that sort of trade very long.

The slack market is a little better. Gas slack is a few cents higher, but the demand is not much, if any, larger.

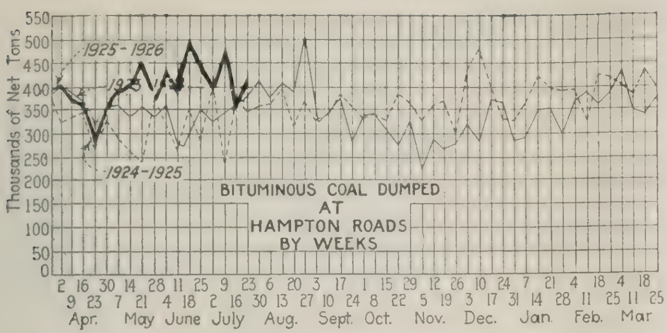
Quotations are $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run and $1.25@$1.40 for slack; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, and $1.30@$1.50 for slack; $1.75@$2 for Allegheny Valley mine-run. Cambria County smokeless sells for $6 at the curb for domestic use.

### New England in Better Shape

The New England trade feels that production is now under better control and that soft spots are gradually being ironed out. It is clear that much less coal is accumulating at the Hampton Roads piers and it is a fact that receipts here are being restricted to tonnages well within the ability of the local market to absorb. Quotations are evenly on a firmer basis and the market seems definitely in better shape.

At Hampton Roads there is apparently no chance now of buying high-grade coal at less than $4.25 per gross ton f.o.b. vessel, and several agencies are holding their output firmly at $4.35@$4.40. Slack is now commanding more than $4 at the same point, although as yet there is little buying at any such figure. There are hopes of increased demand offshore, but no considerable tonnage has yet materialized. The bulk of the coal dumped continues to be applied on contracts, and there are few spot sales. Undeniably there is a better tone to the whole Pocahontas and New River industry, but the situation still calls for careful handling in that the possibility of overproduction is still threatening.

At Mystic Wharf, Boston, there is a disposition to get $5.40@$5.50 on cars both for spot coal and for deliveries over 30 to 60 days, but it is quite likely this will have to be modified if the rehandlers are to attract current business. Sales have been made at $5.35@$5.40, but for small tonnages; in no case have we heard of lots being placed that would exceed 1,000 tons. At Providence the average of the market is perhaps 5c. less than at Boston, while at Portland it is 10@15c. more. In none of this territory is there any rush of buyers to take on coal.



Only a few shippers of Pennsylvania coals all-rail are in position to report better business. The situation in that respect drags along with no special improvement. Mines that are in operation are still making a few sales on a minimum basis, with no very favorable prospect for August.

### Brighter Outlook at New York

Better business is expected next month in the soft-coal industry at New York. There is considerable more optimism at the prospect and exporters of American coals see possibilities of more orders and better prices in the British situation. In addition inquiries concerning screened bituminous coal and coke have added to the better feeling.

Spot orders are freer but prices remain on last week's level. Some operators producing the better coals report their output sold up for the next couple of weeks and are seeking higher prices for future deliveries. Replenishing of reserve stocks is expected to begin soon although at present consumers do not appear anxious about the matter.

At Philadelphia there are faint signs of improvement, shippers reporting that they are moving a little more coal. Though they are unable to get better prices, the increase in volume is putting them in better financial condition.

Spot prices are somewhat firmer. Shippers have lightened the pressure on consumers to take contracts, being disposed to hold more of their production for the spot market if trouble does develop.

At tide there has been a slight pick-up in the loading of pier coal, although there is not the least sign of permanency to the improvement.

Real optimists in the soft-coal trade are rare at Baltimore, though in the last week an increasing line of inquiry has been developing from former regular customers on the other side of the water and distributors of coal who for the most part use English fuels but are looking for possible trouble. One effect of this situation has been an increase in vessel rates. The threatened strike in the union soft-coal fields of this country, complicated by the possibility of an anthracite strike, has not greatly disturbed the soft coal trade. The price list for both gas and steam coals continues about the same as for the past several weeks. A decided improvement in the export situation has been noted.

Steam coal is moving fairly well at Birmingham for this season, though not a great amount of spot business is being taken on. Buying in the open market is scattering and confined to individual orders for a few cars here and there for current use, but this business in connection with contract requirements is keeping some of the mines on practically full time.

The domestic market is extremely dull, lump and other domestic sizes being very hard to move. An unusual number of domestic contracts have been canceled altogether and deliveries on a large number are being severely restricted. Retailers have ample stocks for some time to come. Spot buying of domestic fuel is practically at a standstill—or rather has never assumed any worth-while proportions.

Quotable prices are without change over a week ago, and although there is scant demand for domestic fuel the better grades are maintaining a stable schedule. Big Seam lump and the like is quoted $1.75@$2.25 per ton mines, with little call. Output for the week of July 11 was 358,000 tons, an increase of 42,000 tons over the same week in 1924.

### Hard-Coal Market Improving

Further improvement is noticeable in the anthracite trade at New York. Demand as well as prices for independent product are better and a brisk market is expected. Inquiries from New England were frequent last week and some orders resulted.

The situation, however, is not as lively as dealers would like it. Egg and stove are the most active sizes, with chestnut dragging somewhat but not sufficiently to cause any serious trouble. Some operators are said to have asked as much as $10 for stove coal when taken alone, but no sales were reported. Pea is moving well and is short with some producers for line trade. The smaller coals are in better condition. One of the large companies advanced its price for barley 10c. to $1.60 per ton for spot business.

A cargo or two of Welsh anthracite is expected in this harbor soon at a cost said to be around $10 c.i.f. It is estimated it will cost about 55c. more to put this coal in small boats alongside the piers.

The trade in Philadelphia is holding its own, and a fairly steady run of orders is being received by retailers. As all of them are intent upon keeping stocks up the shippers also are feeling better about the situation. The improvement is entirely due to the strike threat. Distant markets also seem to be awakening to the need of coal. This is particularly true of New England and New York State. Due to this a few independents have added 25c. to 50c. to their prices for shipment to that market.

Steam sizes are somewhat stronger, as the companies are finding a market for more of their tonnage, and the independents are moving theirs with no very deep cuts, although a considerable tonnage is still selling off circular.

The Baltimore public and dealers refuse to get excited over strike talk. Though many cellars are not fully stocked and some have not laid in any stock, nevertheless a fair proportion of coal has already been delivered. In addition dealers' yards have fair stocks on hand, and should there be a strike the first emergency conditions could be cared for. While nothing definite has been decided as yet, retail prices will undoubtedly advance Aug. 1.

Demand for hard coal at Buffalo continues pretty good, though there is no rush, as the public is divided on the question of a strike. In the event of a suspension it is expected that there will be an increase in the output of soft coal, especially smokeless, but that is likely to hurt the coal trade generally.

The price of domestic coke to wholesalers has already stiffened a little and it is said that an advance to consumers will be made on the day the miners go out, no matter what the plan is.

Lake shipments are still light, being for the week 56,800 tons, of which 18,500 tons cleared for Duluth and Superior, 23,200 tons for Milwaukee, 8,700 tons for Green Bay, 3,000 tons for Marinette and 1,500 tons for the Sault. Rates are unchanged.

### Connellsville Coke Market Slightly Firmer

The spot market on furnace coke at Connellsville advanced last week, various small lot sales and one 25-car sale having been made at $2.90 compared with a quotable market since the middle of June of $2.75@$2.85. One rather small-sized contract to the end of the year has been made at a higher price for the period after Oct. 1 than for the period before. Otherwise the contract market has remained dead. There is no likelihood of anything occurring until the merchant pig-iron trade improves and there is no prospect of that in the near future. Few furnaces are running but there are stocks from which shipments are being made, the stocks decreasing but slowly.

Spot foundry coke is a trifle more active than thirty days ago but is still relatively dull. The movement has been restricted for many weeks by a considerable tonnage of 48-hour coke, partly selected, being sold for foundry use, this coke having lately been going at as low as $3.10 or $3.15. Standard foundry coke, which means 72-hour selected, remains quotable at $3.75@$4.25, where it has stood since early May. Sales at $4.25 have been gradually diminishing and now are only occasional.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended July 11, 1925 | 982,609 | 160,444 |
| Previous week | 864,452 | 134,030 |
| Week ended July 12, 1924 | 909,983 | 146,179 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| July 14, 1925 | 309,560 | 111,449 | ...... | ...... |
| July 7, 1925 | 311,572 | 112,256 | ...... | ...... |
| July 14, 1924 | 355,720 | 169,697 | ...... | ...... |

# Foreign Market And Export News

## Uncertainty of Supply Has No Effect On British Demand or Prices

The coal market has not been materially affected by the past week's events. Some concern is shown by inland consumers, who, solely dependent on home supply, are taking in extra stock. On the export side the only increase in business is on coaling depot account, where bookings are better. The aggregate volume of demand, however, is poor and insufficient to influence prices. All transactions are for this month's loading, both buyers and sellers showing no desire to enter into business for August in view of the uncertainty of supply. The Continental demand continues restricted and despite the unsettled outlook in United States coal fields, there is no extra demand from South America.

At Newcastle there has been no change in the coal position for Northumberland and Durham during the past week except in the raising of quotations by sellers for July fuel. It has not had any effect on buyers one way or another. The possibility of a stoppage in the local coal fields by the end of the month has not sent them hurrying to buy, as is usually the case when such a crisis arises. Meanwhile collieries continue to close, though some are on a day to day notice and others on notice are carrying out negotiations with a view to local settlements.

Output by British collieries in the week ended July 11, a cable to *Coal Age* states, totaled 4,820,000 tons, compared with 4,675,000 tons in the preceding week.

### Unrelieved Dullness Pervades French Coal Market

The French coal market is extremely calm and nothing points to any improvement in the near future. The North and Pas-de-Calais collieries maintain price schedules at the July 1 level, there having been no official change in over a year and a half. Everyone knows, however, that in slack periods it is easy to obtain concessions. At the national congress recently held at Carmaux the men's delegates for all the basins adopted a motion that if the employers reduced wages—indeed if the last measures relative to them were not cancelled—a strike would be decided upon by the whole corporation. But in spite of this threat the collieries appear quite assured, particularly in the North and Pas-de-Calais.

The British situation is being watched in France with much anxiety. A number of importers of British coals are of the opinion that a strike cannot be averted.

From June 1 to 20 the O.R.C.A. received from the Ruhr 351,300 tons of indemnity fuels, including 158,900 tons of coal, 176,300 tons of coke and 16,100 tons of lignite briquets.

During the first eight days of July the O.R.C.A. received from the Ruhr 55,700 tons of coke, a daily average of 6,960 tons. Receipts for June totaled 215,844 tons, an average of 7,000 tons per day.

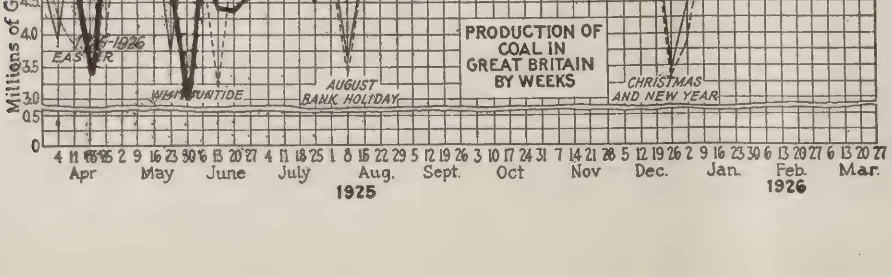
### Strike Upsets Belgian Market

The general situation in the Belgian coal market is worse, owing to the strike in the Charleroi Basin. Conditions are particularly bad in the Borinage, the Center and the Charleroi regions. More men have been dismissed and some more pits may be closed down. The rise of exchange has paralyzed imports, except with regard to France. On Aug. 1 the salary question is to be settled.

### Hampton Roads Market Firmer On Expectation of Strike

Little change was apparent last week in the market at Hampton Roads, although there were appearances of a stronger market soon in view of the likelihood of a hard-coal strike. Prices remained practically unchanged for small lots for immediate dumping, although large lots for future dumping were far above the market.

A number of inquiries for foreign coal shipments were reported by shippers, though no large sales were made. Foreign business is expected to boom in case a strike of miners takes place. Supplies on hand were slightly below normal at the piers, but dumpings for the month were normal, if not better.



### Export Clearances, Week Ended July 25, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Newfoundland: | |
| Nor. Str. Tosto, for Botwoodville | 1,988 |
| Nor. Str. Thomas Haaland, for Botwoodville | 4,400 |
| Nor. Str. Certo, for St. Johns | 3,278 |
| For Italy: | |
| Ital. Str. Valsalice, for Bagnoli | 5,147 |
| Ital. Str. Villa Ada, for Genoa | 7,124 |
| For Nova Scotia: | |
| Nor. Str. Sigdal, for Halifax | 1,140 |
| Amer. Schr. Wellington, for Yarmouth | 1,510 |
| For Brazil: | |
| Br. Str. Carspey, for Rio de Janeiro | 5,982 |
| For French West Indies: | |
| Nor. Str. Dicto, for Fort de France | 4,963 |
| For Cuba: | |
| Dan. Str. Viborg, for Havana | 2,927 |
| Br. Str. Sheafspear, for Antilla | 1,740 |
| For Canada: | |
| Br. Str. North Anglia, for Montreal | 5,508 |
| Br. Str. Hochelaga, for Sydney | 7,184 |
| Br. Str. Lingan, for Port Alfred | 7,109 |
| Nor. Str. Landward, for Montreal | 4,271 |
| Br. Str. Wabana, for Quebec | 7,309 |
| Br. Str. Twickenham, for Quebec | 7,505 |
| Br. Str. Blackheath, for Quebec | 7,618 |
| Ital. Str. Fidelitis, for Montreal | 6,025 |
| For France: | |
| Fr. Str. P. L. M. 12, for Rouen | 5,475 |
| Fr. Str. P. L. M. 16, for Rouen | 5,270 |
| For China: | |
| Br. Str. City of Pekin, for Shanghai | 2,685 |
| For New Brunswick: | |
| Amer. Str. Suffolk, for St. John | 7,572 |
| Amer. Schr. J. O. Webster, for St. Stephen | 614 |
| For Jamaica: | |
| Amer. Str. Levisa, for Kingston | 2,414 |

FROM BALTIMORE

| | |
|---|---|
| For Canada: | |
| Nor. Str. Samanger | 6,325 |
| For France: | |
| Ital. Str. San Giuseppe | 7,083 |
| For Italy: | |
| Br. Str. Hypatia | 5,748 |

FROM PHILADELPHIA

| | |
|---|---|
| For Cuba: | |
| Br. Str. Gibraltar, for Havana | —— |
| Br. Str. Firpark, for Havana | —— |

### Hampton Roads Pier Situation

| N. & W. Piers, Lamberts Pt.: | July 16 | July 23 |
|---|---|---|
| Cars on hand | 1,552 | 1,731 |
| Tons on hand | 99,667 | 110,850 |
| Tons dumped for week | 118,937 | 103,714 |
| Tonnage waiting | 10,000 | 20,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 1,018 | 866 |
| Tons on hand | 68,950 | 60,800 |
| Tons dumped for week | 59,976 | 90,205 |
| Tonnage waiting | 5,318 | 1,679 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,853 | 2,690 |
| Tons on hand | 142,650 | 126,720 |
| Tons dumped for week | 134,513 | 170,424 |
| Tonnage waiting | 6,360 | 4,620 |

### Pier and Bunker Prices, Gross Tons

PIERS

| | July 18 | July 25† |
|---|---|---|
| Pool 1, New York | $5.35@$5.60 | *$5.30@$5.60* |
| Pool 9, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 10, New York | 4.50@ 4.60 | 4.50@ 4.60 |
| Pool 11, New York | 4.25@ 4.50 | 4.25@ 4.50 |
| Pool 9, Philadelphia | 4.65@ 4.90 | 4.65@ 4.90 |
| Pool 10, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 11, Philadelphia | 4.25@ 4.30 | 4.25@ 4.30 |
| Pool 1, Hamp. Roads | 4.25 | 4.25 |
| Pool 2, Hamp. Roads | 4.10 | 4.10 |
| Pools 5-6-7, Hamp. Rds. | 4.00 | 4.00 |

BUNKERS

| | July 18 | July 25† |
|---|---|---|
| Pool 1, New York | $5.60@$5.85 | *$5.55@$5.85* |
| Pool 9, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 10, New York | 4.75@ 4.85 | 4.75@ 4.85 |
| Pool 11, New York | 4.50@ 4.75 | 4.50@ 4.75 |
| Pool 9, Philadelphia | 4.80@ 5.05 | 4.80@ 5.05 |
| Pool 10, Philadelphia | 4.60@ 4.80 | 4.60@ 4.80 |
| Pool 11, Philadelphia | 4.45@ 4.65 | 4.45@ 4.65 |
| Pool 1, Hamp. Roads | 4.35 | 4.35 |
| Pool 2, Hamp. Roads | 4.20 | 4.20 |
| Pools 5-6-7, Hamp. Rds. | 4.10 | 4.10 |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | July 18 | July 25† |
|---|---|---|
| Admiralty, large | 25s.6d.@ 26s. | **25s.6d.** |
| Steam smalls | 23s.@ 26s. | **26s.6d.@ 27s.6d.** |
| Newcastle: | | |
| Best steams | 17s.@ 19s. | **22s.6d.** |
| Best gas | 18s.6d.@ 19s. | **25s.** |
| Best bunkers | 17s.@ 18s. | **25s.** |

† Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ARKANSAS

The Greenwood Coal Co. will resume operations under the 1917 rate scale with conditions of the 1924 contract to be enforced wherever possible, according to notices posted in Greenwood July 17. The mine is one of the largest in the state and has been closed for several months. Although the exact date of opening was not given it was unofficially announced that several days would be required for cleaning up the mine, as it has been inactive for a long period. Soon after the Backbone Coal Co., of Excelsior, announced its intention of operating under the 1917 wage scale, the tipple of the mine was burned. Everything now is quiet around the mine and there have been no disturbances. Mine No. 2, which is to be opened, according to the posters, is said to have a normal capacity of from 500 to 750 tons daily and employs 300 men.

## COLORADO

The Ajax Coal Mining Co., operating a mine near Louisville, in Boulder County, notified the state Industrial Commission July 20 that an agreement had been reached between the operators and miners for a 20-per cent reduction in wages, effective immediately. This action is believed by officials to be the first step in breaking the apparent deadlock in the northern field. Most of the operators have asked the commission for permission to reduce wages 30 per cent, the men generally objecting to more than a 20-per cent reduction.

When the Moffat tunnel is completed and the proposed extension of the Moffat road made from Craig, Colo., to Provo, Utah, valuable coal beds, covering an area of 450 square miles southwest of Craig, along the Yampa River, will be tapped, according to a report by government engineers to the Department of the Interior. There will be no extensive exploitation of the coal fields until there is a railroad through or near the area, the report indicates. Coal to be found there is bituminous, and the beds occur in the Mesa Verde geologic formation. There are many thick beds of coal in the area mentioned, the report says.

A committee of workers from the Leyden coal mine, in Jefferson County, where a strike is in progress reported to the State Industrial Commission on July 18 that hoist men, pumpers and others remaining on the job to afford safety of the property had refused to assist into the mine men said to have been employed to succeed workmen now striking. The Industrial Commission is powerless to act in the dispute. It recently permitted the company to cut the wages of miners 20 per cent. The company had asked for a 30 per cent reduction. The miners, it is said, agreed to take the 20 per cent cut, but objected to an alleged attempt on the part of the company to put in effect a 30 per cent arbitrary reduction. Ninety miners walked out July 13.

Colorado coal mines produced 599,302 tons in June compared with 565,335 tons in the same month a year ago, a decrease of 33,967 tons. The total output in the first six months of the current year was 420,000 tons less than for the same period a year ago. The average number of men employed in and about the mines for June was 11,731. The number of days worked per mine was 82.4.

The Colorado Fuel & Iron Co. reports net earnings of $1,649,944 for the second quarter of 1925, compared with $1,037,050 in same period last year, and surplus of $684,157, compared with surplus of $58,635 reported last June.

The National Fuel Co., Denver, was placed in the hands of a receiver July 16, following the institution of foreclosure proceedings in the District Court by the International Trust Co. H. Van Mater, president of the company, was named as receiver by District Judge Charles C. Butler, who fixed bond in the sum of $100,000. The bank alleges that the company is wholly unable to pay its debts and obligations, and that its financial affairs are in an embarrassed condition. In an answer, the fuel company admitted the allegations of the bank, and agreed to the appointment of the receiver.

## ILLINOIS

Orders for resumption of work at Mine No. 2 of the Bell & Zoller Coal Co., at Zeigler, have been issued from the main office of the company in Chicago. The opening of this large mine is attributed somewhat to the results of the recent 1,600-mile "Good will tour" made by citizens of Ziegler three weeks ago, starting in St. Louis, passing through five states and terminating in Chicago six days later.

Formal announcement has been made by officials of the United Electric Coal Co., Danville, of the abandonment of its No. 6 mine, located west of that city. The strip mines of the company are all working, however. The mine has been idle for practically two years although it was maintained and kept in condition in the hope that the coal market would improve sufficiently to warrant operations. Such hopes, however, have not materialized and as a result J. C. Anderson, general superintendent, announces that the supplies and equipment are being removed.

The Jay Coal Co., mine, at Bethalto, which has been closed down since Dec. 15, 1923, when it failed to meet its payroll, will be sold under a mortgage foreclosure on Aug. 17 at the courthouse in Edwardsville, to the highest bidder. The Bethalto mine is the largest mine in this section of the county. In January, 1924, H. E. Kelsey, cashier of the Bethalto State Bank, which is the mortgagee, was appointed receiver of the mine, to preserve it. Three acres of ground upon which the mine property is located and the mine shaft is sunk will be sold in addition to all the mining property.

## INDIANA

A hearing on the petition of the Chicago & Eastern Illinois R.R. to increase the fares on its miners' trains in the Clinton coal field from a monthly commutation rate of $1.10 to $2.50 and to suspend train operation when mines are idle was heard last week by the Indiana Public Service Commission. A delegation of miners attended the hearing to protest against the proposed changes. The miners contend that the increase of fares is not warranted because the work of the miners gives the railroad company a heavy coal tonnage which produces large revenues to the company. They also assert that enough miners are employed on idle days to warrant operation of the trains.

The Patoka Coal Co., Petersburg, has closed a contract for 500 acres of stripping coal land just north of Winslow, and surveyors are arranging for a switch from the Southern Ry. to the new property. The company is a pioneer in the stripping coal industry in Indiana. It now is operating a mine at Blackburn and has taken over a large acreage near Hartwell. Machinery will be installed as soon as the switch is completed.

## IOWA

Merger of fourteen Iowa coal companies, controlling 20 mines which yield 85 per cent of the coal mined in Polk County, will be completed about Sept. 1, according to a recent report by operators interested. Appraisal of the various properties is under way. Some of the companies will sell outright to the merger and others will take stock in the consolidated concern. The mines will be under a single management and their retail offices also will be combined.

## KENTUCKY

The Great Western Coal Co., Madisonville, has changed its name to the Hawley-McIsaac Coal Co., with C. R. Hawley as president. The company has acquired by purchase and lease about 10,000 acres of additional coal land in Hopkins County, and is about to open another strip pit equipped with a five-track steel tipple and will later open two other strip pits as well as some shaft mines.

L. L. Hazelwood and sons, who have been at work sinking a coal shaft at Graham hill, on the Zion road, east of Henderson, report that at an early hour July 11 they struck a bed of No. 11 coal over 4 ft. deep. The firm is known as the Graham Hill Coal Co. and it mined coal there a year ago, but the bed was shallow and the new shaft was sunk.

Three suspicious looking fires have occurred in western Kentucky recently. The Beaver Dam Coal Co. lost a commissary store building last week and the Huff Coal Co., at McHenry, lost a tipple. On the morning of July 21 fire destroyed the big four-track tipple of the Dawson Daylight Coal Co., near Dawson Springs, causing a loss of about $25,000. The fire occurred at a time when the big strip operation, which is comparatively new, was loading on an average which would have given over 20,000 tons for the month. In June production was over 17,000 tons. Rebuilding will start at once, on the same foundations, and the new tipple will be of wood, as it would take too long to install steel. The company probably will erect a temporary structure for handling mine-run until the plant can be rebuilt.

## MISSOURI

The Mulkey Coal mine at Macon is being cleaned out preparatory to loading coal this week. About 65 men will start in, and more will be added as the demand increases. The manager, Horace Whetsel, expects the mine to run steadily through the summer and fall with an increased output during the winter. The mines at Bevier, 5 miles west of Macon, are still closed down, but it is hoped that arrangements will be made for the resumption of work there by fall.

Marceline Mine No. 2, at Marceline, is again in operation. A company of miners of the city have leased the property from the owners and are busy preparing everything for the production of all coal which will be needed to supply the market. The lessees will retain the old name, the Marceline Miners' Co-Operative Coal Co. John Stewart will be the foreman. The Sunshine Coal Co. also is working more than thirty men.

## OHIO

The Pittsburgh Coal Co. is gradually increasing its operating forces at its three mines in the Pomeroy field where the 1917 wage rate is in force. The last semi-monthly pay roll totaled $22,000, which was $4,000 more than the previous pay.

**Shamrock Mine Tipple**

A modern steel structure at the West Kentucky Coal Co.'s operation at Providence, Ky. This mine is five years old and has a capacity of 2,000 tons per day. Acquisition of the St. Bernard mines has made the West Kentucky Coal Co. one of the largest producers in the country.

Two mines at Wainwright, six miles south of New Philadelphia, owned by the Midvale Goshen Coal Co., Cleveland, resumed operations July 16 after being idle since June 1. The mines started up with 200 men and are working three or four days a week. Three mines of the Underhill Coal Co., Cleveland, at Mullins, idle fourteen months, also will resume soon. Fifty men will be employed and the number increased to 150 in a year.

F. W. Braggins, president of the Lorain Coal & Dock Co., of Columbus, gives interesting figures on lake tonnage loaded up to the end of June at the various lake ports. Up to July 1 the ports of Huron, Lorain, Cleveland, Fairport, Conneaut, Cleveland and Erie loaded 1,560,000 tons of lake coal, both cargo and bunker, as compared with 6,650,000 tons loaded at Toledo and Sundusky in the same period. The ports of Toledo and Sandusky handle West Virginia and Kentucky coal almost exclusively while the first mentioned ports handle Ohio and Pennsylvania coal. In the same period of 1923 Toledo and Sandusky loaded 3,866,000 tons as compared with 6,233,000 tons loaded at the other ports, and during the same time in 1924 Toledo and Sandusky loaded 3,496,000 as compared with 2,995,000 tons loaded at the other ports.

In the second annual Ohio first-aid contest, held at Zanesville, July 18, the team representing the Maher Collieries Co., of Glencoe, won first place among 29 teams participating. The miners' team from Lore City, which won the contest last year, was completely outclassed and finished fifth. A large crowd was attracted to the meeting, which will be held yearly from now on.

The Western office of the West Virginia Coal & Coke Co., which was located in the Atlas Building, Columbus, previous to the merger, has been consolidated with the Cleveland office. R. D. Jeffers, who was in charge of the Columbus office, has become connected with the Cleveland office. The change took place early in July.

Deputies from the Ohio Mine Department recently removed the seals on the Blue Rock Mine, owned by the Blue Rock Coal Co., of Zanesville, which caught fire about six months ago. It was found upon inspection that the fire was extinguished and since the company desired to start operations the seals were removed. The work of ventilating the mine is going on and the equipment is being repaired. Active operations will start about Aug. 1.

Several hundred miners were idle for more than a week because of the flooding of the Provident mine of the Clarkson Coal Co., located near St. Clairsville. The flooding resulted from a cloudburst in the neighborhood.

## OKLAHOMA

An organization known as the Henryetta Coal Operators Association has been perfected by the operators in the Henryetta field. J. G. Reid, with the Wise-Buchanan Coal Co., the largest producing company in the field, was the choice for president, and J. Henton was named secretary. Practically all operators in the field are members of the new association. With one or two exceptions, the 1917 wage scale is being paid. Records for hoisting coal were said to have been broken here one day last week, when the daily amount exceeded that for any other day in the last two months. Coal loaded in June exceeded the amount loaded in June, 1924.

## PENNSYLVANIA

Strike talk in the anthracite field has increased the possibility for prepared sizes of bituminous coal in the central Pennsylvania field, which could furnish several million tons monthly of low-volatile coal for domestic use. During the last few years many tipples have been equipped to make different sizes of prepared coal.

On account of the industrial depression in the Broad Top field, and especially in the vicinity of the mines of the Colonial Iron Co., a large number of men normally employed in the mines are working on the state road under construction between Bedford, Pa., and Cumberland, Md. The men are camping near the scene of construction.

An application of the East Broad Top Railroad & Coal Co. for the construction of a dam in Hill Valley Creek at Mt. Union made to the State Water and Power Resources Board is being held up for investigation and a hearing may be ordered as part of the state's plan for preventing stream pollution. The State Sanitary Water Board is now investigating the matter and because of the belief that coal-mine discharges would pollute the Juniata River the State Conservation Council and the Central Pennsylvania Fish and Game Association may enter formal protests against the application. The Water and Power Resources Board has been active recently in attempting to prevent pollution of streams which are now clear and to reduce pollution of other streams.

Through the efforts of the Davis Coal & Coke Co., the Boswell mine, in Somerset County, is 100 per cent first aid. The mine rescue car of the Department of Mines has completed instructing the men and Boswell mine has the distinction of being the first mine in Pennsylvania to be certified 100 per cent first aid.

The Wilkes-Barre court is co-operating with mining companies in the anthracite field in an effort to prevent smoking by miners while at work in gaseous mines. Under a state law, smoking is prohibited in such mines and the attempt is being made to enforce the law. For the first offense a fine must be paid to some charitable institution. The offender also is warned that a repeated offense will bring a larger fine as well as a sentence of imprisonment. Foremen have been instructed to exercise special vigilance to prevent smoking and in cases where the regulations are violated repeatedly, they will discharge the offenders. Years ago the clay pipe was the friend and companion of the miner, but the present generation, mine officials say, have almost discarded the pipe in favor of the cigarette.

Miners employed at the Kinloch mine of the Valley Camp Coal Co., at Parnassus, near Pittsburgh, accepted a proposal of the company that they forego receipt of their semi-monthly wages for a period of six weeks, or until such time as the company shall be in a position to pay them. It was stated, however, that in no circumstances shall the agreement provide for payment later than Aug. 28. The payroll of the company's mine, which operates union, is about $30,000 a month.

Fire, believed to have been of incendiary origin, last week destroyed the chute leading from the pit mouth of the Scott Haven Coal Co. mine at Scott Haven to the Pittsburgh & Lake Erie railroad tracks, compelling the mine to suspend operations for a time until the chute is rebuilt. The damage amounts to several thousand dollars. The chute was discovered on fire in three different places. The mine is a small one that has been operating non-union.

Only three of the nine railroads that traverse the Pittsburgh district are loading less coal than at this time last year, it is learned from roads' records. These three lines are the Pittsburgh & Lake Erie, Montour and the Union. The Pennsylvania, Baltimore & Ohio, Pittsburgh & West Virginia, Buffalo, Rochester & Pittsburgh, Monongahela and Bessemer & Lake Erie are loading more coal than at the same time last year.

A plan whereby the Chamber of Commerce of Pittsburgh undertook to solve the coal situation in western Pennsylvania, looking to the reopening of the mines, probably was abruptly checked on July 22 when Patrick T. Fagan, president of District No. 5, United Mine Workers, announced that the miners would refuse to join the operators in any plan that would involve a district agreement or any change from the Jacksonville agreement. The Chamber of Commerce proposed in resolutions, and followed this with the appointment of a committee to carry them out, that the operators and miners each form new organizations for ironing out of differences which are keeping the mines closed.

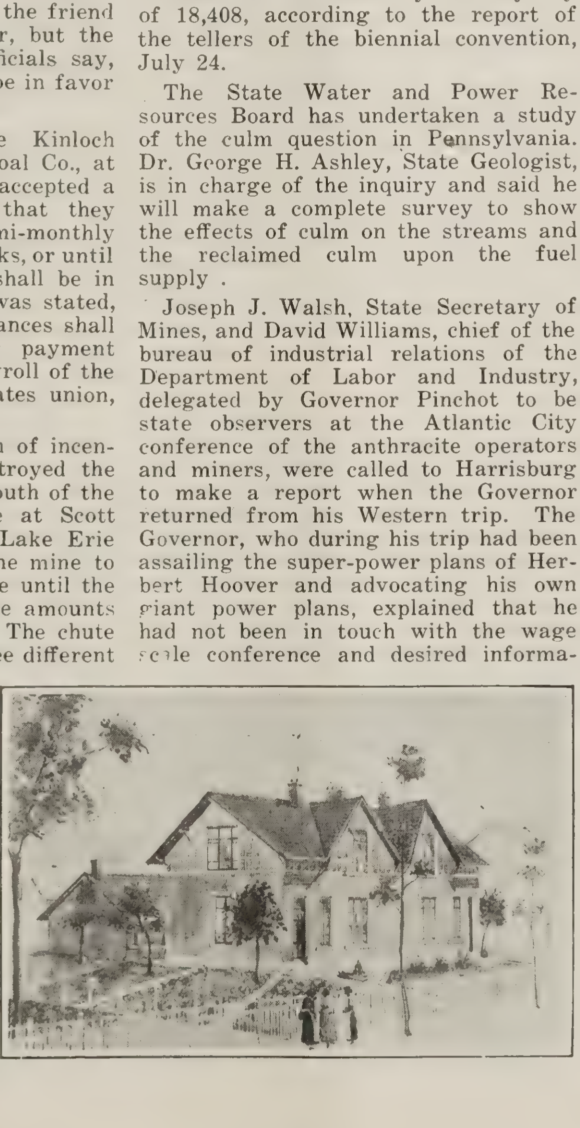
Rinaldo Cappelini, president of District 1 of the United Mine Workers, was re-elected to that office over William J. Brennan by a majority of 18,408, according to the report of the tellers of the biennial convention, July 24.

The State Water and Power Resources Board has undertaken a study of the culm question in Pennsylvania. Dr. George H. Ashley, State Geologist, is in charge of the inquiry and said he will make a complete survey to show the effects of culm on the streams and the reclaimed culm upon the fuel supply .

Joseph J. Walsh, State Secretary of Mines, and David Williams, chief of the bureau of industrial relations of the Department of Labor and Industry, delegated by Governor Pinchot to be state observers at the Atlantic City conference of the anthracite operators and miners, were called to Harrisburg to make a report when the Governor returned from his Western trip. The Governor, who during his trip had been assailing the super-power plans of Herbert Hoover and advocating his own giant power plans, explained that he had not been in touch with the wage scale conference and desired information. Richard H. Lansburgh, Secretary of Labor and Industry, attended the meeting with the Governor. While none of the men present would discuss the meeting it is understood that the observers told the Governor that a compromise does not seem possible at this time.

**Workmen's Residences**

Design for a mine worker's residence in the environs of Lens. France. The French miner may not have an automobile but he expects to live in a good house.



## TEXAS

For six months ended June 30, 1925, the Texas Pacific Coal & Oil Co. reports net earnings of $1,081,380 before depreciation and depletion, compared with $1,267,858 in first six months of 1924. Net earnings for the second quarter of 1925 were $588,254 comparing with $493,126 in the preceding quarter and $686,184 in the second quarter of 1924. The company closed the first half year with more than $1,000,000 in cash, while its current obligations consisted entirely of current expenses, there being no bank loans.

## UTAH

On July 16 the committee appointed to take charge of the public fund raised last year for the dependents of the victims of the big mine explosion at Castlegate handed in their report. The amount raised by subscription was $104,925.76. Twelve families left without fathers were helped back to their relatives, more than half of them in foreign countries. The fund was raised at the call of Governor Chas. R. Mabey, now out of office.

An amendment of the city ordinance forbidding the use of oil burners as heating plants in residences of Salt Lake City was recommended to the City Commission on July 17 by the retiring City Engineer, Mr. Cannon, who stated that a more general use of oil burners throughout the city would be desirable on the grounds of economy, cleanliness, convenience and as a help in controlling the smoke nuisance.

Coal mined in Utah in June totaled 280,830 tons, compared with 261,975 tons for same month last year and 251,874 tons in May of this year. In the first half of the present year 2,019,046 tons were produced compared with 1,946,766 tons for the same period of 1924. The heavy production of 531,600 tons of June, 1920, has not been equalled since.

## VIRGINIA

S. B. Hall, sales manager of the Smokeless Fuel Co. at Norfolk, is seriously ill in a Norfolk hospital.

Captain Inslee T. West, for a number of years Norfolk representative of several steamship lines and tugboat companies engaged in the coal trade, has gone to Savannah, Ga., and R. M. Foster is now handling the business.

The Virginia Iron, Coal & Coke Co. reports gross earnings of $671,634 for the three months ended June 30, 1925, against $760,242 in the same period last year. After all expenses and reserves for interest and taxes, the company reports a net loss of $70,264 for the June quarter, against a loss of $51,199 in the

June quarter last year. For the first six months of 1925 the company reports gross earnings of $1,510,886, against $2,180,986 in the first six months of 1924. After similar deductions the company reports net profit of $147,041 for the half year equal to 84c. a share earned on the common stock after preferred dividend requirements. In the first half of 1924 a net loss of $45,407 was reported.

### WEST VIRGINIA

After an idleness of two years, Delmar Mine No. 1 of the Delmar Coal Co., in Flemington, is being cleaned up preparatory to a resumption of operations. Since the mine was closed down a good deal of rock and slate has fallen on the tracks and it will require about 25 men more than two weeks to clean up the débris. When operations are resumed 200 men will be employed, it is stated. The plant was formerly operated by the Pittsvein Coal Co. Charles Dawson, of Flemington, has been appointed to act as superintendent in charge of operations.

The Island Creek Coal Co., operating in the Logan County field, loaded 525,000 tons of coal in June, exceeding May production by 4,000 tons. Output for the first half of the year reached a total of 2,765,200 tons, compared with 2,050,907 tons in the first six months of 1924 and 1,278,818 tons in the first half of 1923.

These coal corporations were launched in West Virginia in June: The Copen Creek Collieries Co., of Gilmer, with a capital stock of $25,000; Mercer Coal & Supply Co., Inc., capital, $25,000; Booth Coal Co. of Clarksburg, capital $25,000; Lake & Export Coal Co., of Huntington, capital of $30,000 of stock with par value and 200 shares of no par value; Lecony Smokeless Coal Co. of Huntington and Besoco, capital, $100,000; Pascal Coal Mining Co., of Morgantown, capital, $50,000; Lanark Fuel Co. of Beckley, capital, $100,000; Thornton Coal Co. of Bluefield, capital, $100,000, with chief works in Kentucky; Pittsburgh-Kanawha Coal Co., organized by J. H. Roelofs, of Pittsburgh, capital, 1,000 shares of no par value.

A new issue of $850,000 West Virginia-Pittsburgh Coal Co. first closed mortgage 6 per cent sinking fund gold bonds, due July 15, 1930, was announced last week by Paine, Webber & Co., New York. The offering price is 98 and interest, to yield 6.45 per cent. The property of the company is located in Brooke County.

The Holly-Elk Coal Co. has increased its capital stock from $350,000 to $500,000 and the following companies have reduced their capital: Forest Coal Co., from $300,000 to $20,000; Diamond Coal Co., from $200,000 to $10,000; Dale Coal Co., from $150,000 to $50,000; Soper-Mitchell Coal Mining Co., from $150,000 to $25,000; Elm Grove Mining Co., from $3,000,000 to $2,000,000; Kelly's Creek Colliery Co., from $2,000,000 to $1,600,000; New Gauley Coal Corporation, from $10,000,000 to $5,000,000.

Notices have been sent from the West Virginia Department of Mines to coal companies throughout the state of West Virginia calling attention to the fact that recently enacted changes in the mining laws became effective on July 21. Much importance is attached to an addition to the laws with reference to the ventilation of mines, the new provision reading as follows: "In all mines, accumulations of fine coal dust shall, as far as practicable, be removed from the mine and all dry and dusty sections kept thoroughly watered down at all times, or rock-dusting or other approved means used for allaying dust."

### WYOMING

The annual first aid and mine rescue field day of the Union Pacific Coal Co. will be held at Rock Springs first-aid park on Saturday August 8th next. Teams from the several U. P. camps will compete for honors, and the winners of the meet, in addition to being showered with honors locally, will represent the Union Pacific Coal Co. at the national meet in Springfield, Ill., on Sept. 10, 11 and 12, next.

### CANADA

On July 21 Premier E. N. Rhodes and Col. Gordon Harrington, Minister of Mines in the new administration of Nova Scotia, held a conference at Sydney, N. S., with President Roy M. Wolvin and Vice-President J. E. McLurg of the British Empire Steel Corporation, and the executive board of District No. 26, U. M. W., with the view of effecting a settlement of the coal strike. After two days' deliberations the conference was adjourned for a day. The parties to the conference agreed to leave the issuing of any statements to Premier Rhodes, who stated that he did not see that any purpose could be served by giving out any report.

Peat Fuels, Ltd., a Montreal company, has taken over the experimental peat plant at Alfred, Ont., where tests were carried on by the Dominion government for several years to ascertain the feasibility of producing peat as a domestic fuel as a substitute for anthracite. The company has undertaken to operate the plant and put the product on the market through the regular commercial channels. About 5,000 tons of peat briquets will be available for use during the coming winter. While this quantity is too small to have any immediate effect on the situation it will determine the commercial possibilities of peat and its ability to compare with coal. The retail price at Ottawa and Montreal probably will be $11 or $12 per ton.

At the annual meeting of the Crow's Nest Pass Coal Co., held at Fernie, B. C., on July 10, the following officers were elected: W. R. Wilson, president; A. H. MacNeill, first vice-president; A. H. Robinson, second vice-president; A. Klauer, treasurer; G. H. Hess, Jr., comptroller, and J. S. Irvine, secretary.

## Traffic

The brief of the government, filed in answer to the suit brought by the Ford interests against the Interstate Commerce Commission's ruling in the assigned car case, states that it is merely a question of whether the Ford interests will regulate cars in the interests of the automobile industry or in the interest of the public in time of car shortage.

## Obituary

**Captain Frederick Ebersbach**, one of the best known coal operators and capitalists in southeastern Ohio, died at his residence in Pomeroy, Ohio, recently, after an illness of several months. He was 66 years of age and had been a resident of Pomeroy all of his life. Captain Ebersbach, who received the title from his steamboat experience on the Ohio River, owned a number of mines in the Pomeroy Bend field which were sold about five years ago to the Great Lakes Coal Co. Since that time he had been engaged in other enterprises, notably being chairman of the board of the Neil House Co., of Columbus, which has just completed a 12-story modern hotel. He was engaged in years past in towing coal on the Ohio River and was the first to transport coal by water from the Pomeroy field. Funeral services were held July 14 at his late residence.

**Col. William T. Clark**, manager of the Empire Fuel Co., Buffalo, died July 11, after a long illness, aged 87, leaving one daughter. He was uncle to Eugene C. and William T. Roberts, in the coal business in Buffalo, and Clark T. Roberts, in the coal business in Chicago.

## Coming Meetings

**Rocky Mountain Coal Mining Institute.** Summer meeting, Aug. 26-29 at Price, Utah. Secretary, Benedict Shubart, Denver, Colo.

**American Institute of Mining and Metallurgical Engineers.** 132d meeting, at Salt Lake City, Utah, Aug. 31 to Sept. 3. Secretary, H. Foster Bain, 29 West 39th St., New York City.

**Oklahoma Coal Operators' Association.** Annual meeting, Sept. 10 at McAlester, Okla. Secretary, A. C. Casey, McAlester, Okla.

**New York State Coal Merchants' Association.** Annual convention, Sept. 10-12, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**Association of Iron and Steel Electrical Engineers.** Annual meeting at Philadelphia, Pa., Sept. 14-19. Secretary, John F. Kelly, Empire Bldg., Pittsburgh, Pa.

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries,** Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering,** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
E. J. MEHREN, *Vice-President*

Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. DAWSON HALL
*Engineering Editor*

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## "Stop Thief!"

VICTORIAN-MINDED READERS who still cling to the belief that Dickens and Thackeray have not been crowded into the limbo of obscurity by such moderns as D. H. Lawrence and Arthur Schnitzler will recall the episode in "Oliver Twist" in which the Artful Dodger diverts suspicion from his own filchings by leading the pack in the cry of "Stop thief." Something of the same time-honored strategy is strongly suggested in the persistent demand of spokesmen for the miners at Atlantic City that S. D. Warriner and W. J. Richards again take up the thankless and arduous rôles those two veterans of wage negotiations have so lately escaped—that and something more.

In the face of repeated official and unofficial denials that the operator members of the sub-committee cannot take final action without the approval of the retired veterans, the impression is assiduously spread that the miners' adversaries in the present negotiations are powerless marionettes. Whether by design or not, the prolonged absence of Mr. Lewis from the inviting ocean front served to give a deeper color to that impression. Somewhere, somehow, hint these impressionistics, a miner—presumably the redoubtable Mr. Lewis himself—and an operator or operators—obviously Messrs. Warriner and Richards are meant—will sneak into secret conclave and sign another truce in the anthracite wage war.

But those who will take the trouble to examine the verities of the situation will appreciate the appositeness of the Dickensian comparison. The operators sitting at Atlantic City insist that they are fully empowered to negotiate an agreement, and there is no reason to doubt either the truthfulness of that statement or the sincerity of the men making it. The miner members of the committee, on the contrary, have absolutely no power to *negotiate* any agreement. They cannot vary one jot from the demands framed by the tridistrict convention at Scranton last month. Even if convinced that logic and justice were all on the side of the employers, Mr. Murray and his able associates could do no more than recommend to the tridistrict convention a recession from its position. That body, and not the miners at Atlantic City, have both the first word and the last word.

Under these circumstances it comes with poor grace for men who admit they have no power to charge a similar impotency to those who possess full freedom of action. It bespeaks both a wilful attempt to befog the issue and to mislead the public and a confession of the weakness of the miners' case. How else shall we account for such a persistent perversion of the facts?

## Psychiatry

THE study of diseased minds is psychiatry, and as all minds are diseased when obsessed with anger, we commend the study of this science to the coal industry. An example of a diseased mind comes to mind. Two men were discussing the anthracite situation. One thought the prices of hard coal was scandalously high, and was incensed at the coal companies. Seeing the operators were having a dispute with the miners over the wage scale, he took the side of the miners and hoped they would get more money. Thus because he had to pay so much for coal he was ready to create a condition that would cause the price of coal to go higher.

This is no time for argument; the public needs a cure for its shattered nerves. In its jumpy condition it no longer is able to think. It blames the operator for suspensions, though it is the miner who causes them. It blames the producer for the high prices, though it is the miner whose wages have raised the cost. It blames the high wages for high costs and then insists that a settlement be made promptly at any scale the miner may present. It condemns the operator for not agreeing with the union and then terms an agreement when made mere collusion. That is a psychosis—derangement of the brain.

## Crawling Under the Fence

HIGHLY DEVELOPED equipment can only be handled with technically trained help. Unless a man has had the proper training in the fundamentals of mechanism and electricity he cannot hope to make proper use of such equipment. He will oppose its introduction, knowing that his ignorance will be exposed and that he will be unable to meet the problems its operation will involve. It must be confessed that not every man who lacks technical training is prone to rely on past practice, but too many are.

It has been said that the college student relies on his instructor and has a repetitive mind, but that is far less obvious than it is in the non-technical man. He too often refuses to believe in what he has not seen and operated. The man of books may be a slave to printer's ink, but how much wider is his horizon than that of the man whose range is limited to the experience of his daily task!

The printed word brings him information from everywhere. The man who depends on past practice and who stays in one place has only one source of instruction and that *has* dried or is drying up. The vices of book learning have been over-emphasized. There are such vices, it is true, but worse yet is the vice of relying on mere experience.

In defense of self-made men instances are frequently advanced of persons who are, only in a sense, self-made and in truth have been careful book students all their lives. Such men, do indeed, do well. Theirs is a working scholarship, and in these days of dances, movies, bridge parties, golf, tennis, radio and automobiles there does not seem much probability that the average man will tutor himself as well as he would be instructed at college.

To managers, superintendents and foremen who wish to have their sons follow their profession, we would strongly recommend that they give them college training. The future generation will demand that the men in control are thus duly instructed and will be little disposed to recognize those who crawled under the fence.

## The Facts in the Case

NO ONE could have believed that the public would close its eyes and its ears to the determination of the anthracite operators to avoid a suspension and submit the dispute with their employees to arbitration. Here were outstanding facts, simple and understandable, not merely hinted at but written in the plainest possible English, but to judge by all that is published and heard on the street the words might just as well never have been uttered. This shows how necessary it is to state and re-state facts for fear that there will be some who have not heard or read, or, having heard or read, have not understood. More than one man known to read his newspaper diligently has actually remarked that he thought the dispute was already settled.

For such ignorance, misapprehension and gross misstatement there is only one cure: reiteration in advertising. If the papers (unfriendly to the few who own mines and subservient to the many who work in them, to the even greater number who consume the fuel the mines produce, or to the legion who favor labor as against capital), will not carry the story editorially or on the front page and only meagerly on other pages, then there is no recourse but advertising.

In Great Britain the Information Department of the British Colliery Owners' Association is financed by a direct levy on a tonnage basis, and in 1922 the sum of one million pounds was expended to carry to the electorate the true story of British mining, the department being under the control of Philip Gee. One of the local secretaries who was a member of Mr. Gee's committee on publicity was in favor of a levy of six cents per ton to carry the facts to the public in 1926. Perhaps this sum has not been voted, but still it shows what some British operators feel should be done to meet the determination of the radical element to make unreasonable demands for the nationalization of the industry and for the granting of wage scales calculated to make mining unprofitable.

This department is financed by a separate levy, but other large levies are made for the work of the local and national associations and these are many times bigger than the sums expended here in support of the National Coal Association. Certain it is that the union in this country rejoices in being able to use the papers to carry over to the public incorrect statements as to the situation and to do so with only trifling cost.

But, to return to Great Britain, twenty-five trained journalists work under the direction of Philip Gee and cover the many separate districts of England, Scotland and Wales. When any issue arises they are ready to discuss it intelligently and this they do by staging debates and in other ways. Letters are written to editors of the leading papers, and printed publications, each on some specific subject, are sent to the newspapers.

Conditions in the United States may not invite any such prodigious effort, but when one notes the mass of inaccurate and misleading information which passes muster for truth one soon realizes that its correction is too much to leave to busy men who have their mine duties to attend to. Organization is necessary and a program. The operators cannot allow a false record to stand. They must be judged on the truth and the truth alone. The mass of incorrect data, the twists given to the facts, the innuendoes of journalists with a false slant on public affairs should be met completely and promptly. An unanswered argument is regarded as unanswerable, and allowed to stand for a while becomes "incontrovertible truth." It gets its roots deep into the soil and is hard to tear loose.

For this reason the operators who want to get the public ear should get it early and should not rest till the idea is "sold." The public should know what is causing strikes—namely, the success with which the union gets what it goes after. No one should be allowed to believe that the anthracite operators seek, cause or foster strikes. The facts as to the closed mines, as to the distress of miners in union districts, as to the shifts in operating centers should be known. These stories should be told with good copy so that the man on the street who in the end solves every problem rightly or wrongly may not decide blindly and inadvisedly.

Recent reports appear to show that the activity of the mine owners of England in combating false statements is bearing fruit. The public is arranging a subsidy settlement that seems to suit both parties. To us is seems an ill-advised compact and one that bears unduly on the public purse. It is another approach to socialism, but it testifies to a desire on the part of the public to be fair to the mine owner even at the risk of being unfair to itself. This is at least an advance over the old method of asking the operator to shoulder the burden. The Britisher realizes at last that the mine owner must go under if he pays the high wage rate, because he cannot shift his burdens on the foreign consumer by charging a high price and because the present high cost of fuel is sapping the life of Britsh industry and reducing still further the available market.

## Those Who Run Machines Should Tend Them

BY AND LARGE, the same care is not being given by operatives to mine electrical equipment nowadays as was given in the early days. It is true, unfortunately, that the making by the manufacturer of each improvement toward the foolproofing of a piece of electrical equipment is accepted by the runner as a sign to let up, in a degree, on inspection and day-by-day maintenance of that machine. When machines were a novelty, the attendants took pains to minimize breakdowns. As the novelty wore away less attention was given to preventive maintenance.

The old custom, making the operative directly responsible for the condition of his machine, should be revived by every coal company. Those men in closest touch with the several types of machines—as runners of cutting machines, motormen on locomotives, foremen on tipples, and the like—should be compelled to attend personally to the cleaning, lubricating and making of minor adjustments during idle periods or at the end of each shift. Repairs or adjustments which cannot be made by these men should be reported promptly.

Manufacturers ought not to be blamed for faults which result from laxity on the part of the mine management. It is more than a coincidence that those companies which adhere to the old custom of preventive maintenance are least vexed with electrical and mechanical breakdowns.

# Long Tunnels Make Extensive Dip Workings Self-Draining

## Water from Adjacent Mines Led to a Common Discharge —Flooded Part of One Mine Caved to Workings Below —Old Shafts Utilized—Gravity Makes Drainage Positive

**By Frank H. Kneeland**
Associate Editor, *Coal Age*,
New York City

In most instances mine drainage is an unavoidable corollary to coal production. As a rule mechanical means must be employed to rid underground operations of excess water. If, however, the beds worked lie for the most part above the general water level of the region and the pitch is moderate and fairly uniform the force of gravity may be utilized to drain even an extensive chain or group of mines. Such conditions prevail in southern West Virginia, where, in some instances, foresight and good engineering have made it possible to almost entirely obviate the use of pumps, bailers and other water-handling equipment.

Two extensive gravity drainage systems, one of them with a tunnel nearly 7 miles long, have been installed by the United States Coal & Coke Co., the general office of which is located at Gary, McDowell Co., W. Va. One system is on the western or right bank (when facing upstream) of Tug River and Sand Lick Branch while the other is on the opposite bank. The first drains mines Nos. 9, 7, 6, and 2; the second drains mines Nos. 10, 3, and 1. The latter operation has been abandoned, at least, temporarily. Each of these systems encountered conditions and difficulties peculiar to itself and thus presented engineering problems of its own.

The total length of the drainage system on the west side of Tug River and Sand Lick is about 37,200 ft. In Fig. 2, the portions of the various mines connected by this drainage system are shown as well as the connection between them. Where a tunnel or drift is required for passage of the mine water this also serves as a means for the distribution of mine timber.

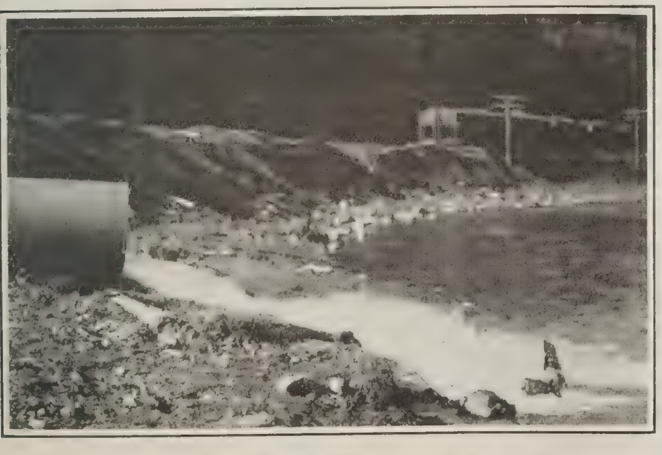

Fig. 1—Outlet of Larger Drainage System

Although variations in precipitation on the surface are reflected a few hours later in small changes in the volume of water escaping from this drain, it never fails. Year in and year out this stream of clear cool water finds its way to the Tug River.

Along Tug River and most of its branches timber has become scarce so that it is necessary to bring in a supply from Long Branch. This enters the mines at the point where the mine track crosses this stream. From here it can be taken to any point in mines Nos. 9 W., 7, 6, or 2. All workings in these mines are in the Pocahontas No. 4 bed and, consequently, tunneling through rock in order to obtain passage for the water is unnecessary. This drainage system, therefore, resembles an underground water shed with various branches and tributaries such as are found in natural water sheds on the surface.

The volume of water discharged from these workings is fairly uniform, seasonal changes making comparatively little difference in the rate of efflux from the outlet pipe. As this water shed embraces some areas in which the pillars have been drawn and the roof has caved to the surface there is a certain increased influx after heavy rains. It requires the lapse of only a few hours for this to reach its maximum.

Where the main watercourse traverses caved areas of this kind provision was made for keeping the waterway open before the pillars were drawn. To this end a ditch about 4 ft. wide and 2 ft. deep was dug in the mine floor. This was then concreted up the sides and over the top. When the roof caves over a ditch of this kind the fallen material "arches" over the top and the ditch cover has to support only a few feet of the roof rock. The ditch thus becomes a long aqueduct.

Mines on the opposite side of Tug River presented a drainage problem somewhat more difficult because here operations are carried on in both the Pocahontas No. 3 and No. 4 beds. The interval between these measures is about 65 ft., the No. 4 bed being uppermost.

Workings of mine No. 10 are in the No. 3 bed, those of mine No. 3 are in the No. 4 bed and those of mine No. 1, a shaft operation now abandoned, are in both beds. An old drift of this operation driven in the No. 4 bed comes out in the bank of Tug River slightly above the high water line. This has long been known as the Hood opening. It formed the logical outlet for the water from the mines on the east side of the river and the drainage system was planned accordingly.

The drainage system for these mines starts in the No. 3 bed in mine No. 10. The water is led through various workings in this operation until approximately the northwest boundary of the mine is reached. From here drainage headings were started to connect with the

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The headpiece shows the actual mouth or outlet of the smaller drainage system from mine No. 1 in the bank of Tug River. After having traveled for approximately five miles underground by a decidedly circuitous path, involving at one point a vertical descent of about 65 ft. from one coal bed to another and an equal perpendicular rise up old No. 1 shaft, this water finally escapes to a stream on the surface.

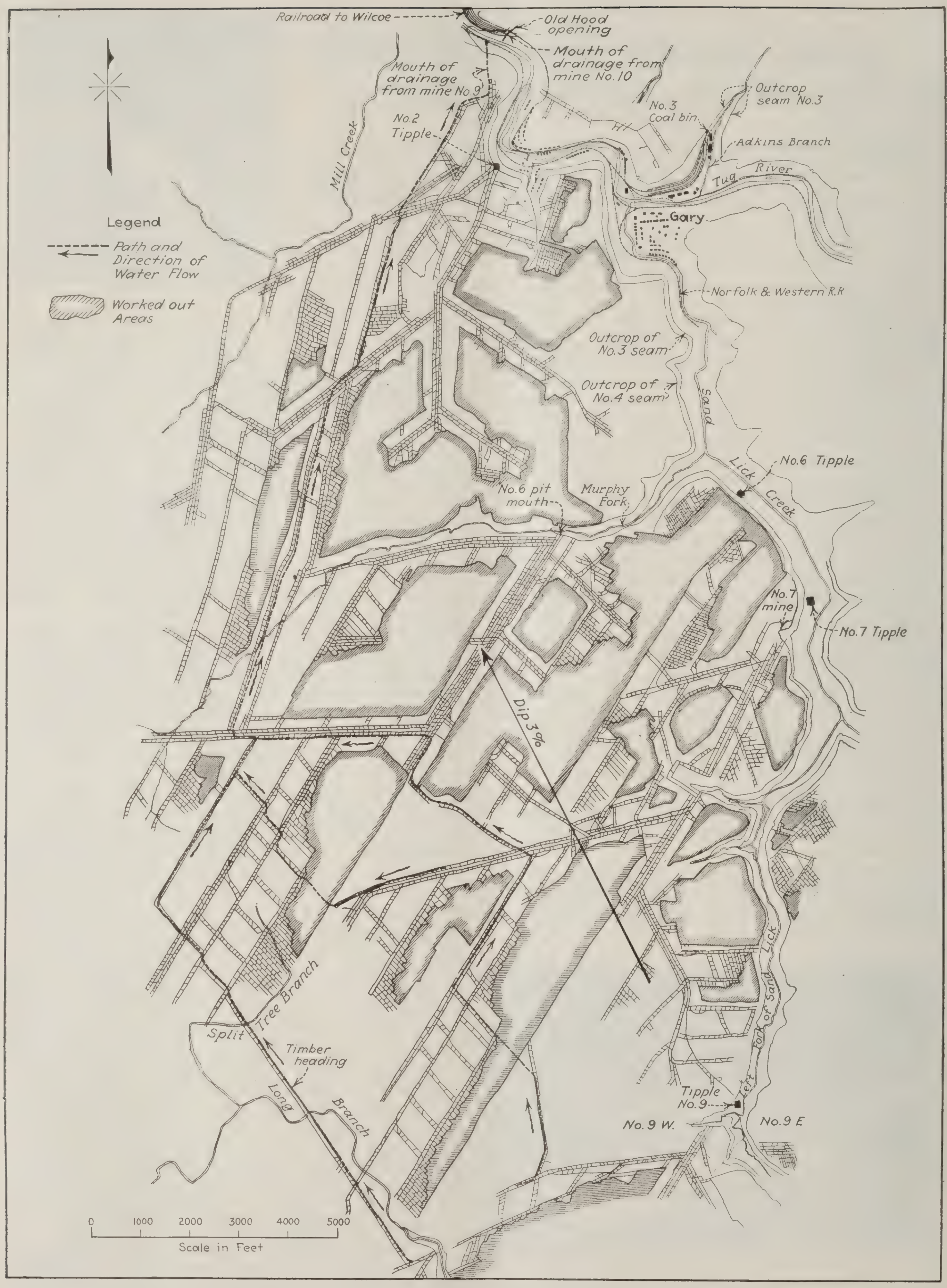


**Fig. 2—Drainage System Voiding Water from Four Good-Sized Mines**

It will be observed that the underground drainage here roughly parallels the natural drainage of the surface. Like the natural streams the one underground grows continuously throughout its entire length.

No. 3 bed workings in mine No. 1. These headings passed under the workings of mine No. 3.

When the drainage headings from No. 10 mine approached the No. 3 workings of No. 1 mine drill holes, or what might be called "feelers," were, of course, put into the coal ahead of the advancing faces. This proved to be an extremely wise precaution, for when these feelers holed through into the No. 1 workings marsh gas under pressure was encountered. It should be stated that No. 1 mine had been allowed to fill with water to the level of the Hood opening. The rise workings of this mine in the No. 3 bed thus were water-sealed, which accounts for the presence of the gas under pressure. This methane, however, bled off in the course of about 24 hr.

No. 3 mine contained two areas that originally had been driven more or less to the dip and had been allowed to flood. In order to drain the first of these, or what was known as the "J" mine, short headings were driven to a point (marked B in Fig. 3) below the lowest point in these workings. Here an area about 300 ft. square, or comprising approximately two acres, was worked out clean, the roof being supported meanwhile by means of heavy timbering. When this work was completed the roof supports were withdrawn and the strata between the two coal beds allowed to cave up into the old workings of No. 3 mine. Water from the flooded area thus was drained off in about 24 hr.

At a later date a rock tunnel was driven through the want or pinched-out area (marked C in Fig. 3). This allowed the water from the second flooded area to reach the headings leading to No. 1 mine.

Water from mines Nos. 10 and 3 enters mine No. 1 through the workings in the No. 3 bed. In this mine the shafts form the connection between the two coal measures. Up these shafts the water rises to the workings in the No. 4 bed, finds its way through the Hood headings and eventually escapes to Tug River through the Hood opening. The headpiece shows the actual discharge to the river. This is several feet below the rails at the mouth of the Hood opening. The tile thus was depressed in order to carry the water under a railroad track, which here is laid between the river bank and the Hood opening.

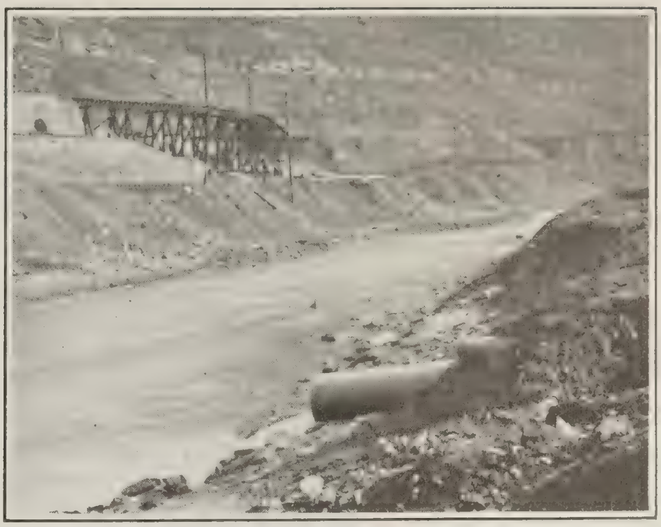


**Fig. 4—Downstream from the Lower Outlet**

In the foreground may be seen the outlet of the larger drainage system. The old Hood mine opening is across the river behind the larry trestle leading to the coke ovens. The actual discharge of the water to the stream is in the left hand bank almost in line with the end of the upper trestle.

Completion of these drainage systems has simplified the problem of dewatering the mines served by them. Every practical mining man hates to install a pump if its use can be avoided. This is not alone because of the cost entailed in pumping mine water but also because of the fact that any and every mechanical device, regardless of its kind or type, is less reliable than the constantly-acting forces of nature. Thus, gravity may be depended upon to operate day and night, in season and out of season, whereas such a device as a pump must be shut down occasionally for inspection or repair.

And, although all the workings of all the mines above mentioned cannot be unwatered naturally (swamps, swags, dips and swales are occasionally encountered which can be drained only by pumping) yet the United States Coal & Coke Co. uses fewer mine-drainage pumps today than it has at any time in its history. Furthermore, taken by and large, its mines are now more nearly free from water than ever before.

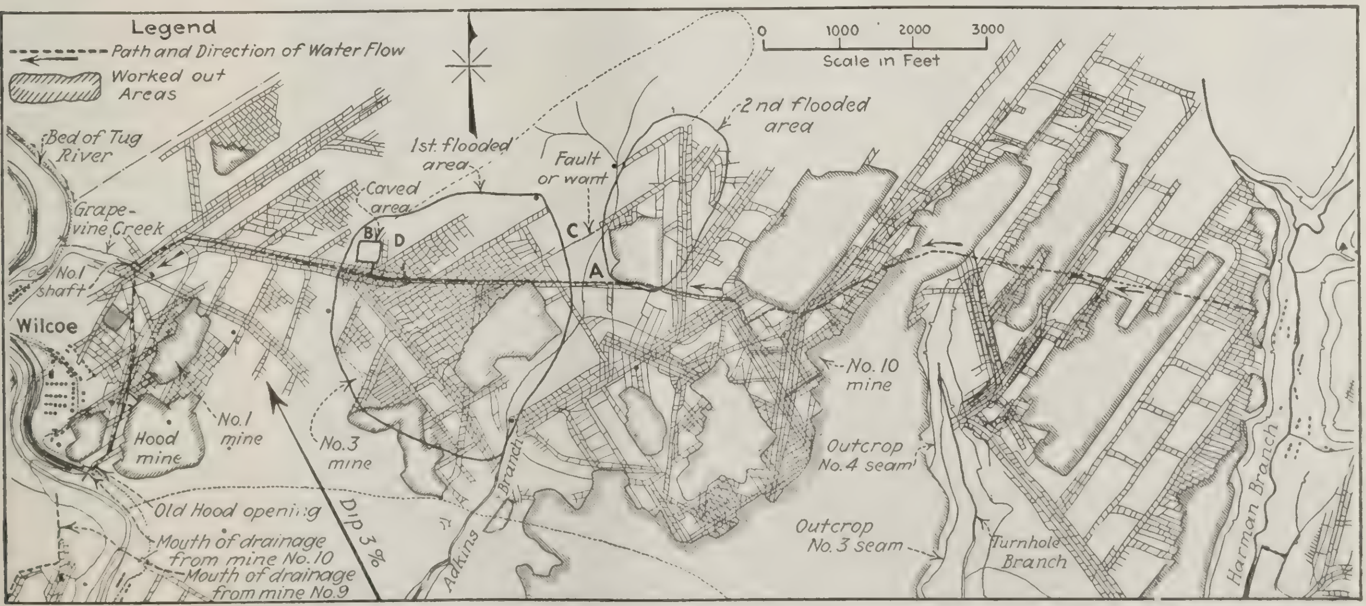


**Fig. 3—Draining Mines Nos. 10, 3 and 1 to a Common Outlet**

This system of drainage is particularly interesting because it lies partly in one bed and partly in another. At the point B the water from No. 3 mine descends from the upper to the lower bed through strata that have been purposely caved. It then proceeds with the water from mine No. 10 to No. 1 shaft, up which it rises and escapes to the surface through the Hood opening.

# Modernized Equipment Effects Large Savings

## Steam-Driven Apparatus Was Electrified Because It Could Be Operated Cheaper—Idle Day Losses Are Not So Heavy When Mine Is Equipped with Electric Drives

**By A. W. Spaht**
Electrical Engineer, Old Ben Coal Corporation, Chicago, Ill.

ECONOMICAL operation always is a major consideration in coal mining. It was the possibility of reducing the cost of producing coal that caused the Old Ben Coal Corporation to change its equipment from steam to electric drive. The company operates twelve mines in the Franklin County field of Illinois. The mines range from 3,000 tons to 7,000 tons daily capacity. A 33,000-volt transmission line, owned by the company, interconnects them all. This makes it a simple matter to operate the mines from a circuit having one main meter, thus giving the coal company the benefit of a large diversity factor. Also by arranging the schedule of operation of the various mines it is possible to maintain a comparatively high load factor based upon the maximum demand. This load factor was approximately 40 per cent last October.

The results of our modernization program obtained at No. 14 Mine are no doubt of general interest to the mining industry. This mine has a total lift of 519 ft. from bottom to dump. The average weight of coal per trip is 8,500 lb. Self-dumping cages are used, making 165 dumps per hour, or 700 tons per hour. The caging period is 4 sec.

The steam plant at this mine was a fairly modern outfit. Hence the contention that it was obsolete and should have been discarded cannot be made. It consisted of five water tube boilers having a total rating of 1,800 hp. Draft was furnished by a 200-ft. brick stack. The boilers were equipped with mechanical stokers, bunkers, and coal conveyors bringing coal directly from the tipple to the boiler plant. A suitable feed-water treating plant with filter, and feed-water heaters were provided. Steam pressure of 165 lb. gage, was carried. An ash blower took the ashes directly to railroad cars.

The hoisting engine was a 28x48-in. first motion unit with a 9-ft. cylindrical drum. The fan was driven by an 18x24-in. direct-connected, 4-valve engine. The exhaust from the hoisting engine and from the fan engine was used in a 500-kw. low pressure turbine for generating electric power for the mine locomotives and cutting machines. In addition to the turbine-driven generator there were two units, one a 250-kw. and the other a 200-kw. machine driven by direct-connected 4-valve engines.

The mine is now entirely electrically operated. The hoist with all its electrical equipment was designed and manufactured by the Allis-Chalmers Manufacturing Co. The hoist is equipped with a main direct-connected direct-current motor and an auxiliary alternating-current geared motor.

To show the brake operating mechanism and safety devices more clearly a view of the No. 12 hoist is shown in Fig. 1, which is a duplicate, except that it is of the opposite hand from the No. 14 hoist. The hoist drum is of the cylindro-conical type, being 6 ft. 6 in. in diameter at the small ends and 11 ft. 6 in. in diameter at the center. It is served by a parallel-motion post brake 10 ft. in diameter with a 12-in. face having structural steel posts. The brake is of the gravity type set by a weight and released by an auxiliary oil operated brake engine. The brake engine is free from objectionable leakage so that drip pans are not required.

An interesting feature of the brake engine is that the

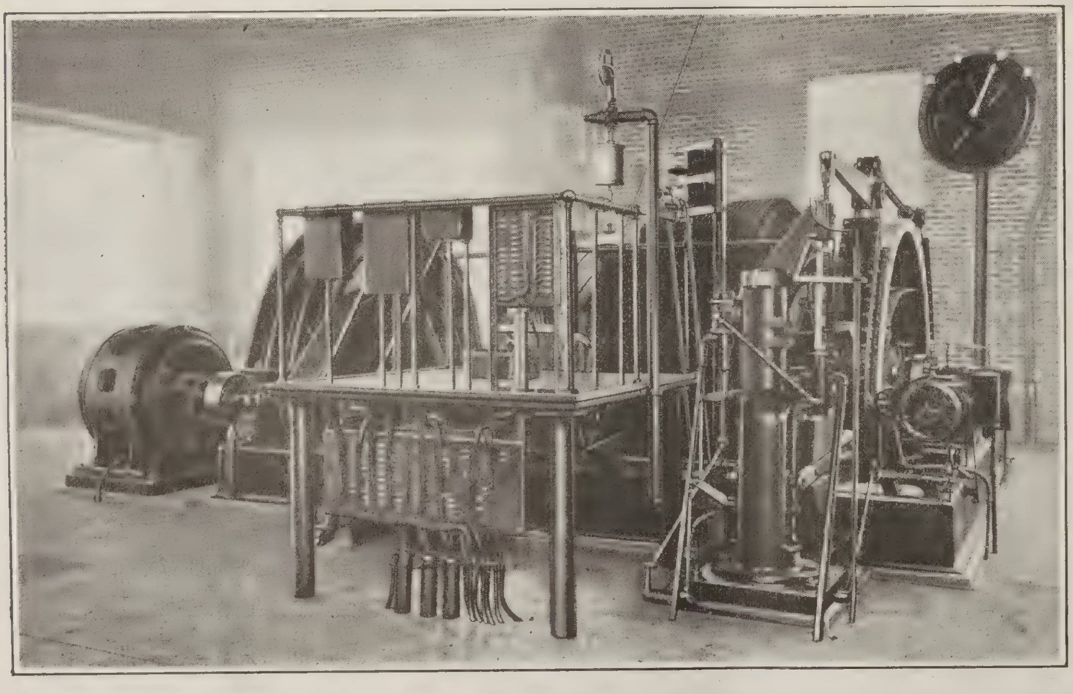


FIG. 1

**Two-Motor Hoist**

The main motor of this hoist is a direct-current unit which receives energy from a motor-generator set. For emergency purposes and for idle-day service an alternating-current motor is connected. Special safety features make it impossible to operate the two motors at once. An accident is a remote hazard.

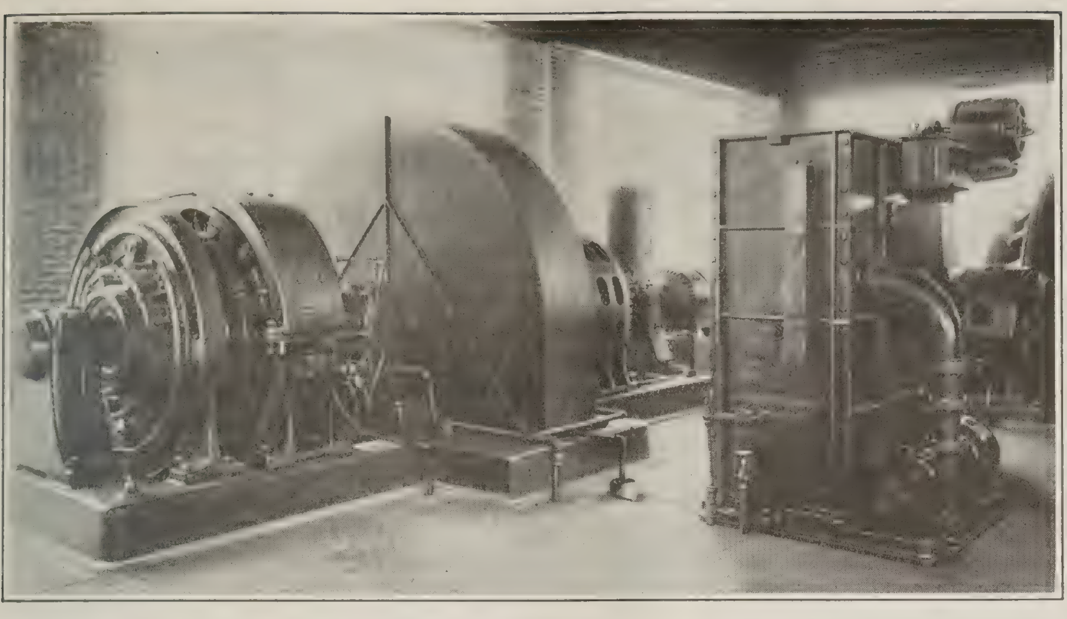


FIG. 2

**Power and Control Apparatus**

This picture shows the 800-kw. motor-generator set and liquid slip regularly used with the No. 14 mine hoist. The steel plate flywheel on the set weighs 22,000 lb.

auxiliary valve, which acts in connection with the safety devices to automatically apply the brake, is operated by both a direct-current and an alternating-current solenoid each functioning entirely independent of the other and so arranged that complete safety protection is afforded when the hoist is driven by the direct-current motor or the alternating-current motor. The oil pressure system provided for the operation of the brake is so designed that it eliminates all glands and stuffing boxes, valves, etc., and is neatly and cleanly installed.

The direct-current motor is rated 1,100 hp., 72 r.p.m., 600 volts. The power for this motor is taken through a motor-generator flywheel equalizing set consisting of a 750-hp., 720-r.p.m., 2,300-volt alternating-current motor, an 800-kw., 600-volt direct-current generator, a 22-kw., 250-volt exciter and a 22,000-lb. steel plate flywheel 10 ft. in diameter. Fig. 2 shows this set, together with the starter and automatic liquid slip regulator. Exceptionally close power control is obtained on the flywheel set with this regulator. The set can be stopped in case of an emergency in a little over 2 min. with the current inrush approximately equal to full load current.

The 300-hp., 2,300-volt alternating-current auxiliary motor is provided for driving the hoist at night or on idle days. Special interlocking arrangements are provided so that the pinion which meshes with the drum gear must be entirely out of mesh before the main direct-current motor can be operated and the pinion must be completely in mesh before the auxiliary alternating-current motor can be operated. It is absolutely impossible to operate the control circuits for both motors at the same time.

Fig. 3 shows the complete station switchboard. An interesting feature is that in addition to the panels for the control of the main alternating-current and direct-current circuits to the flywheel set the contactor panels for the main direct-current motor and the alternating-current motor are incorporated in the switchboard. Power for the locomotives and cutting machines is pro-

FIG. 3

**Switchboard Control**

Both hoist motors receive power through this switchboard. The contactor panels in the middle of the switchboard control the alternating-current motor. Direct-current circuit breakers on the mine feeder are shown in the foreground.

vided by two synchronous motor-generator sets, one of 500 kw. capacity and the other 300 kw.

The electrical energy taken by this mine last October was 447,050 kw.-hr. This includes the line and transformer losses which are borne by the coal company and charged against the cost of power. This figure enabled us to determine that 5.11 kw.-hr. was used per ton of coal hoisted. This figure when properly distributed, was as follows: Main hoist, 0.95 kw.-hr.; auxiliary hoist, 0.06 kw.-hr.; fan, 1.64 kw.-hr.; motor-generator sets for cutting, hauling and pumping, 2.20 kw.-hr.; main screens, shop, car-pullers, and yard lighting, 0.26 kw.-hr. The hoisting equipment takes 0.77 kw.hr. per ton when hoisting steadily. This is 2.52 per cent less than calculated. The men are lowered into the mine and taken out with the main motor which causes the kilowatt-hours per ton taken by the flywheel set to be greater than 0.77 kw.-hr. The auxiliary motor saves over 20,000 kw.-hr. per month. This motor is used for night and idle day hoisting. It has sufficient capacity for handling a loaded car, and could be used for hoisting coal in case of trouble with the main motor. The daily tonnage would, of course, be greatly reduced.

The hoist is equipped with the following safety features: overwind protection; overspeed protection; automatic acceleration and retardation; slow speed control of main motor for man hoisting; an emergency switch at the ground landing for stopping the hoist in case the engineer starts the hoist in the wrong direction when handling men; automatic stopping in case of power failure. After an emergency stop the brake lever must be placed in the "set" position and the controller brought to the "off" position before the brake can be released.

The power costs at the Old Ben mines include the cost of purchased power, maintenance of transmission system, losses in transmission system, maintenance of transformer and converter stations, and switchboard attendance. When steam was used the boiler room labor and maintenance, fuel supplied, the piping system maintenance, engine and generator maintenance, and switchboard attendance were included. The switchboard attendant was usually the oiler for the engines.

While the plant at the No. 14 mine has been in operation only a few months, the indications are that the annual saving in power costs will be more than $50,000. An important part of this saving is due to the possible reduction of idle day costs with electric operation. The curves in Fig. 4 show how the power cost per ton varies with the number of days worked per month, or the running time. These curves compare a typical steam operated mine, with an electrically operated mine. The records are given for a period of thirteen months, from January, 1923 to January, 1924 inclusive. The same vertical scale is used in both illustrations.

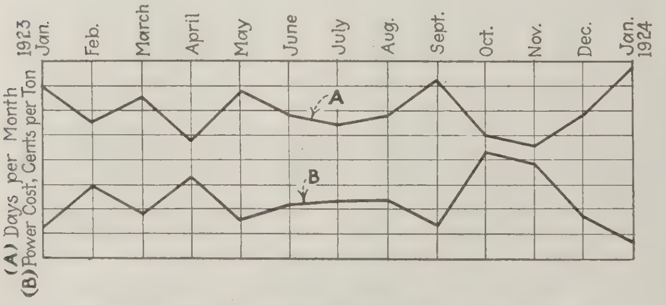


**Fig. 4—Steam Operated Mine Increases Costs**

Power costs per ton mount to high figures when output of mine is low. Curve *A* shows the number of days operated per month. Curve *B* shows power costs per ton.

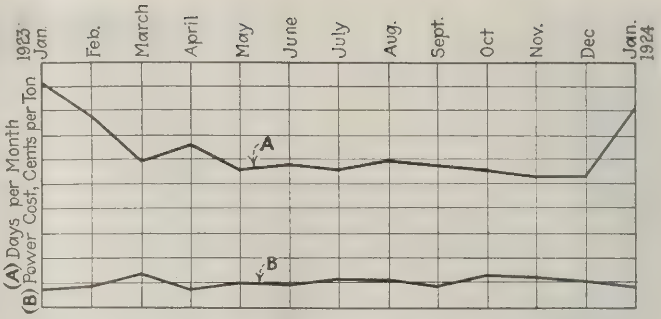


**Fig. 5—Electric Operation Reduces Costs**

Costs for electrical energy remain about the same even though the number of days operated per month vary between wide limits. The number of days operated per month are shown by curve *A*. Note how straight is curve *B*, representing power costs per ton.

It must be understood that these curves may not apply to every mine. For instance, where pumping or ventilating is the major part of the load, the idle day costs will vary more than shown. On the other hand, if pumping and ventilating is less than at the mines illustrated, the curve should vary less. But the important fact clearly stands out, that with electric operation the idle day costs can be kept under better control than with steam driven equipment. There are no boilers and steam engines that must be repaired on idle days or nights. Our experience shows the electric hoist requires less repairs and less "time out" in regular daily operation, than steam hoisting equipment.

## Experiments May Aid Indiana Coal

A thorough series of investigations and experiments with Indiana coal have been started by the engineering experiment station of Purdue University, the results of which are expected to prove of great value to users of Indiana coal. The work is being carried on under the direction of Dr. A. A. Potter, dean of engineering and director of the Purdue engineering experiment station. The following are actively engaged: Prof. A. W. Cole, Prof. J. L. Bray, W. E. Gray and J. P. Walstead.

Particular attention is being given to the steaming qualities of the coal. Boiler tests are being made at various industries using a variety of firing methods, including mechanical stoking, and all types of furnaces. Representative samples of Indiana coal are being taken from Indiana concerns and are being analyzed chemically. Professor Bray, a mining specialist with over ten years of experience with North and South American coal products, is making a critical study of mine methods used with a view of giving to mine owners the benefit of his long experience.

The investigation is entirely a fact-finding process and no opinion will enter into the investigations. Coal from practically every mining district in the state is being used, and it is the aim of those in charge of the work to set forth what can be expected from Indiana coal for steam generation. It is hoped that the results of the work may be published as a bulletin of the engineering experiment station. The Purdue men feel that Indiana coal compares favorably with the product of other middle western states, but that it is a question of proper furnace design and engineering knowledge that must be solved to utilize the Indiana product most efficiently.

# Operating Records Aid in Designing New Layouts

**By O. E. Kenworthy**
Field Electrical Engineer, Lehigh Valley Coal Co.,
Wilkes-Barre, Pa.

MANY LARGE POWER companies today have in their files records of the performance of practically every piece of electrical equipment in their service. Together with this they have cost and maintenance data with depreciation rates charged against each piece of electrical apparatus. Such records tell at a glance the value of each class of equipment.

Wide-awake manufacturing companies who have to depend largely on the continuous operation of their machinery keep constant records of the performance of all their equipment. These data include, primarily, a study of the main driving units or the real "works" of the apparatus. The records these companies obtain are their experiences. When the time comes for expansion of their plants the engineers in charge are able to cope with the problems easily and can make proper decisions relative to the exact equipment necessary to handle the job.

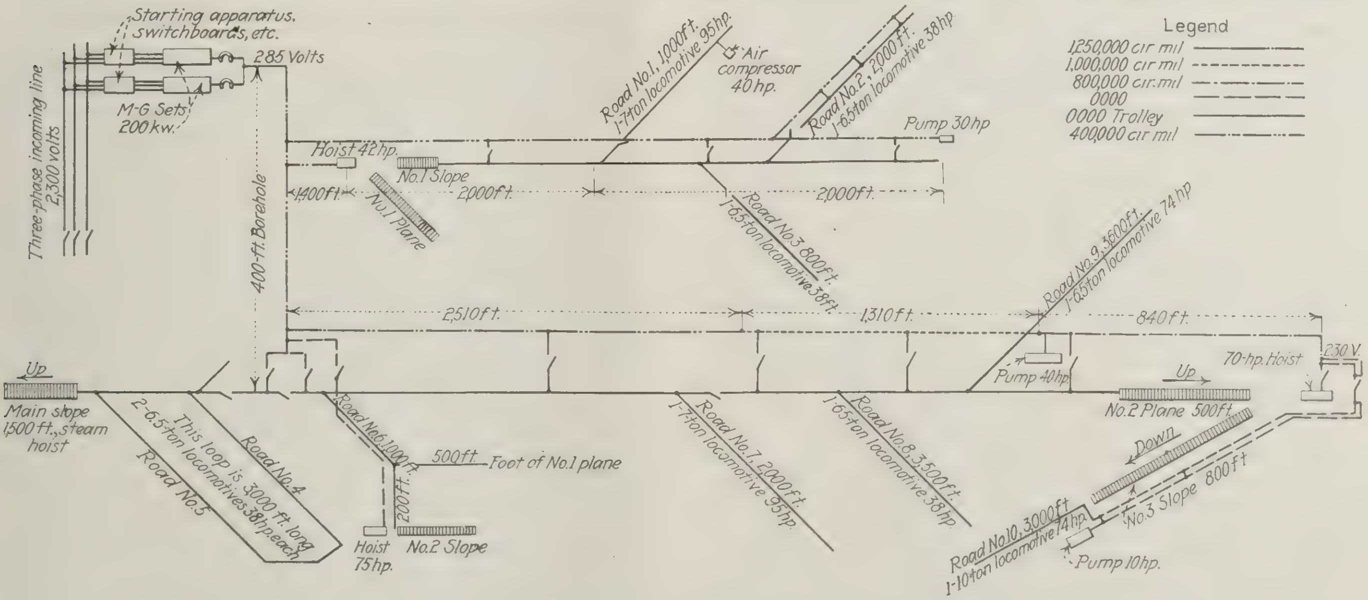
The keeping of such records and the compiling of statistics of the cost, maintenance and depreciation of electrical apparatus is just as important to these companies as the cost accounting done on the materials which they manufacture.

With this in mind let us turn to the coal mining companies. In the application of electricity to mining much thought has been given to the design of equipment for the service to which it is applied. Some valuable data have been collected and compiled in convenient form for the use of electrical engineers, and others connected with coal companies, relative to the operation of practically every type and make of mine locomotive, pump, fan, hoist, motor, coal cutter and electrical control apparatus in general. However, in most cases this information has been gathered by the manufacturers of the equipment. Due to the belief that mining is, in a general sense, a hazardous occupation, much electrical equipment has been installed in what might be termed a haphazard manner, with the belief that anything "gets by" in the mines. One must not, however, take the latter statement too seriously, for every mining enterprise has its own problems and individual solutions.

However, the following may be said with impunity: The application of electricity to mining is becoming of such importance and magnitude that it behooves electrical men in the mining field to make a careful study of their conditions. They should record whatever information is obtainable in such a manner that when necessity arises the figures so compiled readily can be used in not only estimating new work but in showing up the proportionate cost per ton of the operation and maintenance of different pieces of electrical equipment.

As an example of what may be done, let us consider the matter of feeders for haulage purposes inside the mine. In installing new equipment to electrify a haulage road, most engineers, I believe, will figure the requirements from a purely engineering standpoint or by good use of their memory install equipment similar to some other installation assumed to be giving satisfactory service. The difficulty with this is that due to uncertain conditions, pure engineering is not always applicable nor is a good memory always sufficient. Feeders may be installed that are too large, thereby increasing the initial cost; or they may be too small, increasing the copper loss. Also, the generating equipment may be of such capacity that for the diversity factor obtained more money is expended for such machinery than is really necessary.

Following along this line of thought I have in mind an installation of this kind that is worth while con-


Starting apparatus, switchboards, etc.
285 Volts
Three-phase incoming line 2,300 volts
M-G Sets 200 kw.
400-ft. Borehole
Hoist 42hp.
No.1 Slope
1400ft.
No.1 Plane
2000ft.
2000ft.
Road No.1, 1000ft. 1-7-ton locomotive 95hp.
Air compressor 40hp.
Road No.2, 2000ft. 1-6.5ton locomotive 38hp
Pump 30hp
Road No.3 800ft. 1-6.5-ton locomotive 38ft.
Legend
1,250,000 cir mil
1,000,000 cir mil
800,000 cir. mil
0000
0000 Trolley
400,000 cir mil
2,510ft.
1310ft.
840ft.
Road No.9, 3600ft. 1-6.5ton locomotive 74hp
Up
Main slope 1500ft., steam hoist
This loop is 3000 ft. long 2-6.5-ton locomotives 38hp. each
Road No.4
Road No.5
Road No.6, 1000ft.
500ft. Foot of No.1 plane
200ft.
Hoist 75hp.
No.2 Slope
Road No.7, 2000ft. 1-7-ton locomotive 95hp.
Road No.8, 3500ft. 1-6.5-ton locomotive 38hp.
Pump 40hp.
Up
70-hp. Hoist
230 V.
No.2 Plane 500ft.
Down
No.3 Slope 800ft
Road No.10, 3000ft. 1-10-ton locomotive 74hp.
Pump 10hp.

**Feeder and Trolley Layout of a Mine Having a Large Connected Load Shows How Distribution and Load Factors Make Possible the Use of Smaller Feeders**

Rarely, if ever, do all the motors in a mine draw full load current from the generators at the same time. This especially is true when large numbers of locomotives are used. Peak loads sometimes come on the lines in relays which indicate the movement of large trains of cars periodically started and transported to the mine opening or shaft.

**Automatic Circuit Breakers Function in the Most Advantageous Locations**

No one thing has contributed more to the efficient and successful operation of mine feeder and trolley systems than automatically controlled circuit breakers. Their use has, in most instances, increased the load factor of circuits and machines, thus enabling each piece of apparatus to work full time and cut costs.

sidering. At one of our mines two motor-generator sets, each of 200 kw. capacity and 275 volts are installed. From the substation the feeder drops down a 400-ft. borehole within 20 ft. of the building. From the foot of the borehole the cable continues for a distance of 3,670 ft. along the main gangway. For a distance of 2,510 ft. from the foot of the borehole this feeder is a 1,250,000 circ.mil rubber-covered wire. For 1,310 ft. it is 1,000,000 circ.mil rubber-covered wire and for 840 ft. it is a 500,000 circ.mil cable. Taps are made into the trolley at various points along this feeder and at other places branch feeders run off to hoists and pumps. The accompanying drawing shows diagramatically the layout of the feeder system at this colliery. The diagram by no means attempts to show the relation of roads or gangways or the location of equipment but is purely a schematic arrangement.

From the diagram it can be seen that there is a 662-hp. connected load consisting of locomotives and 187 hp. of hoist loads. A few pumps also are shown but adding a number of small dip pumps the total connected horsepower for pumps is 222. There is also one air compressor of 40 hp. capacity. This makes a total connected horsepower load of 1,111 or a possible full load current of about 3,500 amp. The main circuit breaker in the substation is set at 1,900 amp. and each machine breaker is set at 1,000 amp. The normal load on the station is 1,500 amp. One can see the diversity factor is fairly high. Again, observation has proven that the cables installed here are satisfactory from several viewpoints. One is that the voltage is good throughout the mine. Another is that the temperature of the cables does not rise appreciably except at times of peak loads. Even then it is barely noticeable by touching them with the hand.

It seems to me that if every operation were laid out in this manner and suitable data collected, we would soon have reliable information compiled from which good estimates could be made for new or additional applications. It is merely the purpose of these remarks to point out what can be done along such lines and show how practical operating results must be considered when using engineering theory.

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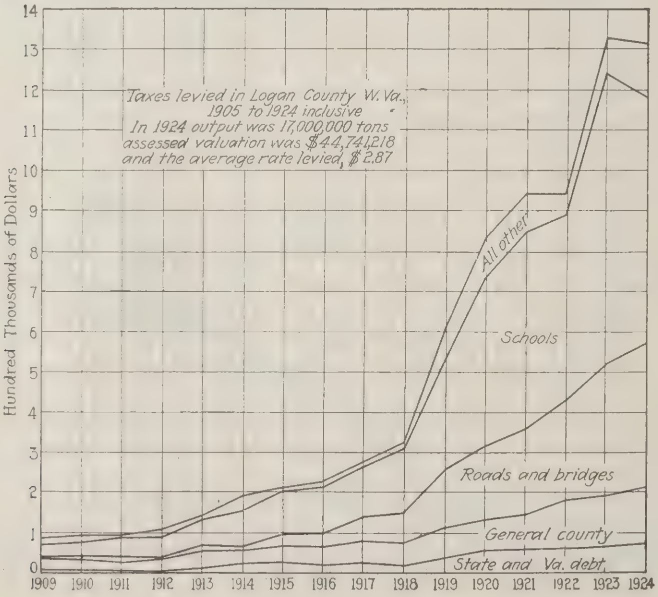
## Taxes in Logan County, W. Va., Are Sore Problem to Coal Men

Speaking on taxation at a recent luncheon of the Huntington chapter of the American Association of Engineers, A. J. King, president of the Aracoma Coal Co. and associated companies, made public some figures which typify the burden of taxation on coal mines. He said one operation, opened in 1911, and which declared the first dividend in 1913, has paid in dividends up to 1924, $310,000. In this same period there has been paid to the government $359,000, and it is now asking for $24,000 more. By way of comment Mr. King said this operation is considered a good one.



Another mine, opened in 1917, has paid the stockholders $120,000 in dividends and the government $123,000 in taxes. From this mine the government is asking for $24,000 more. A third mine, opened in 1914, has paid the stockholders $5,000 and the government approximately $43,000. The accompanying chart shows the proportional division of coal taxes for all Logan County, W. Va.

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## Ash Binds Coke and Modifies Byproducts

Coal that is too clean is of a friable character, and possibly the coke also that is made from a clean coal is likely to lack structure. Certain it is that some of our strong cokes are relatively high in ash, and it may be surmised that the ashy constituents have part in the creation of that crushing strength. Cobb and Marson have found that oxide of iron added to coal before coking gives coke that is smaller in bulk, more compact in structure, more finely porous and more resistant to crushing than that obtained from pure coal. This fact they enunciated at the meeting of the Institution of Gas Engineers in Great Britain. Caustic alkali, on the other hand, destroyed the coking properties, though sodium carbonate gave a compact, finely porous coke particularly resistant to crushing. The authors declared that the volatile matter left in the coke prepared at 500 deg. C. was considerably greater in a coke made up with oxide of iron than with pure coal. Dr. Lessing did not believe the quantity of gas that distillation of a coal would afford was affected by the percentage of ash, but the quantity of tar produced from the coal was influenced markedly, also the yield of byproducts, the kind of coke and the thermal value of the liquid products.

# Company Educates Its Men To Cut and Shoot Better

## New River Co. Gets More Lump, Makes Mines Safer and Miners Proüder of Their Workmanship As Result of Better Methods

**By C. P. Anderson**
Chief Inspector, New River Co.,
Macdonald, W. Va.

C. P. Anderson

THE shooting and cutting of coal necessarily varies so widely in different seams and under different conditions that no set of rules can be laid down for all companies. However there are methods of encouraging proper shooting that can be applied anywhere. The experience of the New River Co. in conducting a campaign among its men for better shooting to get more lump coal may be helpful to others. We not only raised our proportion of coarse sizes and increased our factor of safety but, best of all, we succeeded in making our men proud of their work as miners.

Several years ago we decided that we must have a bigger percentage of lump. We called on powder companies to furnish us with demonstrators. Also we used one of our foremen who had been connected with a powder company as salesman and demonstrator before coming with us. We made him explosives engineer. The first thing we did was to go over the fifteen mines, analyzing conditions of each separately, trying out different kinds of powder, and seeing how each would work under various conditions. We also tried out our machines to see how to cut to best advantage. We then laid down a set of rules which were put on a blue print with drawings showing how places should be cut and how holes should be placed.

After deciding what to do, we realized that the idea must be sold to our officials. So, after staying at a mine all day, we had meetings of the mine officials at night explaining to them the necessity of obtaining lump. We discussed all the mistakes we had found in the practice at this particular mine. We furnished each of the officials with a blue print. These loyal men went out with the determination to improve the quality of the coal from their mines.

The next thing was to sell the idea to the machine men, miners and all other employees. In addition to showing them in the mine what to do, we called meetings of the employees and explained the necessity of more lump, going into the details of our rules and asking the men to state their views. At these meetings we picked up quite a lot of information and absolutely sold the idea to the employees.

Some of the bad practices we had found were: Machine men cutting off the bottom and gripping ribs; miners shooting with no system, using an over supply of powder and not cleaning bug dust from under cuts; improper tamping, and disregard of safety rules.

### INSTRUCTING THE MACHINE MAN

The first man to deal with was the machine man. The struggle was to get him to keep his machine on the bottom and cut straight ribs. (Practically all of our machines are shortwalls.) The great objection to the machines gripping is that the miner has a tendency to point his shot holes correspondingly and such holes require more explosives. This shatters the coal. It is surprising to know how many excuses machine men can find for not cutting straight ribs; but after all straight cutting requires only a little more work and possibly the setting of extra jacks.

The next man we had to look to was the miner. Under our plan his first work is to clean the bug dust under the cut. For this, we make him use a long-handled shovel. After this dust is cleaned out it is loaded. He then places his holes. In wide work he drills a hole at an angle to both rib and top and 12 in. from the back of the cut. When the hole is ready, he places his shot. As he uses permissible explosives and electric detonators, the detonator is placed in the center of the charge and the full charge of powder is moved to the back of the hole.

Dummies are filled with clay. The first two are

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This article is from a paper read by Mr. Anderson at the Peoria (Ill.) convention of the Mine Inspectors' Institute of America, May 19, 1925.

**Here Are Some of the Results of the New River Co.'s Campaign for Better Mining**

On the left is a coal face that has just been "busted" with a breaker shot. In all narrow work one of the rib shots, drilled in straight and 12 in. from the rib, must be fired as a breaker shot. In this illustration is shown the coal after this shot has been fired. On the right is the same coal face after the coal has been pulled down following the rib shot.

pushed in easily and the next are tamped firmly to the mouth. This is done in order to get as much air spacing as possible. After this shot has been fired, the miner must load all coal out, then clean dust or coal from under the ribs and shoot one shot at a time. All rib holes must be drilled straight, 12 in. from the rib and 9 in. from the back of the cut. In narrow work, one rib shot is used as a "breaker."

In starting on this work we used 1¼x8 in. powder and bore holes 1¾ in. in diameter. In order to get more air space we increased the size of the auger bit to 2 in. Later, we cut down the size of the cartridge to 1⅛x8 in. After we had used this for a while we decided that miners were using more powder than was necessary. We then cut the size of the cartridge down to 1x8 in. This is the size we are now using. By standardizing on 2-in. bore holes and 1-in. powder we have reduced the amount of explosives and increased the amount of air space.

It is often said that miners will always put too many sticks in a hole. We are convinced that even if they use more explosive than is called for under the rules, it will increase the air space and give us lump coal just the same. By doing this we are able to control the air spacing by having the blacksmith control the size of the auger bit and by furnishing miners powder cartridges of the size we want them to use.

The next question is how to keep check on whether our rules are being carried out. We have daily reports showing the percentage of coal we are getting and at the end of each month we take the actual weight of railroad cars and figure monthly percentages. The officials of each mine are held responsible for the showing their mine makes. Our explosives engineer makes trips to the various mines, seeing that rules are complied with and he makes a written report on each mine. It is well to mention here that we have had reports from different mines where there were *no violations* of our rules. In addition to making his report, he talks to all the miners and offiicals, showing them what should be done and trying to keep everybody interested in the quality of our coal.

Some of our mines are non-gaseous, but we do all shooting with electric detonators and make miners use cables 100 ft. long. There are two reasons for using electric detonators. Safety is increased and we believe that because of the cost of electric detonators, miners will make each shot do its full job. With caps and fuse, we found miners were inclined to put in a number of pop shots which resulted in a very poor quality of coal. We furnish clay for all tamping and make miners use wooden boxes for carrying detonators and fiber canisters for powder.

The results we have obtained are gratifying. Today we are getting a good percentage of lump. Also we have a well-trained force of men and a record of so few accidents in handling explosives that we feel our efforts have not been in vain.

### Must Overcome Skepticism

Starting a program of this kind is like introducing anything else that is new. Miners are skeptical and must be shown that it means money to them to get a better product which results in better running time, and they must be shown that old methods must be done away with and up-to-date methods used. The thing that makes me feel best about our program is this: When I take anyone to the mines to show them our coal, all of our miners try to show how much pains they take to prepare their coal. They are getting proud of their work.

The trouble with most operators is that when times are good they forget this phase of the business, but when times are hard, they worry their men. Lump cannot be obtained this way. The need must be kept before the miners day after day and year after year, in good times as well as in bad. And above all, company officials must stand squarely behind the men charged with the duty of running this day-in-and-day-out program, just as they have done in our company.

## Creosote May Make Mine Cars Last Longer

Finding that the wood in mine cars is affected by dry rot when the cars are left idle, the Hillman Coal & Coke Co. is treating such wood with a preservative fluid of the creosote type with the hope of effecting a considerable saving.

# Miners Smash Anthracite Negotiations

**By Sydney A. Hale**

Special Contributor, *Coal Age*
New York City

Atlantic City, N. J., Aug. 4—The anthracite wage conference broke up today. Adjournment sine die was taken because the operators declined to reconstruct their sub-scale committee to suit the wishes of the miners. President John L. Lewis last Friday in a letter to S. D. Warriner, chairman of the Anthracite Operators' Conference, demanded that Mr. Warriner and S. J. Richards, veterans of former years of negotiations, assume seats on the sub-scale committee on the ground that the existing committee was made up of "supernumeraries" who had power to agree to reductions in wages but nothing else. Mr. Warriner on Monday insisted the operators' representatives were clothed with full power and declined to meet Mr. Lewis' demand.

In a long statement Lewis asserted the operators wanted to reduce wages in order to increase profits and accused them of blocking every constructive suggestion to cut the cost of coal to the consumer. He said the operators' refusal to join the miners in asking the Interstate Commerce Commission to start another freight rate investigation bolstered up the charge. He attacked the operators for not submitting statements of administrative expenses when the miners demanded them. He renewed his charge that the operators will profit largely by a strike in spite of their claims that prices will not be increased at mines and said the public is already paying through the nose in higher prices since Aug. 1.

Lewis said the miners object to arbitration because "we have had previous experience with arbitration with operators. The anthracite mine workers have lost $60,000,000 a year in wages over a period of two years to acquire the knowledge they now have concerning the anthracite operators' well known policy of keeping close to the arbitrators."

After Mr. Lewis had finished his letter which closed with the declaration that the miners "are of the judgment that it is utterly futile to continue further these scale negotiations" the operators present retired for a private conference.

When they returned to the committee room they asked Mr. Lewis this question: "Are we to understand from your letter that in view of our opposition to an increase in wages and the check-off you refuse to continue negotiations?" The miners finally admitted that that was their position.

The operators then asked whether in view of that answer the miners were willing to submit the matters in dispute to arbitration. In reply the miners referred them to Mr. Lewis' letter. The adjournment of the joint subcommittee sine die followed on motion of the miners.

The next step is a matter of speculation. Washington or Harrisburg may seek to bring the joint committee together again. Although no statement of any kind has been made by the operators it is known that any proposal to have Governor Pinchot again intervene as he did in 1923 would meet with their violent opposition.

The July 28 session opened with an attack upon the advertising campaign inaugurated by the operators to tell the public that a suspension Sept. 1 was indefensible because the producers were ready to arbitrate if direct negotiations failed. The miners seemed to assume that the "gigantic sums" so expended ought to be applied to wage increases. Operators declared the advertising costs would represent less than 10c. a year on the pay envelope of each worker in the mines. They said the expenses would not be a tax upon production cost but upon profits and represented far less than the loss due to a single day's suspension.

The miners wanted to know all the items entering into the cost of production and what these items meant in percentages and in actual dollars and cents. The operators' statement that the miners' demands, if granted, would increase the price of domestic coal at the mines $2 per ton did not set well with the union members of the committee, although the figure was not directly challenged.

After further inclusive discussion on arbitration and the restriction of output, the subcommittee began a consideration of demand No. 3, which was not laid aside until Thursday. This demand in part reads as follows:

> We demand uniformity and equalization of all day rates and that the consideration rate of each colliery shall be equivalent to the average daily earnings of contract miners under normal conditions and that for deadwork performed by the contract miner he shall be paid this consideration rate; and that skilled mechanics, such as carpenters, blacksmiths, etc., shall be paid the recognized standard rates existing in the region; and that engineers and pumpmen who do repair work on their engines and pumps shall be paid the recognized mechanics' rates for this repair work; that first-class hoisting engineers shall be paid a more substantial rate of wages in keeping with the responsibilities and nature of the work; and that all daymen shall be paid time and one-half for overtime and double time for Sundays and holidays.

Although the question of uniformity has been before the operators and the miners for several years, no definite action has ever been taken. The old rates upon which the 1903 award was based were the fruits of independent, individual bargaining between employer and employee. Each succeeding adjustment has added flat or percentage increases to those rates. As a result of this crystallization, twenty-three collieries in the Lehigh district, for example, pay thirty-seven different hourly rates ranging from 58.7 to 75c. per hour to carpenters; twenty-four collieries pay twenty-one rates ranging from 57.7 to 75.6c. per hour to trackmen.

In their demand for equalization and uniformity the miners have lifted the so-called skilled workmen in crafts not peculiar to coal mining out of the general group of day workers and insist that these special classes receive the same hourly rates as are paid to craftsmen in the same line in outside industries in the region. Taking carpenters as typical of these special groups, the miners assert that the carpenter in the building trades earns as much in 200 days as the mine carpenter does in 300 days.

The operators answer that the mine carpenter enjoys continuous employment; the outside carpenter, intermittent work. They cite the fact that in the fall and the winter these outside carpenters receiving an hourly rate approximately 50 per cent higher in the building trades apply for work at the mines despite the disparity in hourly rates. The miners take issue on the claim of intermittency, contending that the outside carpenter enjoys practically full-time employment.

In explaining their position with respect to equalized rates for day labor peculiar to the coal industry spokesmen for the miners say they are limiting their demand to uniformity in rates for the same class of labor in the same colliery. In other words, at this stage they are not attacking, for example, the fact that sixty-five collieries in the Northern district have fifty-two different rates for jig runners or that twenty-seven mines in the Southern district have thirty rates for stablemen and eighteen operations in the Middle field show sixteen different rates for tracklayers. What they are attacking is the existence of two or more rates for ostensibly the same class of labor in the same colliery. That these variations, where they may exist, represent relative skill is a possibility not considered.

The miners' idea of the solution of the situation is to raise all the rates for the same class of labor to the highest rate paid for that work by the individual operation involved. Each separate colliery, as distinguished from each separate operating company, is the unit upon which they propose to work.

Consideration of this demand is complicated at the outset by a dispute as to the responsibility for the failure to bring this question to a head before this time. The demand itself is not new. In 1920 the miners asked that "a uniform wage scale be established so that the various occupations of like character at the several collieries shall command the same wage."

The Anthracite Coal Commission directed that the Board of Conciliation make a study of the situation and report to the joint conference not later than March 31, 1922, when the contract based on the Commission award expired. This study has never been made because all the rate sheets of the individual collieries have not been filed with the Board. The miners allege that the operators are to blame for this. The operators heatedly retort that the refusal of certain local unions to join with them in certifying rate sheets made filing impossible. This, in turn, spokesmen for the union deny, and add that they are weary of the interminable delay and will demand that the equalization be written into the new agreement and not, as in the past, be left as a subject for future study and report.

The section of demand No. 3 covering payment for deadwork performed by contract miners and extra pay for overtime and Sundays and holidays renew demands rejected in previous negotiations. The principle that "rates paid for an employee's principal occupation should obtain when, for any reason, he is occupied temporarily in another kind of employment" was held to be unsound by the Anthracite Coal Commission in 1920. The award that year dismissed the miners' arguments with the declaration that "no adequate reason has been presented why the rate prevailing for any type of work should not govern in the case of all persons engaged in that work."

A similar fate overtook the demand for punitive overtime. The Commission held that there are certain necessary services in connection with the operation of the anthracite industry which could not be covered by the basic eight-hour day and that this fact had been recognized in the agreements entered into whereby employees who work a longer day are paid the usual rates for overtime. The rejection of this demand at that time provoked a bitter protest from Commissioner Ferry, the Mine Workers' representative, who maintained that it was only the inadequacy of the regular rates which made men willing to work longer hours. The 12-hour day, criticized by the 1920 Commission and condemned by the U. S. Coal Commission in 1923, has since been abolished. Only a very small percentage of the total employees came under its provisions.

**J. B. Warriner**
Member of the Operators' Subcommittee in Anthracite Wage Conference.

The demand for double time on Sundays and holidays was rejected in 1920 on the same general line of reasoning—the necessity of continuous operation. For over 20 years, however, provision has been made for the relief of workers in seven-day occupations and that arrangement was taken into consideration by the 1920 Commission.

The miners also brought up that part of their demand No. 3 which calls for the establishment of a five-day week. This demand is a heritage of the nationalization movement which threatened to engulf the United Mine Workers' organization during the brief régime of Frank J. Hayes. A five-day, 30-hour week was one of the demands made in 1920, but it was quietly dropped before the miners' case was presented before the Anthracite Coal Commission.

Union spokesmen at Atlantic City asserted the five-day week would lessen the strain on the workers and reduce accidents. At the same time they disclaim any intention of opposing overtime hours at punitive rates "in emergencies." The operators, of course, object to an agreement that would prevent steady production, except at a premium, during periods of brisk demand. In view of the readiness with which conservative leaders of the union have shelved demands of this type in the past, it is not reasonable to anticipate any last-ditch fight by them for this particular section of their program.

On Thursday the subcommittee, temporarily at least, began and concluded its deliberations on demand No. 4 and started to canvass the situation on demand No. 5. Demand No. 4 asks, first, the substitution of the per ton for the per car basis of payment; second, the fixing by mine committees and colliery officials of the permissible percentage of refuse per car, and, third, the abolition of "the present unreasonable penalties and dockages."

At the present time, between twenty and twenty-five collieries out of the 300 operations in the region pay

**Thomas Thomas**

Member of the Operators' Subcommittee in Wage Negotiations at Atlantic City.

upon a tonnage basis. The payment in these cases is upon the so-called miner's ton, which ranges from 3,100 to 3,900 lb. The miners assert that this ton was established in the days before there was a market for the small sizes and that, therefore, it covered not only the refuse but the unmerchantable small coal which went to the culm banks. Now, they argue, the juniors from pea down are sold by the operators and it is only fair that the workers be compensated. Based upon this theory, they feel that their demand that the miner receive the same pay for 2,240 lb. as he now gets for the miner's ton is quite reasonable.

The operators, however, contradict this version of the origin of the miner's ton. When those bases were being established, they say, the underground worker raked the coal he had brought down with a rake with tines placed 2 in. apart. Coal passing between the tines was not loaded. The payment made, therefore, was for the large coal; the fines went to the gob piles. Any fines going to culm banks were the product of degradation in the breakers. In other words, the system of operation and payment was suggestive of the old lump-coal basis formerly prevailing in the bituminous fields.

Now the miner or his laborer loads all the coal brought down and is paid for it, so that the operators consider the miners' explanation at variance with the facts and their argument without merit. To grant the same rate for loading a gross ton as is now paid for loading a miner's ton, plus the 10 per cent increase asked for contract workers, would mean increasing the labor cost in cars at the face 54 per cent where the miner's ton is 3,136 lb. and still more where that ton is greater.

This demand has been pressed in one form or another since 1902 and has never been granted either by the operators or by government commissions. To the man in the street a ton different from the familiar gross and net tons of his experience is hard to understand. It seems an arbitrary basis to adopt—and it is an arbitrary basis. But, as the Roosevelt Anthracite Strike Commission pointed out, the adoption of any unit of measuring compensation, whether it be a ton, a car or a yard, is necessarily arbitrary. It is a natural assumption, however, that when rates were first fixed upon the basis of a miner's ton, they were fixed at a higher point in dollars and cents than would have been the case had the basis then adopted to measure compensation been a gross ton.

In the arguments in support of their position the miners also brought in the question of topping. They contended that much of the 6-in. square topping which the operators demand is lost during the course of underground haulage. The statement was made by one of the district presidents that the equivalent of between 300 and 900 cars were so lost every half-month in some collieries and that company loaders later went through and loaded such coal found in the haulageways. It was claimed that if payment was upon a weight instead of a car basis, topping would not be demanded. The only exception that the miners would make to the demand for the extension of the tonnage system of payment was in the case of work in steep pitching veins, where, it was conceded, the yardage basis was the only satisfactory method.

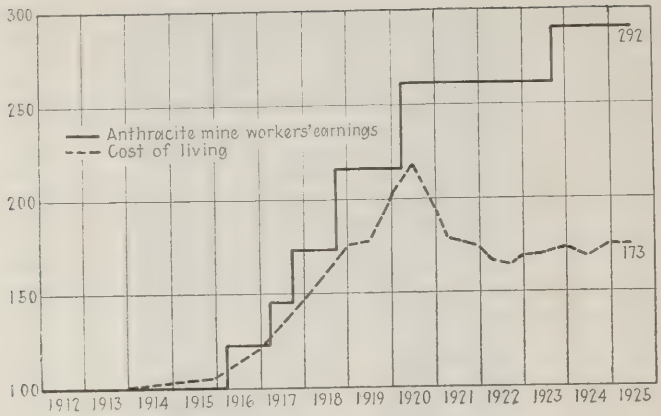
The operators did not deny directly that the tonnage reloaded from haulageways might run as large as charged by the miners. Their answer was that much of this loss could be avoided if the miners would load and top their cars properly and pointed to the fact that in collieries where payment was on the ton basis cars were topped much more heavily and in such a manner that there was little or no spillage. In cases where the loss is due to the wreck of a trip or to a single car jumping the track, the miner, they said, does not suffer because he is given credit for a full load on such cars by the check weighmen. Instead of regarding the coal reloaded by company men in the roadways as so much "velvet," the cost, plus the price already paid to the contract miner, often exceeds the value of the coal.

The operators also took sharp issue with the demand of the miners for the abolition of existing systems of penalties and dockage and the institution of agreed permissible maxima of refuse at each colliery. The miners alleged that, under the present system, they are the victims of arbitrary dockage and penalties. The operators answered that ample protection against injustice is afforded the workers through the mine grievance committees and the Board of Conciliation. The producers construe the agreement with the men to call for the loading of clean coal. At the same time they recognize that some seams run higher in impurities than others and say they take this into account in deciding what constitutes "clean" coal. But to fix permissible maxima of refuse would, in their opinion, simply invite the loading of dirty coal.

Demand No. 5 calls for:

> ......payment for all sheet iron, props, timber, forepoling, extra and abnormal shoveling where such is not now paid for; and that the same full rates shall be paid for skipping as for splitting pillars, both advancing and retreating; advanced openings driven for development purposes shall be paid for on the proper basis covering such work; that in thin veins, where the pitch is not sufficient to carry the coal on the bottom, the distance of the working places shall not exceed 150 ft.

The first clause quoted is practically a repetition of a demand denied by the 1920 Commission. The basis for this demand is found in the fact that in some cases compensation for setting up props, etc., is included in the car or yardage rate and in others these items are paid for separately. The wording of the demand suggests that this extra labor is not always paid for, but that such is the case the employers specifically deny. As they understand the miners' position, the workers would not be satisfied with splitting up the car or yardage rates which cover these extra demands into separate items, but are seeking to have extra compensation added on to such car or yardage rates.



**Do Anthracite Miners Need More Pay?**

This chart traces the steady rise of wages and the variations of the cost of living, taking 1912 as a base. Miners' representatives have persistently held that a wage reduction would lower the standard of living.

In other words, every one of these so-called minor demands of technical character would, if granted, add to the cost of production. It is estimated that the "minor" demands so far considered would add $1 per ton to the cost of coal.

Conclusion of the consideration of demand No. 5 and a discussion of demand No. 6 absorbed the time of the subcommittee on Friday. The debates centered around free jack hammers and air, free electric lamps and batteries for shot-firing and the establishment of uniform minimum rates of 20c. per inch for refuse in all kinds of mining up to 10 ft. wide, and 30c. per inch for blasting top and bottom rock. A demand for a minimum of 17c. per inch on refuse was denied by the Anthracite Coal Commission in 1920 and that body also refused to entertain the plea that the operators should supply free tools to company men.

The spokesmen for the miners claimed that present rates for refuse range from 11c. up and that blasting rates range from 12 to 30c. They attacked the absence of a fixed minimum as unfair to the men and argued for the abolition of the allowance system. To grant these demands, declared Major Inglis, "would add, at a conservative estimate, $30,000,000 a year to production costs, this sum to be distributed among about one-third of our employees, or about $650 a year apiece. This would be added to present rates which already fully compensate these workers."

In discussing the demand for jack hammers, the miners asserted that these machines were coming into more general use and enabled the companies to work places that could not be worked successfully under old methods of mining. The initial cost of the jack hammer was placed at $200 and the upkeep at approximately $10 per month. The cost of the compressed air to operate the machines was estimated at 5 per cent of the gross earnings of the miners using the hammers. The employers answered that less than 5 per cent of their workers used the jack hammers and that the adjustment of wage rates took into account the long established practice under which the miners supplied his own tools. Electric shot-firing in certain places, they pointed out, had been required by law as a safety measure and they could not be held responsible for the cost.

The first rumblings of the storm which threatened to break up the negotiations came on Friday with a brief statement from President Lewis of the United Mine Workers, who had returned to Atlantic City the previous night after having absented himself from all meetings of the subcommittee except the first one held July 10. Mr. Lewis signalized his return with the announcement that "it is regrettable that no progress of any character has been made by the conference. The operators occupy their time with denying everything and yielding nothing. They continue to mouth their ancient phrases about wage reductions and arbitration."

"When the miners' representatives come into conference with demands that would add about $100,000,000 a year to the cost of production, while every competitive and economic condition demands a decrease in cost," retorted Major Inglis for the operators, "it naturally requires some time to bring the discussion within the realms of reason. Any delay that has taken place is solely due to the deliberation with which the miners' representatives presented their case in the earlier sessions and the irrelevant matters introduced by them. The delay is certainly not due to us since the miners, as plaintiffs in the case, have had the floor since negotiations began.

"As to the substance of Mr. Lewis' statement, he apparently thinks that the only way of arriving at a settlement is to concede demands, however unreasonable they may be. As to the tone of his statement, it may be considered as part of a plan to aggravate, rather than harmonize, the situation."

Mr. Lewis' next move was to write a letter to S. D. Warriner demanding that Mr. Warriner and W. J. Richards sit in with members of the subcommittee on Aug. 4. The letter took up the strain that the miners' camp has been singing for a month—that the committee of operators at Atlantic City were "second string" men without power to act. Mr. Lewis wrote that if Messrs. Warriner and Richards indorsed the position of the subcommittee "it would the more quickly enable the Mine Workers' representatives to effectuate a discontinuance of the farce."

On Monday of this week Mr. Warriner, as chairman of the Anthracite Operators' Conference wrote Mr. Lewis refusing to change the personnel of the operators' committee at Atlantic City. He said that the present personnel is clothed with full power and is in no way delaying possible progress toward a peaceful settlement. The members are of the same status in the industry as Mr. Warriner and Mr. Richards were when they began their long terms as negotiators of contracts years ago.

Mr. Warriner refuted Lewis' claim that operators are trying to bring about a strike. He called Lewis' attention to the operators' proposal at the beginning of negotiations, July 9, that both sides agree there shall be no stoppage of production Sept. 1. Mr. Warriner renewed the operators' proposal that disputed points be referred to an arbitration board of "impartial persons."

He warned President Lewis that he is taking upon himself a "grave responsibility" if he insists upon breaking up the conference simply because Warriner and Richards do not join the sub-committee. The operators are not trying to dictate the personnel of the miners' committee, said Mr. Warriner, and they see no reason why the miners should dictate the operators' committee.

# News Of the Industry

## British Coal Strike Staved Off by Government Plan to Aid Operators Nine Months; Union Feels Victorious

The British coal miners' threatened strike, together with a proposed sympathetic general strike which might have paralyzed the nation, has been postponed and possibly prevented. The government averted the crisis at the last minute by agreeing on July 31 to guarantee financial assistance to the mine owners for nine months. In return for this the operators withdrew their wage-cutting notices from the pitheads and union labor sent up a great shout of victory. The notices were to have been effective Aug. 1. A government commission is to be appointed at once to conduct a two-weeks investigation of the whole situation. There is a feeling of confidence in England that this commission will arrange an agreement between miners and operators to provide for a winter's work at present wages under the government subvention. Thus the black cloud over England appears to have been lifted.

The course of Prime Minister Baldwin in offering to subsidize the mine owners in order that British mines might operate and British coal might meet foreign competition is criticized bitterly in some quarters. Mr. Baldwin is said to have surrendered to the bludgeoning of union labor directed by bolshevist minds. It is pointed out, however, that the approximate £10,000,000 which the subvention may cost before next May 1 will be far less than the probable cost of doles to workless men who would be thrown out of jobs by the threatened strikes and that any course of the government that keeps the mines working would be less expensive than the industrial collapse which appeared imminent.

Under the last-minute plan, whenever wages to miners, calculated in accordance with the recognized division between wages and profits, would be lower than the present minimum scale, the deficiency is to be made up to the mine owners from the government exchequer. The exact cost of this deficiency, of course, is not calculable now, but the estimate of £10,000,000 is generally accepted. This, naturally, comes out of the pockets of the country's taxpayers. Newspapers are commenting on the effect that will be created if other struggling industries also demand government aid—from the taxpayer—as well.

The House of Commons on July 31 passed the unemployment bill which amends the doles act originally passed under the administration of the MacDonald labor government. The amendment safeguards the doles fund in an effort to reduce the amount paid to the unworthy. The labor party strongly opposed the amendment, saying 70,000 men entitled to doles would be deprived of that aid now. The government expects to save £400,000 a year. A large share of the funds that have been paid out in doles has been going to jobless coal miners.

### Coal Board to Compose Ruhr Coal Troubles

A commission will be created to pass on the difficulties between operators and the employees in the Ruhr coal field and a conference of the mine owners and miners will be summoned this week to determine measures for mitigating unemployment distress. This was decided after a long conference at the Ministry of Labor, July 28, between the representatives of the German Government and the spokesmen for the coal miners. The official communiqué failed to mention whether the miners can be persuaded to work an extra half hour daily, one of the most important points at issue.

From an authoritative quarter it is learned that the Reichsbank has offered to advance credits aggregating 15,000,000 marks a month to the head of the coal industry, though the mine owners ask 500,000,000 marks as the absolute minimum required to keep the industry afloat. Their normal monthly turnover, they point out, is 120,000,444 marks, of which nowadays they are not realizing more than about 60 per cent.

Coal and coke stocks in the Ruhr have accumulated to the unprecedented figure of about 9,000,000 metric tons. With coal selling at an average of about 15 marks a ton the value of stocks on hand is approximately 135,000,000 marks. These stocks the operators want the government to take over. Chancellor Luther, however, considers that they have painted the situation too darkly. He is understood to regard 200,000,000 marks as sufficient to tide over the present crisis.

As regards unemployment, it is stated that while only about 40,000 miners are out of work now, the numbers are bound to increase within three months to 100,000, which means 500,000 persons dependent on charity for existence.

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**Wm. Clive Bridgeman**

First Lord of the Admiralty, who was named to act as mediator in the deadlock of British coal operators and miners that threatened to result in a strike before Premier Baldwin stepped in and saved the situation by extending to the operators a government subsidy for nine months.

### E. S. McCullough Tries to Form Pittsburgh Union

In its effort to get the miners of western Pennsylvania to organize a district independent union, the Pittsburgh Chamber of Commerce has employed E. S. McCullough as the "industrial aide" of the chamber's Citizens' Committee. McCullough, who spent most of his life in the service of the United Mine Workers, is 55 years old and for 40 years was either a miner or a labor official. In 1897 he was president of Sub-District 2 of the United Mine Workers in Ohio. Since then he has been president of the Michigan district and was international vice-president in 1909. He led the Meyersdale strike which ran from 1903 to 1905, and directed the 1910 strike in Nova Scotia.

He has established headquarters in Pittsburgh and is trying to line up the jobless miners of that territory to form a union which will make an agreement with the operators in order that the mines may operate. Only by this means can prosperity be returned to western Pennsylvania, in the opinion of the Chamber of Commerce.

## Hammond Counsels Against Interference in Coal

### By Paul Wooton

Washington Correspondent of *Coal Age*

"Since settlements reached by political pressure rarely possess elements of permanency and frequently are not economically sound, it is very much better to have these differences settled within the industry."

"The talk of a coal shortage bears the brand of manufactured stuff. There is a great deal of coal in storage. Even in New England little inconvenience would be experienced before midwinter."

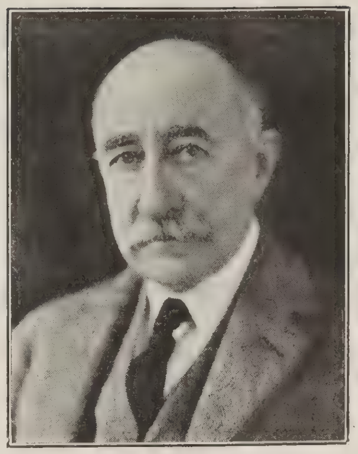
"I cannot conceive on what grounds a bituminous walkout could be justified since the union has signed a three-year agreement at the war-time wage scale."

These are quotations from John Hays Hammond, the renowned mining engineer who was chairman of the Harding Coal Commission. They are embodied in an interview with this correspondent, who was sent for the purpose by *Coal Age* to Gloucester, Mass., where Mr. Hammond has his summer home. This interview was given to the daily press at the time.

Mr. Hammond revealed that President Coolidge's position probably is "that it would be premature to assume that this dispute is not going to be settled within the industry." In that connection Mr. Hammond counseled: "The public should grant with patience every opportunity to the parties at interest to settle the controversy themselves." He also calls attention to the fact that "the attitude of the public influences profoundly such negotiations as those now in progress and it largely controls the state of the coal market. If the people become panic-stricken and bid up the price of coal they simply play into the hands of that small and selfish element that desires a strike.

"A suspension of anthracite production would have to last many weeks before it would be felt seriously," said Mr. Hammond. "The strike of 1922 lasted five months, and even then the supply was 60 per cent of normal. Even in New England little inconvenience would be experienced before midwinter.

"All elements leading up to the suspension in 1923 were analyzed carefully by the Fact-Finding Coal Commission which was sitting at that time. As a member of the commission I have first-hand knowledge of what transpired during that comparable period. We discussed the various phases of the matter at great length, both with the operators and the leaders of the mine workers. The issues between the two parties were the same then as now. After careful and extended study the commission made its recommendations to President Coolidge as to how the controversy should be dealt with. Those recommendations apply equally well to the present situation, and the President is thoroughly familiar with them."



**John Hays Hammond**

Mining engineer who formerly served as chairman of the Harding Coal Commission believes operators' and miners' differences should be settled within the industry.

## Hard-Coal Operators Advise On Combustion Problems

In addition to two traveling exhibits the purpose of which is to show consumers how to use all sizes of anthracite in the most economical way, the anthracite coal operators have inaugurated an engineering advisory corps known as Anthracite Coal Service. This corps is made up of combustion engineers whose experience and advice have been placed at the service of large purchasers of fuel for heat and power. Some of the problems they have already solved are the proper fuel for new buildings, better ways of using all sizes of anthracite in a dozen different industries and improved methods of stoking in several hundred different heat and power plants.

These combustion engineers are stationed in the following cities: New York (122 Greenwich St.); Philadelphia (Atlantic Building, 260 S. Broad St.); Boston (Chamber of Commerce Building); Washington (1415 I St. N. W.); Providence (Caesar Misch Building); Albany (250 Arkay Building) and Syracuse (208 Gridley Building). Their service is free to all who care to avail themselves of it.

James J. Storrow, of Boston, Mass., who was Federal Fuel Administrator for the New England States during the World War, was unanimously elected president of the Boy Scouts of America at the fifteenth annual meeting of the national council, held in New York recently. Mr. Storrow pledged his personal credit during the war, when immediate action was necessary to relieve the acute coal shortage in New England, and subsequently shipped and distributed at his personal risk more than a million tons of coal, a gross business exceeding $10,000,000. He is a member of the banking firm of Lee, Higginson & Co., chairman of the board of the Nash Motors Co. and director in many corporations.

## Byproduct Coke Output Off 9.6 per Cent in 1924

The quantity of coke produced at byproduct ovens in 1924, according to the Geological Survey, was 33,983,568 net tons, a decrease of 9.6 per cent as compared with the output of the preceding year. In addition to the large coke there were produced 2,950,810 tons of breeze. The quantity of coal charged into the ovens was 49,061,339 tons. The average yield per ton of coal charged was therefore 69.3 per cent of merchantable coke and 6 per cent of breeze.

AVERAGE YIELD OF COKE AND BYPRODUCTS PER NET TON OF COAL CHARGED IN BYPRODUCT OVENS IN THE UNITED STATES, 1915 AND 1924

| Product | 1915 | 1924 |
|---|---|---|
| Coke, pounds | 1,440 | 1,386 |
| Tar, gallons | 7.1 | 8.6 |
| Ammonium sulphate (or equialent) pounds | 20.1 | 22.2 |
| Light oil, gallons | 1.5 | *a* 2.9 |
| Gas: | | |
| Total, M cu.ft. | 11.0 | 11.0 |
| Surplus sold or used, M. cu.ft. | 4.3 | 6.1 |
| Burned in coking process, M. cu.ft. | 6.3 | 4.7 |
| Wasted, M. cu.ft. | .4 | .2 |

(*a*) Average for plants now recovering light oil.

Three-fourths of the total, or 24,524,000 tons, was used by the producer in affiliated blast furnaces or other operations. The sales amounted to 9,848,834 tons. Of the furnace coke sold, the greater part went to affiliated corporations. There were, however, merchant sales amounting to 1.591,000 tons. Sales of foundry coke were reported to be 1,554,000 tons, valued, at $13,425,000; and sales of domestic coke, 2,813,000 tons, valued $20,063,000. For industrial and other uses than foundry, furnace, or domestic fuel the sales reported were 1,556,000 tons, with a value of $11,855,000. These figures are subject to slight revision on receipt of further information by the Survey.

Coking operations in 1924 show increased yields in tar, light oil and ammonia.

BYPRODUCT COKE PRODUCED AND USED BY THE PRODUCER IN THE UNITED STATES IN 1924

| State | Produced | | Used by Producer in Blast Furnaces, etc. | |
|---|---|---|---|---|
| | Net Tons | Value | Net Tons | Value |
| Alabama | 4,386,372 | $16,563,223 | 3,888,760 | $14,137,294 |
| Colorado | 523,405 | (*a*) | 505,846 | (*a*) |
| Illinois | 2,355,474 | 20,187,519 | 1,327,820 | 10,799,086 |
| Indiana | 4,272,435 | 30,394,497 | 3,831,406 | 26,878,239 |
| Maryland | 810,118 | (*a*) | 693,588 | (*a*) |
| Massachusetts | 397,640 | (*a*) | 5,446 | (*a*) |
| Michigan | 1,770,547 | 11,914,028 | 535,296 | 3,817,866 |
| Minnesota | 514,764 | 4,903,891 | 199,253 | 1,695,269 |
| New Jersey | 869,120 | (*a*) | 51,850 | (*a*) |
| New York | 1,600,669 | 11,108,944 | 556,283 | 3,888,027 |
| Ohio | 5,723,074 | 31,008,209 | 4,538,383 | 24,724,264 |
| Pennsylvania | 8,426,155 | 34,674,512 | 7,145,581 | 28,046,102 |
| Tennessee | 75,720 | 376,328 | ........ | ........ |
| Utah | 97,350 | (*a*) | 93,704 | (*a*) |
| Washington | 39,903 | 283,710 | 34,815 | 243,705 |
| West Virginia | 998,914 | 4,402,186 | 590,428 | 2,607,708 |
| Kentucky, Missouri, Rhode Island and Wisconsin | 1,121,908 | 9,387,943 | 25,474 | 205,634 |
| Undistributed | ........ | 20,485,019 | ........ | 8,795,193 |
| | 33,983,568 | $195,690,009 | 24,523,933 | $125,838,387 |

(*a*) Included under "Undistributed."

# Tear Gas Used in West Virginia Labor Struggle; Panhandle Quiet

That tear gas discharged from a "billy charge" by mine guards employed by the Jamison Coal & Coke Co., near Farmington, Marion County, in the northern West Virginia strike zone, was alleged last week by officials of the United Mine Workers in telegrams to Secretary of Labor James J. Davis at Washington, D. C., and to Governor Howard M. Gore at Charleston. As a result more excitement prevailed than at any time since April 1, when non-union coal miners were called on strike.

Although the alleged offense occurred on the picket line at mine No. 9 early Monday morning, July 27, the information concerning the incident did not develop until later in the week. In the telegram to Secretary Davis the union miners alleged that 35 people were gassed and that one woman, Mrs. July Srinto, an occupant of the union barracks, was seriously affected. In the telegram to Governor Gore, the miners pointed out that both the state police and sheriff's deputies were absent for a period of time.

W. Clarke Dobbie, general superintendent of the Jamison company in West Virginia, made a complete denial of the story Monday, July 27, but when the guards returned that night he learned that the "billy charge" was accidentally put off, and says that the guards got the full force of the gas. The story told by the guards is that a clip on the mace was accidentally snapped while one of them was riding in an automobile from the picket line back to the mine. The guards deemed the matter too trivial to report.

Fairmont newspapers assert that the mine guards' account of the incident was not in line with the facts, and that a number of pickets were actually gassed by the mine guards. This view is held by deputy sheriffs and state police, who made an investigation.

### Hard Coal Miners Praise Bittner

A story published in newspapers to the effect that the hard-coal miners had deserted the bituminous union coal miners in northern West Virginia, and that they had condemned Van A. Bittner, the union leader in the Fairmont field, was denied in a telegram received in Fairmont July 28. The telegram, which bore the names of the anthracite policy committee, Philip Murray, international vice-president; Thomas Kennedy, international secretary and treasurer; Christ J. Golden, president of District No. 9; Rinaldo Cappelini, president of District No. 1, and Andrew Matty, president of District No. 7, said the policy committee had the utmost confidence in the ability, integrity and honesty of the leader, Van A. Bittner." After congratulating the northern West Virginia miners for the "wonderful fight" they are making, the telegram closed by pointing out that "with both the anthracite and bituminous coal fields fighting together we are bound to win."

Twelve union pickets arrested at the New England mine of the Consolidation Coal Co. recently, were heard by a Fairmont justice of the peace July 28 and bound over under $400 bail to await the action of the grand jury.

Workmen were engaged in cleaning up Mine No. 1 of the Cleveland & Morgantown Coal Co. in Scotts Run last week and, according to officials, the plant will resume operation on a union basis in about a week. In a statement issued by James McCleary, international representative, during the later part of last week it was predicted that three or four additional mines in Scotts Run would be reopened on a union basis.

### Union Output Is Low

Non-union coal mines in northern West Virginia produced 5,824 cars of coal in the first four days of last week, according to figures by the operators. The union tonnage was placed at 864 cars.

Van A. Bittner, chief international representative in northern West Virginia, returned to Fairmont early this week, after having been in Philadelphia and Atlantic City, where he conferred with International President John L. Lewis in reference to the strike situation in northern West Virginia. Mr. Bittner has been absent for several weeks and a rumor was current that he would not return.

Everything continues quiet in the panhandle district and there are apparently no new developments.

## *Enterprise Coal Co. Sold For $1,250,000*

The Enterprise Coal Co., at Shamokin, with headquarters in Scranton, Pa., was reported sold Aug. 3 for $1,250,000 to a group of Scranton and Wilkes-Barre coal operators headed by R. H. Buchanan, general manager of the South Penn Collieries Co. The sale includes the Enterprise mine and breaker and a long lease on 700 acres of coal land owned by the Philadelphia & Reading Coal & Iron Co.

There is said to be 14,000,000 tons of recoverable coal in the tract. The colliery is now being operated at capacity, which is 300,000 tons a year. The plant is electrically equipped throughout. The Enterprise company was the property of the late W. L. Connell, but since his death its operation has been conducted by the Connell estate. James S. McAnulty, president of the Scranton Life Insurance Co., has been president and treasurer of the Enterprise company and W. L. Connell, Jr., has been secretary.

The new owners of the Enterprise mine have been organized under the name of the Northumberland Mining Co. R. H. Buchanan is president of the new company; Bruce Payne, of Wilkes-Barre, is treasurer; Grant Bell, vice-president; H. R. Van Deusen, secretary; M. J. Martin, Scranton attorney, is a member of the board of directors. The office of the company will be maintained in Scranton.

## How to Design and Specify Heating Systems Told

A brochure of twenty pages, just published, and entitled "Architecture and Anthracite," contains many illustrations and much valuable information as to the designing and specifying of heating installations that are satisfactory artistically and sound economically. It is published by the Anthracite Coal Service, 260 South Broad St., Philadelphia, Pa.

The chimney, one of the most important features of a home and its heating equipment, is one theme of this publication. The booklet gives valuable data including a table for figuring the size and height of chimneys for various installations, as prepared by the American Society of Heating and Ventilating Engineers. It also compares the "effective area" of each rectangular flue with its actual area.

With illustrations showing well-proportioned chimneys as well as "horrible examples," Albert Kelsey has prepared an article on the chimney as an "object of interest and beauty."

Diagrams of the standard sizes of flue linings also are shown to enable architects and engineers to specify the correct size and allow for the exact dimensions. A specification for chimneys is added such as will enable designers to insure a chimney soundly built and in accordance with the ordinance of the National Board of Fire Underwriters and the proposed code of the American Society of Heating and Ventilating Engineers.

Other features which should be given full consideration in designing, specifying and constructing are covered in the booklet by D. Knickerbacker Boyd, who discusses many of them in an article entitled "Designing and Planning for Home Heating Economies." Mr. Boyd calls attention to the responsibility of architects, and such builders as construct and sell dwellings without architects, for specifying and seeing that six things are provided for the home owner, namely:

(1) Adequate size and height of flues for all heating and cooking apparatus.

(2) Proper location and construction of all chimneys.

(3) Correct specifying and installing of heating and cooking apparatus to utilize small as well as large sizes of coal.

(4) Economic location and sound construction of coal bins.

(5) Providing convenient facilities for the removal of ashes.

(6) Making walls, roofs and openings tight.

In an article, "Small Size Anthracite Fuel and Equipment for Its Economical Utilization," C. A. Connell outlines possibilities of making great savings in fuel bills by the use of approved apparatus and methods for burning buckwheat coal.

## American Foreign Traders Convene at Seattle

Statistics, said James A. Farrell, president of the U. S. Steel Corporation, at the Twelfth National Foreign Trade Council meeting at Seattle, Wash., June 24-26, illustrates the immensity of foreign trade, the value of which in the aggregate in 1924 was sufficient to build a Panama Canal every fifteen days. The trend of such business is favorable in diversity as well as in value. Our productive capacity is so great that overseas trade is the logical outcome; but competition must be faced abroad, and to meet this successfully necessitates the fullest utilization of mechanical devices and the highest degree of economy in distribution.

In the absence of Dr. H. Parker Willis, professor of banking at Columbia University, his paper on "Foreign Loans and Foreign Trade" was read by the secretary, O. K. Davis. After quoting statistics to indicate the immensity of loans made by the United States to foreign countries in recent years, Dr. Willis mentioned that the problem of the banker was to determine the credit rating of those who wanted to buy goods with the money sought, and the good faith of those who wanted funds. Bankers, however, should realize that the surplus at their command represents a surplus of goods, and that they have a national duty toward trade and commerce.

Bank practice in regard to foreign loans has been considered in many quarters as very much of a mystery, but when viewed as a fundamental problem in the aggregate the matter is a simple one. If a banker is approached for a loan at home, he first inquires as to what use it is to be put. He needs good security, but he also wants to see that the transaction will mean increased business to him and to his community. It is not enough for him to know that the agreed interest will be paid at the agreed time.

The same considerations should apply to foreign loans, but it is significant that one school of bankers believes that it is none of their business as to how the money is to be spent, although it is obvious that the adoption of a similar policy would be disastrous in community banking practice. This same school of bankers asserts that results will be satisfactory "in the long run," but Dr. Willis pointed out that we don't live "in the long run." Immediate business is the chief concern.

The United States has the chief reservoir of available capital in the world, which, however, is not sufficient for all demands that may be made upon it. The lending of money solely for the purpose of bringing profit to the banker is economically unsound, for it may be used to finance or subsidize an enterprise launched in direct competition with United States products.

"Shippers' Problems in Foreign-Trade Transactions" was the subject of an exhaustive analysis of the technique of the subject by F. G. T. Lucas, of Vancouver, B. C. A letter of credit must be lived up to, it was maintained, and a uniform method of framing the document was desirable. This had been achieved in what was known as the American Standard Letter of Credit. With the bill of lading, however, variations in form occurred from day to day, the result being, as the speaker humorously remarked, that the carrier might be excused for almost any happening except the conversion of the goods to his own use. The document had become cumbersome and complicated, and legislation had been necessary in some countries to correct the inequities resulting.

© Keystone View Co.

**F. W. Wilshire**

Vice-president of the Consolidation Coal Co., who sailed from New York last week on a trip abroad on business and pleasure. He was accompanied by his wife and son.

The "Benefit of Insurance Clause" has led to many lawsuits. A real attempt to remedy this state of affairs was made in the introduction of what is known as the "Hague Rules Bill of Lading," which is now adopted as law in Great Britain. In this, many objections in the ordinary bill of lading have been removed, including the "Benefit of Insurance Clause." The right to deviate from the original course has been confined to reasonable limitations, and the minimum of responsibility on the part of the carrier has been defined. It makes the bill of lading a negotiable document and simplifies foreign trade.

Among the speakers were Gerard Swope, Howard T. Lewis, F. J. Koster, J. S. Martin, J. Butler Wright, D. E. Delgado, A. P. Dye, H. M. Robinson, E. P. Thomas, Tso Tsok-Kai, N. Eckstein, Dr. T. H. Boggs, H. Blackwood, Rear Admiral L. C. Palmer, C. W. Cook and Rev. E. A. Walsh.

## New York Anthracite Prices for August, 1925

(Per Gross Ton f.o.b. Mines)

| | Broken | Egg | Stove | Chestnut | Pea |
|---|---|---|---|---|---|
| Lehigh & Wilkes-Barre Coal Co.. | $8.20 | $8.65 | $9.15 | $8.65 | $5.00 |
| Lehigh Valley Coal Sales Co...... | 8.25 | 8.70 | 9.15 | 8.90 | 5.00 |
| Lehigh Coal & Navigation Co.. | 8.90 | 8.90 | 9.30 | 8.85 | 5.50 |
| D.L. & W. Coal Co. | 8.25 | 8.65 | 9.15 | 8.65 | 5.25 |
| Hudson Coal Co.. | 8.80 | 8.70 | 9.15 | 8.65 | 5.40 |
| Phila. & Reading Coal & Iron Co.. | 8.90 | 8.85 | 9.25 | 8.85 | 5.50 |
| M. A. Hanna Co... | 8.80 | 8.90 | 9.40 | 8.90 | 5.55 |

Steam sizes: Buckwheat No. 1, $2.50; rice, $2; barley, $1.50; birdseye, $1.60.

## Industrial Advertisers Name Convention Chairmen

Appointment of chairmen for important committees featured progress made in the last week in the development of plans for the convention of the National Industrial Advertisers Association to be held at the Chalfonte Hotel, Atlantic City, N. J., Oct. 19, 20 and 21. One new appointment was that of J. N. McDonald, of the Anaconda Copper Mining Co., New York, incoming president of the Technical Publicity Association, to be chairman of the On-To-Atlantic City Committee.

Other chairmen named are: D. J. Benoliel, of the International Chemical Co., Philadelphia, to head the Exhibit Committee; Hoyt Catlin, of the Bryant Electric Co., Bridgeport, to head the Entertainment Committee, and H. J. Downes, of the American Locomotive Co., New York, to head the Transportation Committee.

Organization of the General Committee has been completed. W. A. Wolff of the Western Electric Co., New York, is chairman. The other members are: J. L. Ashcroft, Ludlow-Saylor Wire Co., St. Louis; Joseph C. Bowman, Cleveland; Ezra Clark, Clark Tructractor Co., Buchanan, Mich.; O. C. Dahlman, Koehring Co., Milwaukee; W. S. Hays, National Slate Assn., Philadelphia; Mr. McDonald and A. M. Staehle, Westinghouse Electric & Manufacturing Co., East Pittsburgh.

## Railroad Fuel Cost Drops

The cost of coal used by class 1 railroads in locomotives in transportation service during May took a sharp drop, according to a tabulation prepared by the Bureau of Coal Economics of the National Coal Association, from figures reported by the roads to the Interstate Commerce Commission. The average cost of such coal, which represents the invoice price paid at the mine plus any freight charges incurred, was $2.73 per net ton for the United States as a whole. For the Eastern district it was $2.79; for the Southern district $2.22, and for the Western district $3.04. These averages indicate a decrease in cost per ton from the previous month of 6c. in the Eastern district, 9c. in the Southern district, 5c. in the Western district and 6c. for the entire United States.

Compared with May a year ago, when locomotive fuel costs were already at a low level, the reduction in the cost of locomotive coal to the railroads is even more striking. The averages for May of this year are 35c. per ton less for the Eastern district, 47c. less for the Southern district, 21c. less for the Western district and 34c. less for the whole United States.

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The Washington Coal & Coke Co., of Star Junction, Pa., is erecting a tipple equipped with shaker screens, loading booms and miscellaneous equipment. The capacity of the tipple is 600 tons an hour. It is reported that this is one of the largest plants in that coal field.

## *World's Hoisting Record Is Now 10,024 Tons*

And now the much-shattered world's coal-hoisting record has been completely demolished. New Orient mine of the Chicago, Wilmington & Franklin Coal Co. was reported to have hoisted 10,024 tons of coal during an 8-hr. shift on July 30, far exceeding its achievement of 8,687 tons on July 10. The previous record for a single day's hoist was 8,664 tons from the Valier mine of the Burlington railroad at Valier, Ill. Before that the record had been juggled back and forth between Orient No. 1 and Zeigler No. 1, both in Franklin County (Illinois) region of hopper mines. The New Orient mine, built to be the world's greatest producer, which now leaps so far to the front, is expected some day to hoist at least 12,000 tons a day.

## $2,500,000 Bond Issue by Alabama Operation

The Southeastern Fuel Co., with headquarters at Birmingham, Ala., the entire capital stock of which is owned by the Southeastern Power & Light Co., has sold Harris, Forbes & Co., New York, $2,500,000 first (closed) mortgage 6 per cent sinking fund gold bonds. It is announced by A. B. Aldridge, president of the Southeastern Fuel Co., that this issue is to reimburse the power company for advances made to the fuel company and to provide funds for extensive developments and improvements now under way.

The holdings of the Southeastern Fuel Co. comprise about 12,000 acres of valuable coal lands in the Warrior Field, in Walker County, Alabama, adjacent to the Gorgas steam plant of the Alabama Power Co. The latter company has entered into a 21-year contract to purchase sufficient coal and at such prices as will provide each year ample funds to pay the operating expenses of the fuel company, including interest and minimum sinking fund payments on these bonds, such fund to be provided by a levy of 10c. per ton on production up to 400,000 tons per annum and 15c. per ton on amounts in excess of this output. The present output of the four drifts now in operation is stated to be about 650,000 tons, which it is expected to be increased later to 1,000,000 tons when coal is produced from four additional drifts which are now being opened.

## Archbald Breaker Burned

The Whip-o-Will breaker of the Archbald Coal Co., Archbald, Pa., about eight miles north of Scranton, was destroyed by fire July 29. The breaker had been idle for some time, but the mine was operating and the coal was shipped to another breaker for transportation. Several hundred mine workers underground escaped without injury. The damage was approximately $100,000.

## Heavier Coal Output at Russian Mines Hampered By Scarcity of Markets

Like the rest of Europe, Russia faces a serious coal crisis. Output in 1924 was much higher than in 1923, and the possibility of a further rapid increase exists, but just now the home market will not absorb even the present output. As a result of the collapse in grain exports, due to bad crops, the Soviet Government can maintain its foreign trade balance only by finding substitute exports.

Owing to the high transport charges Russian coal was not exported even before the war, when the European market was more favorable, and native coal could not compete with British in the industrial district of Petrograd. Russian oil can compete, however, and there is a practically unlimited demand. The official *Ekonomitcheskaya Zhizn* therefore propounds a plan for consuming coal instead of oil where possible at home, and for correspondingly increasing the export of oil. Of the total fuel consumption before the war, 47 per cent was coal, 37 per cent wood, 13 per cent oil, and 3 per cent peat. As the wood supply, except in the North, is failing, a largely increased coal consumption, says *Ekonomitcheskaya Zhizn*, is practicable, especially on the railroads, but the change involves heavy capital expenditure.

The output of coal in the coal year 1924 was 865,000,000 poods (1 pood equals 36.07 lb.) as against 270,000,000 in 1920, and 1,544,000,000 in 1913. The official program for the new coal year (Oct. 1924 to Sept. 1925) is 887,500,000 poods. Estimated output of the chief State Trusts, as compared with the preceding year is (in millions of poods):

| | 1925 | 1924 |
|---|---|---|
| Great Donetz Trust........ | 554 | 530½ |
| Little Donetz Trust ........ | 40 | 42 |
| Southern Steel Trust ........ | 118 | 89 |
| Chemical Coal Trust......... | 25½ | 27½ |
| Moscow District Mines ...... | 39 | 40 |
| Kuznetsk Trust ............ | 49 | 50 |
| Black Earth Trust .......... | 42 | 39 |

The actual production in the three months October to December, 1924, was 200,500,000 poods; January, 1925, 74,200,000 poods; February, 80,400,000 poods; March, 83,900,000 poods; in all 439,000,000 poods, which for the six months is almost exactly half the year's production estimated in the program.

Financially the condition of the coal trusts continues unsatisfactory, although operation is increasing in efficiency. All the trusts have heavy bank debts and at the beginning of this year the chief Donetz Trust (Donugol) owed its employees 7,500,000 rubles for arrears in wages. A project was submitted to the Moscow Council of National Economy for dissolution of this trust, and its reorganization in the form of a number of minor concerns.

The number of miners employed in most of the trust mines is decreasing. Per capita output, however, has increased 37 per cent since October, 1923. As wages in the same time have increased only 25 per cent, more economical operation ought to be assured, but the trusts are crushed by bureaucratic and overhead expenditure, and with few exceptions only those small and remote mining concerns which are almost free from Communist control show profits.

Market conditions have radically changed during the last four or five years. Whereas in the first years of the Soviet régime production was kept down primarily by general disorganization and unwillingness to work, to-day production could easily be increased if only markets could be found. The weakness of the home market is due to the stagnation of industry, especially the iron trade. For domestic heating wood has always been most used, and wood and oil also played important rôles as railroad fuel.

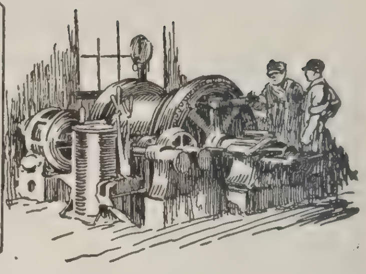
The geographical distribution of coal largely determined the distribution of industries. The South, where the Donetz basin contains sixty billion tons of coal underground, the Moscow district with twelve billion tons, and the Urals with 700,000,000 tons became industrial centers. As in Germany, and for the same reason, the heavy iron and steel industry developed most near the national frontiers. Since the war the Moscow coal district has developed relatively at the cost of the much more important Donetz basin. This is due to various causes, such as the civil war which kept South Russia in disorder, the breakdown of the railways, which made it difficult to transport Donetz coal, and the concentration of armament production around Moscow during and after the Great War.

Even the Ural coal industry has suffered less than the Donetz, and the Ural iron and steel industry has correspondingly maintained itself better than the much greater South Russian industry. In 1913 the iron and steel industry consumed 520,000,000 poods of coal, or about one-third of the whole national output. The revival of the steel industry therefore is the condition precedent to a return of coal production to anything like pre-war level.

**E. R. Pettebone Dies**

Mr. Pettebone, who was chief engineer of the Hudson Coal Co., died at his home at Kingston, Pa., July 27, aged 61. Death was due to a heart attack. Associated with the anthracite industry for thirty-six years, Mr. Pettebone was recognized as a leading authority on mining in the country. He was very well known in Scranton and had been connected with the Hudson Coal Co. since 1897. Previous to that he was with the Lehigh & Wilkes-Barre Coal Co. for nine years.

# Practical Pointers For Electrical And Mechanical Men



## Mending Jig Employed in Splicing Broken Steel Tape

Although the steel tape is probably the most accurate and convenient measuring device in common use it possesses the disadvantage that it breaks easily. Only a slight pull on a kink in such a tape is sufficient to snap it, thus ruining its usefulness until it can be repaired. So common is the breakage of steel tapes that special means for mending them are regularly sold by several well-known dealers in surveyors' instruments.

Tape splices may be made either in the field or in the office, but for certain obvious reasons the office is to be preferred. A convenient jig for repairing broken steel tapes has been devised by the engineering corps of the Sunlight Coal Co., of Boonville, Ind. As may be seen from the accompanying illustrations this device is extremely simple and is intended for use in conjunction with Eureka splice sleeves or similar means of repair.

### Procedure Is Simple

Splices of this kind consist of a thin steel sleeve which has low-temperature solder and the necessary flux on its inner surface. In repairing a tape by this means the broken ends are first polished with a bit of sandpaper or emery cloth, after which they are butted together within the sleeve, to the outside of which heat is applied. Two matches of the ordinary "parlor" variety, as a rule, will furnish enough heat to make a splice.

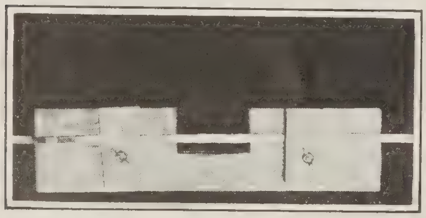


**Fig. 1—Ready to Make Splice**

The broken ends of the tape have been polished, butted together within the splicing sleeve, the two ends aligned and the clamps tightened ready for applying heat to the splice.

It is difficult, however, to hold a broken tape in the hands with sufficient steadiness to get the two parts in exact alignment when the job is completed, and sighting along the tape will usually reveal a more or less pronounced change of direction at the splice. The jig obviates this difficulty.

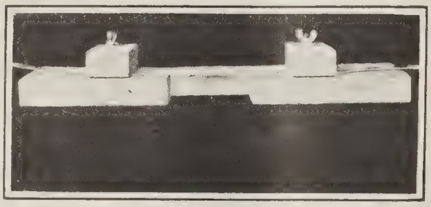


**Fig. 2—The Splice Completed**

This shows the splice as it cools. It only takes a few minutes to mend a tape and the great advantage of the jig lies in the fact that it holds the two pieces of the tape rigid assuring a "straight" splice.

As may be seen, it consists of a board with a rectangular notch cut in one side and two clamps to hold the tape firmly in position. A line drawn across the two ends of the board serves as a means for bringing the two pieces of the tape into exact alignment.

### Repair Is Quickly Made

In use the ends of the tape are polished and then butted together within the splicing sleeve. The clamps on the jig are then loosened, the tape slipped into place, the two pieces brought into exact alignment by making the corresponding edge of both pieces coincide with the mark on the jig, after which the clamps are screwed down tight. This holds the splice rigid and in correct position within the notch. The heat from two matches is then applied to the sleeve, after which it is allowed to cool and the tape is again ready for service.

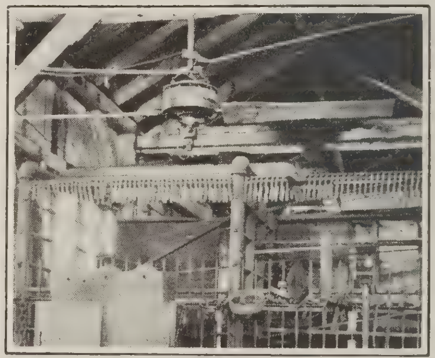
## Blacksmiths Install Ceiling Fan

Keeping even reasonably cool in a blacksmith shop on a hot day sometimes is a problem of no mean proportions. Not only is excessive heat in such a place uncomfortable but, because of this fact, it interferes with the quantity and quality of each workman's output. Any reasonable means that may be adopted, therefore, to alleviate the blacksmith's discomfort is advantageous to all concerned.

In the vicinity of Wilkes-Barre, Pa., somebody threw away an old ceiling fan of the kind and type often used in restaurants, laundries and similar places. The original owner doubtless believed that it had served its term of usefulness, was broken, worn out and useless. One of the blacksmiths employed by the Kingston Coal Co. espied the remains of this old motor on the dump and promptly acquired it.

Carrying it to the shop he and his fellow workers, including one that was somewhat of an electrician, overhauled and repaired it until it would once more operate properly. They then mounted it from the roof of the shop, braced it and bolted a suitable strip of wood or paddle to each of its arms.

The accompanying illustration shows the result of their labors.



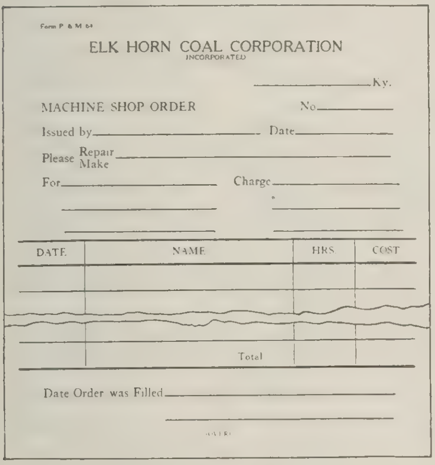
**Ready for Business**

This fan was stopped just long enough to be photographed. It was salvaged, repaired, mounted, wired and is now used by the balcksmiths themselves. It now does much to relieve the heat of the shop.

This old, discarded fan now does much to alleviate the heat of the shop on a warm day. And although this motor consumes an appreciable amount of electric current the management is well pleased because the men at the forges, being more comfortable, are able to turn out more work and of a better quality than would be the case if it were not for this little machine's cooling breeze.

## Shop Work Records Help Fix Exact Cost Data

The accounting of repair work done at the shops of the Elkhorn Coal Corporation at Wayland, Ky., is kept by the warehouse man and so far as can be seen adds practically no expense to shop work. Each job is assigned a number and if it is a repair job a tag bearing that number is attached to the equipment. Each mechanic makes out a card, at the end of the day distributing his time to the various job numbers on which he worked. As he leaves the shop he drops this card in a box at the storehouse. The storekeeper posts this labor on the front side of a job sheet, such as is illustrated, and as items of material are drawn out for use on a job he also posts that data on the back where a form is provided. When a job is completed the total cost is figured by adding the labor and material items.



Form P & M 64

ELK HORN COAL CORPORATION
INCORPORATED

______________ Ky.

MACHINE SHOP ORDER No.______

Issued by______________ Date______

Please Repair / Make ______________

For______________ Charge______________

| DATE | NAME | HRS. | COST |
|---|---|---|---|
| | | | |
| | | | |
| | Total | | |

Date Order was Filled______________

(OVER)

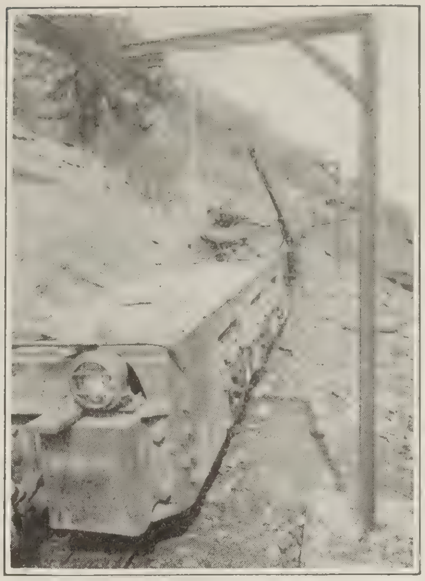
**Machine Shop Blank**

Repair shop cost data is valuable as a means of holding down expense, but must be kept by some method which will not add appreciable cost to the work. A sheet, as above, is used for each job. The labor items are posted on the front, and the material on the back.

## Old Rails Find New Use

Much of the material used around many mines is abandoned as soon as it has served its original purpose. An example of how old rails may be reused after they have become unsatisfactory is illustrated in the accompanying photograph.

At the Gay Coal & Coke Co. mine in West Virginia, permanent overhead structures for supporting the trolley wire are made from the mine rails which have been removed from underground. Sometimes these old pieces of rail are too short to be used again for mine tracks or have been worn so that locomotives and cars will not ride upon them without derailing.



**Old Rails Need Not Be Scrapped**

Pieces which ordinarily would be wasted are used to make these trolley wire supports. Set in concrete they make overhead construction rigid and permanent.

Many different types of trolley wire braces are not permanent; being constructed of wood they are easily broken. The supports in the illustration are set in concrete and, therefore, are built to "stay put."

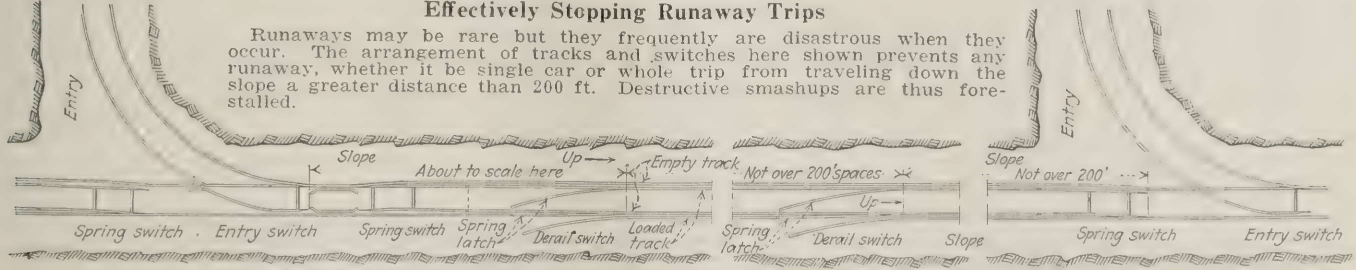
The work of assembling the parts is done at the mine. Holes are drilled in the rail sections so that a corner can be formed. The short horizontal arm which extends over the track and holds the trolley wire is held in position by two corner braces. Attached to the rails is a piece of strap iron which holds the top member rigidly in place.

## Slope Runaways Checked by Derail Switch

At the Rock Springs mines of the Union Pacific Coal Co., the derailing switches shown in the accompanying illustration have been installed to stop runaway trips. The track on the slope is practically double except at entry or level turnouts. Thus the loaded cars coming up traverse one set of rails while the empties going down follow another. Spring-actuated derail switches are installed on the loaded track in such a way that they will effectively untrack any loaded trip moving down the slope. These spring switches are not over 200 ft. apart.

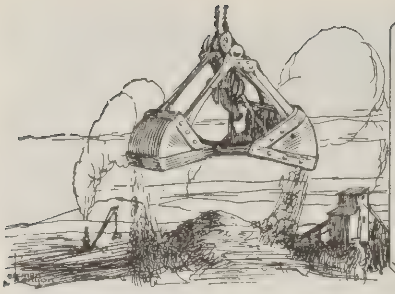
By this arrangement, should the cable part at any point while a trip of loads is being hoisted, such a trip could not run down the slope over 200 ft. without encountering a derail switch and being untracked. An empty trip pushed over the knuckle at the tipple without being attached to the rope would be thrown off the track by the manually operated derail installed outside the slope collar and controlled from the tipple platform.

Of course ropes, shackles, swivels and the like employed upon any slope should be carefully and periodically inspected, any part or portion showing signs of defect or weakness being promptly repaired or renewed. In spite of all due vigilence, however, trips will occasionally break loose and run wild. It is upon these critical, albeit rare, occasions that the arrangement here shown serves its purpose.

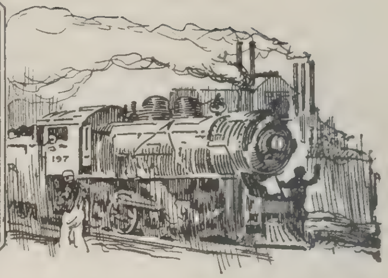


**Effectively Stopping Runaway Trips**

Runaways may be rare but they frequently are disastrous when they occur. The arrangement of tracks and switches here shown prevents any runaway, whether it be single car or whole trip from traveling down the slope a greater distance than 200 ft. Destructive smashups are thus forestalled.



# Production And the Market



## Improvement in Soft-Coal Market More Marked; Anthracite Trade Extremely Active

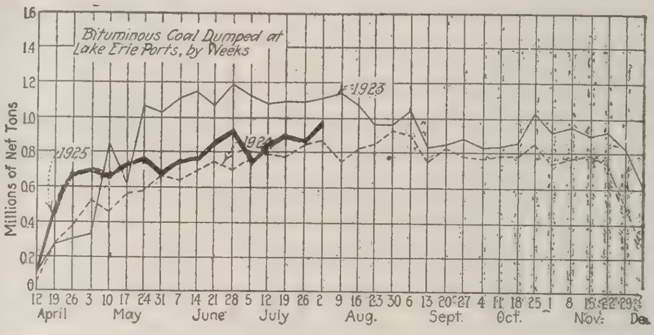
The improving tendency in the bituminous coal trade is becoming more marked, and the volume of inquiry would indicate that the betterment will continue. While output is increasing with the demand the augmentation in tonnage has not been sufficient to outpace the expansion in business, consequently prices show a steady growth in firmness.

Illinois and Indiana domestic coals were more active in the Midwestern market last week than at any time in months—in anticipation of a 25c. advance in price. Many of the mines were able to clear their tracks for the first time since last winter. Steam coals are erratic, however. Kentucky continues to enjoy a heavy movement to the lakes and industrial and utility demand is keeping screenings moving at very good prices for midsummer. Prepared coal also is moving better. Output is increasing in eastern Kentucky and western Kentucky also is doing better. Although demand at the head of the lakes is not up to the mark the trade is more hopeful by reason of a growing volume of inquiry. Business is practically unchanged in Utah, Colorado, Kansas and the Southwest except for some activity in preparation for an upturn.

Domestic inquiry and demand at Cincinnati have picked up to such a degree as to stiffen prices and iron out most of the spreads, the improvement extending right down the line to slack. Southern and eastern Ohio are doing little more than mark time, partly stunned by the Interstate Commerce Commission's refusal to alter rates to the lakes. Sluggishness continues to prevail in the Pittsburgh market. The New England and New York markets are gaining steadily in firmness, but at Philadelphia demand is only fair. Baltimore and Birmingham are barely holding their own.

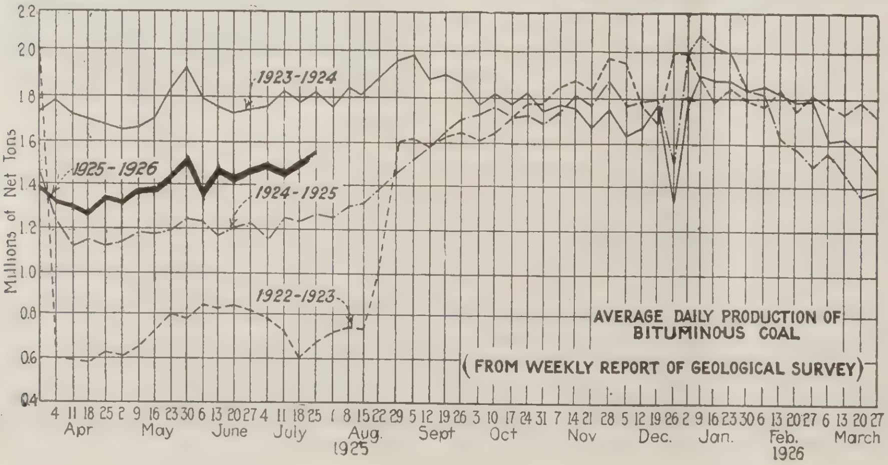
The hard-coal market continues to speed up, the companies having orders booked to take care of most of their August output. Demand for all sizes has increased, enabling the mines to work full time and bring output close to normal. Stove and egg are a little tighter, but chestnut, pea and the steam sizes also have braced to some extent. Independent prices are gaining in strength and the companies added 10c. to 15c. to the price of domestic sizes on Aug. 1.

Production of bituminous coal in the week ende July 25 is estimated by the Geological Survey at 9,255,000 net tons, compared with 8,966,000 tons in the previous week, as shown by revised figures. Anthracite output in the week ended July 25 totaled 2,049,000 net tons, compared with 1,985,000 tons in the preceding week.



*Coal Age* Index of spot prices of bituminous coal advanced three points during the past week, standing on Aug. 3 at 163, the corresponding price being $1.97.

Dumpings at Lake Erie ports during the week ended Aug. 2, according to the Ore & Coal Exchange, were: Cargo, 942,678 net tons; steamship fuel, 45,318 tons—a total of 987,996 net tons, compared with 845,706 tons in the previous week. Hampton Roads dumpings in the week ended July 30 totaled 445,793 net tons, compared with 408,064 tons in the preceding week.



### Estimates of Production

(Net Tons)

| BITUMINOUS | 1924 | 1925 |
|---|---|---|
| July 11 | 7,742,000 | 8,639,000 |
| July 18 (*a*) | 7,644,000 | 8,966,000 |
| July 25 (*b*) | 7,785,000 | 9,255,000 |
| Daily average | 1,298,000 | 1,542,000 |
| Cal. yr. to date | 258,856,000 | 265,991,000 |
| Daily ab. to date | 1,488,000 | 1,527,000 |
| **ANTHRACITE** | | |
| July 11 | 1,871,000 | 1,854,000 |
| July 18 | 1,840,000 | 1,985,000 |
| July 25 | 1,837,000 | 2,049,000 |
| Cal. yr. to date | (*c*) 51,989,000 | 51,837,000 |
| **COKE** | | |
| July 18 (*a*) | 103,000 | 127,000 |
| July 25 (*b*) | 99,000 | 125,000 |
| Cal. yr. to date | (*c*) 6,406,000 | 5,731,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Market Unusually Active

The Midwest market on Illinois and Indiana domestic coals was much more active last week than it has been in months. This was principally because the operators gave notice that effective Aug. 1 prices would advance 25c. a ton to $3 on the coarser prepared sizes. So many orders came in during the last week in July that a great many of the mines cleared their tracks—something they have not been able to do since last winter. Retailers were particularly active in this buying wave, as strike talk apparently has had its effect on the public, who are now actually showing some interest in coal.

The market in steam coals continues to be fairly erratic. The operators who are obtaining the best prices are the ones who pursue the policy of staying out of the market and letting customers come to them for prices. These operators are not offering their coal indiscriminately, nor are any of them shipping coal on consignment.

Industries in the Chicago district have not as yet started to buy, but it is anticipated that they will be in the market strong within the next three or four weeks, and when they do come in, sharp advances can be expected.

Smokeless operators are out with early August quotations, none of them having set prices for the entire month. All of the companies selling first-class smokeless coal are holding it at a consistent price of $3.25 for lump and egg. Splint coal shows a little strength, as the average price for 6-in. is around $2.50; 3-in. block around $2.25. The spread on good eastern Kentucky block is $2.45@$2.75; Kentucky egg, $2@$2.50.

There is greater activity in the movement of domestic sizes in Franklin County and Saline County, but Williamson County is coming along slowly. Some of the older mines are beginning to open up and those that are working are getting better time. Nut coal, however, is heavy and domestic shipments are pretty well scattered in all directions except South. Steam seems to be equal to the demand and at some plants a little crushing is still going on. Railroad tonnage with the shaft mines is fairly good and the strip mines report good railroad tonnage and fairly good steam and some increase in domestic. The strip mines are getting almost full working time. Shaft mines are working two to three days a week as a rule.

In the Duquoin field conditions are a little slow, with poor working time and no movement of coal. The few mines that are working are getting two and three days a week. In the Mt. Olive field conditions still continue bad. There is a slight increase in domestic but not enough to become a factor. Mines are still crushing mine-run for screening contracts. Railroad tonnage is light. In the Standard field there has been some improvement in work-

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Aug. 4 1924 | July 20 1925 | July 27 1925 | Aug. 3 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.60 | $2.85 | $2.85 | $2.75@$3.00 |
| Smokeless mine run | Columbus | 2.10 | 1.85 | 1.85 | 1.75@ 2.00 |
| Smokeless screenings | Columbus | 1.20 | 1.35 | 1.35 | 1.25@ 1.50 |
| Smokeless lump | Chicago | 3.85 | 3.10 | 3.10 | **3.25** |
| Smokeless mine run | Chicago | 1.85 | 1.90 | 2.00 | 1.90@ 2.10 |
| Smokeless lump | Cincinnati | 3.75 | 2.90 | 2.85 | **3.00** |
| Smokeless mine run | Cincinnati | 1.85 | 2.00 | 2.00 | 2.00 |
| Smokeless screenings | Cincinnati | 1.30 | 1.20 | 1.30 | 1.30@ 1.35 |
| *Smokeless mine run | Boston | 4.30 | 4.30 | 4.35 | **4.35@ 4.50** |
| Clearfield mine run | Boston | 1.90 | 1.75 | 1.80 | *1.65@ 1.90* |
| Cambria mine run | Boston | 2.30 | 1.95 | 1.95 | 1.80@ 2.10 |
| Somerset mine run | Boston | 2.05 | 1.85 | 1.85 | **1.75@ 2.00** |
| Pool 1 (Navy Standard) | New York | 2.70 | 2.55 | 2.55 | 2.35@ 2.75 |
| Pool 1 (Navy Standard) | Philadelphia | 2.80 | 2.60 | 2.60 | 2.45@ 2.75 |
| Pool 1 (Navy Standard) | Baltimore | .... | 1.85 | 1.85 | 1.80@ 1.95 |
| Pool 9 (Super. Low Vol.) | New York | 2.05 | 1.95 | 1.95 | *1.80@ 2.10* |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.00 | 2.00 | 1.85@ 2.20 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.95 | 1.75 | 1.75 | 1.65@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.80 | 1.80 | 1.80 | *1.65@ 1.90* |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.70 | 1.70 | 1.60@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.70 | 1.60 | 1.60 | 1.55@ 1.65 |
| Pool 11 (Low Vol.) | New York | 1.50 | 1.55 | 1.55 | **1.50@ 1.75** |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.40 | 1.40 | 1.35@ 1.45 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.50 | 1.50 | **1.50@ 1.75** |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.50 | 1.50 | 1.45@ 1.60 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.35 | 1.35 | 1.30@ 1.45 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.40 | 2.40 | 2.30@ 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.30 | 1.50 | 1.50 | 1.40@ 1.60 |
| Kanawha lump | Columbus | 2.10 | 1.85 | 2.00 | 1.90@ 2.15 |
| Kanawha mine run | Columbus | 1.45 | 1.40 | 1.40 | 1.35@ 1.50 |
| Kanawha screenings | Columbus | 1.05 | 1.15 | 1.15 | 1.10@ 1.25 |
| W. Va. lump | Cincinnati | 2.25 | 2.25 | 2.25 | **2.25@ 2.50** |
| W. Va. gas mine run | Cincinnati | 1.35 | 1.45 | 1.40 | **1.35@ 1.60** |
| W. Va. steam mine run | Cincinnati | 1.35 | 1.30 | 1.30 | 1.25@ 1.40 |
| W. Va. screenings | Cincinnati | .90 | 1.10 | 1.15 | 1.10@ 2.15 |
| Hocking lump | Columbus | 2.45 | 2.15 | 2.15 | 2.00@ 2.30 |
| Hocking mine run | Columbus | 1.55 | 1.50 | 1.55 | 1.45@ 1.70 |
| Hocking screenings | Columbus | 1.05 | 1.30 | 1.35 | 1.25@ 1.45 |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.20 | 2.25 | 1.90@ 2.60 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.85 | 1.90 | 1.85@ 1.95 |
| Pitts. No. 8 screenings | Cleveland | 1.10 | 1.50 | 1.40 | **1.40@ 1.50** |

| Midwest | Market Quoted | Aug. 4 1924 | July 20 1925 | July 27 1925 | Aug. 3 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $2.85 | $2.60 | $2.60 | **$2.75@$3.00** |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.70 | 2.00 | 2.00 | 1.75@ 2.25 |
| Central Ill. lump | Chicago | 2.50 | 2.35 | 2.35 | **2.50@ 2.75** |
| Central Ill. mine run | Chicago | 2.10 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central Ill. screenings | Chicago | 1.60 | 1.70 | 1.70 | 1.50@ 1.90 |
| Ind. 4th Vein lump | Chicago | 2.60 | 2.60 | 2.60 | **2.75@ 3.00** |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.70 | 1.80 | 1.80 | 1.65@ 2.00 |
| Ind. 5th Vein lump | Chicago | 2.35 | 2.25 | 2.25 | **2.25@ 2.50** |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.55 | 1.50 | 1.50 | 1.40@ 1.60 |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.25 | 2.25 | 2.25 |
| Mt. Olive screenings | St. Louis | 2.00 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.15 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.20 | 1.30 | 1.30 | *1.25* |
| West Ky. block‡ | Louisville | 2.10 | 1.55 | 1.65 | **1.75@ 1.85** |
| West Ky. mine run | Louisville | 1.55 | 1.15 | 1.15 | 1.10@ 1.25 |
| West Ky. screenings | Louisville | 1.15 | .85 | .85 | **.85@ .95** |
| West Ky. block‡ | Chicago | 2.05 | 1.90 | 1.90 | 1.60@ 2.25 |
| West Ky. mine run | Chicago | 1.60 | 1.35 | 1.35 | 1.15@ 1.60 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.40 | 2.00 | 2.00 | 1.75@ 2.25 |
| Big Seam mine run | Birmingham | 1.75 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.00 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block‡ | Chicago | 2.10 | 2.55 | 2.55 | **2.40@ 2.75** |
| S. E. Ky. mine run | Chicago | 1.50 | 1.70 | 1.70 | 1.60@ 1.85 |
| S. E. Ky. block‡ | Louisville | 2.10 | 2.25 | 2.25 | 2.00@ 2.50 |
| S. E. Ky. mine run | Louisville | 1.55 | 1.55 | 1.55 | 1.35@ 1.75 |
| S. E. Ky. screenings | Louisville | .95 | 1.10 | 1.10 | 1.00@ 1.25 |
| S. E. Ky. block‡ | Cincinnati | 2.35 | 2.25 | 2.35 | 2.25@ 2.50 |
| S. E. Ky. mine run | Cincinnati | 1.45 | 1.40 | 1.45 | 1.25@ 1.65 |
| S. E. Ky. screenings | Cincinnati | .90 | 1.10 | 1.15 | **1.10@ 1.30** |
| Kansas lump | Kansas City | 4.50 | 4.00 | 4.00 | **4.25** |
| Kansas mine run | Kansas City | 3.50 | 3.00 | 3.00 | **3.00@ 3.25** |
| Kansas screenings | Kansas City | 2.50 | 2.50 | 2.50 | 2.50 |

* Gross tons, f.o.b. vessel, Hampton Roads.

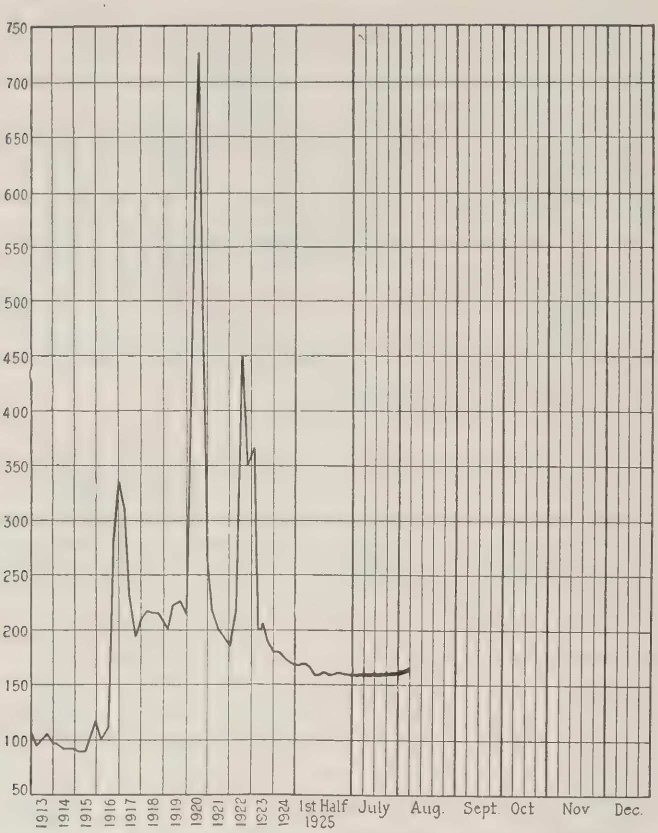
† Advances over previous week shown in **heavy type**; declines in *italics*.

‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | August 4, 1924 | | July 27, 1925 | | August 3, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ............ | $8.00@$9.05 | ............ | $8.15@$8.80 | ............ | **$8.20@$8.90** |
| Broken | Philadelphia | 2.39 | ............ | 8.90@ 9.05 | ............ | 8.70 | ............ | **8.80@ 8.95** |
| Egg | New York | 2.34 | $8.40@$8.65 | 8.65@ 9.05 | $8.75@$9.10 | 8.55@ 8.80 | **$9.25@$9.50** | **8.65@ 8.90** |
| Egg | Philadelphia | 2.39 | 9.00@ 9.70 | 9.00@ 9.05 | 8.80@ 9.40 | 8.60@ 8.80 | 8.80@ 9.40 | **8.70@ 8.95** |
| Egg | Chicago* | 5.06 | 8.10@ 8.26 | 8.02@ 8.12 | 7.86@ 8.60 | 7.54@ 8.28 | 7.86@ 8.60 | 7.54@ 8.28 |
| Stove | New York | 2.34 | 9.00@ 9.25 | 8.65@ 9.30 | 9.25@ 9.75 | 9.05@ 9.30 | **9.75@10.00** | **9.15@ 9.40** |
| Stove | Philadelphia | 2.39 | 9.35@10.00 | 9.05@ 9.10 | 9.40@ 9.75 | 9.05@ 9.20 | 9.40@ 9.75 | **9.15@ 9.30** |
| Stove | Chicago* | 5.06 | 8.40@ 8.60 | 8.30@ 8.45 | 8.22@ 8.70 | 8.32@ 8.80 | 8.22@ 8.70 | 8.32@ 8.80 |
| Chestnut | New York | 2.34 | 8.30@ 8.55 | 8.65@ 9.05 | 8.75@ 9.10 | 8.55@ 8.80 | **9.25@ 9.50** | **8.65@ 8.90** |
| Chestnut | Philadelphia | 2.39 | 8.85@ 9.80 | 9.00@ 9.05 | 8.80@ 9.65 | 8.70@ 8.80 | 8.80@ 9.65 | **8.80@ 8.90** |
| Chestnut | Chicago* | 5.06 | 8.20@ 8.32 | 8.24@ 8.38 | 8.24@ 8.45 | 7.79@ 8.10 | 8.24@ 8.45 | 7.79@ 8.10 |
| Pea | New York | 2.22 | 4.25@ 5.25 | 5.50@ 6.00 | 5.25@ 5.50 | 5.00@ 5.80 | **5.25@ 5.75** | *5.00@ 5.55* |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | 5.50@ 5.75 | 5.00@ 5.40 | 5.50@ 5.75 | **5.00@ 5.50** |
| Pea | Chicago* | 4.79 | 5.15@ 5.60 | 5.36@ 5.91 | 4.91@ 5.36 | 4.91@ 5.36 | 4.91@ 5.36 | 4.91@ 5.36 |
| Buckwheat No. 1 | New York | 2.22 | 1.75@ 2.50 | 3.00@ 3.15 | 2.00@ 2.50 | 2.50 | **2.25@ 2.50** | 2.50 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | 2.15@ 2.75 | 2.50 | 2.15@ 2.75 | 2.50 |
| Rice | New York | 2.22 | 1.50@ 2.00 | 2.00@ 2.25 | 1.90@ 2.00 | 2.00 | **2.00@ 2.25** | 2.00 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | 1.85@ 2.00 | 2.00 | 1.85@ 2.00 | 2.00 |
| Barley | New York | 2.22 | 1.15@ 1.50 | 1.50 | 1.35@ 1.60 | 1.50@ 1.60 | **1.50@ 1.75** | 1.50@ 1.60 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | 1.40@ 1.50 | 1.50 | 1.40@ 1.50 | 1.50 |
| Birdseye | New York | 2.22 | ............ | 1.60 | 1.40@ 1.60 | 1.60 | ............ | 1.60 |

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines

| | 1925 | | | 1925 |
|---|---|---|---|---|
| | Aug. 3 | July 27 | July 20 | Aug. 4 |
| Index | 163 | 160 | 160 | 163 |
| Weighted average price | $1.97 | $1.94 | $1.93 | $1.98 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to he proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

ing time and demand, but there is an overproduction that is selling below cost and nearly all mines have "no bills" and the buyer fixes his own price. Steam market in the Standard field is weakening and the general situation is bad, with no hope of any immediate relief. Railroad tonnage is fairly good, everything considered, and the mines are working from one to three days a week, this being the exception. Prices are unchanged.

At St. Louis there has been a little spurt in domestic deliveries of high-grade coal. This has just started and may assume a reasonably good movement soon. Anthracite, smokeless and coke are slow and the cheaper coals, while active for winter storage in tenements and schools, apparently are not in favor in a general way with the domestic user. Wagonload steam is quiet and carload is not equal to the supply. From now on there will be a tendency to find the steam market weakening. Country domestic is picking up a little on good and medium coals, but country steam is slow.

### General Conditions Better in Kentucky

Now that Kentucky's lake business has been made safer by the Interstate Commerce Commission decision that rates from the various competing fields will continue unchanged, there is an air of confidence in the fields, although many wise operators never seriously thought that there was much prospect of any upset in the order of things.

Lake movement continues quite heavy, while industrial and utility demand is keeping screenings well cleaned up at the best midsummer prices in some years. Movement of prepared coal is gradually increasing as retailers are stocking and domestic buyers placing winter orders. Eastern Kentucky mines are gradually increasing production, some mines which had been idle for months now running steadily.

Eastern Kentucky as a whole is fairly well fixed, with screenings rarely reported at under a minimum of $1 and a lot of coal moving at $2 to $2.25, the top price on special coals ranging from $2.50 upward.

There also has been an improvement in western Kentucky, where some houses are putting out August quotations at $1.85 for best block, lump and egg. Block is now quoted on a spot basis at $1.75@$1.85; lump and egg, $1.50@$1.75, covering a range in sizes; nut, $1.45@$1.60, also covering a number of sizes; and mine-run, $1.10@$1.25. Screenings are 85c.@95c. A number of mines are on much better running time and one mine recently broke its previous hoisting record. Strip mines also are producing well.

Indications are for steady increase in production, with prices rising slowly as demand gets into full movement.

### Northwest Trade Below Par but Hopeful

While demand for coal in Duluth remains below par, improvement in inquiry is noted by dock operators. The trade therefore is more hopeful. Retailers at Duluth, Superior and in other towns in Minnesota and North Dakota have been prodding large consumers to order anthracite supplies for the winter, and with fair success, but the rank and file of anthracite consumers are holding off, regardless of strike talk. Pocahontas and other bituminous substitutes seem destined to make further inroads into the anthracite trade.

The dock companies are deriving some satisfaction from a better demand lately from industrial quarters. Demand from iron mining companies on the Minnesota ranges remains lifeless as a result of operations being curtailed apart from at the mines of the Oliver Iron Mining Co. Some of the independents, however, are understood to be preparing to start up again this fall.

Receipts of coal by lake fell off during the last week, the aggregate being thirty-seven cargoes, including two of anthracite, as compared with forty-eight cargoes, including nine of anthracite, during the preceding week.

Prices are unchanged for bituminous coals, but an advance of 10c. per ton became effective on anthracite on Aug. 1, quotations being as follows: Egg, $13.10; stove, $13.20; nut, $13.35; pea, $10.10 and buckwheat, $6.50.

Dock managers in Milwaukee report a better demand for coal, which now is moving out in an encouraging way, though there has been an advance in price at the mines for some grades of bituminous coal—as much as 25c. a ton. On Aug. 1 retailers made the usual advance of 10c. a ton in the prices of the various sizes of anthracite. This will make the price of egg $16.20; stove, $16.70, and nut, $16.55, with 75c. added if the coal is carried from truck to bin. Coal is coming up the lakes quite freely; receipts for the season up to July 30 aggregate 1,599,298 tons, against 1,350,246 tons to the same date in 1924.

### Southwest Prepares for More Business

With little change in market conditions in the Southwest, the price of Kansas lump was advanced 25c. to $4.25 on Aug. 1, and there is general activity over the state in preparation for fall business. Oklahoma production is more or less limited by union opposition to the 1917 scale, under which all coal is being produced there. Mass meetings are frequent, with national guardsmen present to prevent disorder. In Arkansas in recent weeks several mines have reopened under the lower scale, but so far production under the 1924 scale is limited. Operators bound by it say they do not know when they will be able to open.

There have been no new developments of note in the Colorado market, the volume of demand and prices being practically unchanged during the last week.

The coal market in Utah continues draggy, but prices remain as firm as ever. Mines are working about two or two and a half days a week. Winter storage orders are still coming in slowly, the winter storage idea during summer apparently having been abandoned by most people.

### All Grades Stiffen at Cincinnati

While there has been a definite upturn in prices on the Cincinnati market it only to a measure reflects the strength shown during the past week, for in gaining momentum the spreads and other little evasions in prices had to be first wiped away. Domestic inquiry and orders are the most important new turn to affairs. Retailers and country dealers who had been lagging for some time show a disposition to buy, but instead of their orders being seized with avidity there were instances where they were told that they would have to wait their turn. Even more surprising was the fact that $2 coal had disappeared overnight, as it were, and the asked price was $2.25@$2.50 with Elkhorns, Yellow Jackets, Millers Creek and the like up to $2.75 and even higher.

Slack, too, under Eastern buying for tidewater also has perked up with $1.10 as a positive low and some purchases running as high as $1.25. The consequence of this was that the residue from byproduct coals and others used for specific purposes went sailing up to $1.35. Lake buyers are beginning to scent the change in the trend of events and with their entry into the market for 2-in. sizings egg and nut are stiffer in price though the quotations of $1.65@$1.85 fail to show this.

In smokeless business has been a little slower in showing the turn so far as the inland is concerned, but again the seaboard came to the rescue and advanced the price on screenings, some sales having been made around $1.35 with the $1.25 price practically wiped out. On lump and egg the price has tightened down to $3, which can be looked upon as a 25c. advance for it has been hard to determine, for the past month or six weeks, just where the egg left off and the lump commenced. Mine-run is strong.

Retail business is still lagging so far as the city is concerned. The public, once more bitten last year so far as price was concerned, refuses to take the anthracite and foreign troubles seriously and shows no haste in getting coal into the cellars. Pocahontas lump was advanced to $8 as of Aug. 1 and mine-run to $6@$6.25; bituminous lump to $6@$6.25 and slack to $4.50.

River business again had to depend upon a wave from the upper regions, the water from the heavy rains having run out of the stream. Thirty thousand tons was brought in on the morning of July 30.

With the strike question both in the anthracite field and in Great Britain still unsettled, coal men in Columbus and various Ohio fields are playing a waiting game. There is still a slightly better demand for domestic sizes, attributable both to the labor situation and the lateness of the summer stocking season, but the tonnage moving is not up to normal for this time of the year, as many householders are still holding back.

Ohio coals both from the Hocking Valley proper and the Pomeroy field are moving in slightly larger quantities, although production has not increased materially. Retail prices are steady at the levels which have maintained for several weeks. Smokeless is selling around $8 to $8.50 and splints about $1 less.

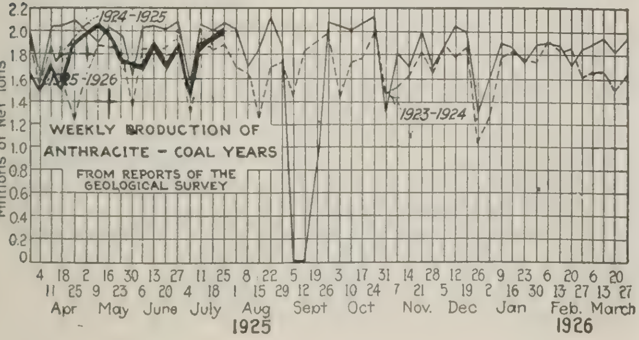
Steam business is irregular, as there is no general movement to stock. Reserves are about normal as a rule, although some reports show very low stocks in the hands of some of the larger consumers. With only a small amount of distress coal available buyers are placing small orders with operators in preference to entering into contracts. Inquiries for contract prices are more numerous, however.

Aside from the fluctuation in the supply and price of slack and nut and slack, there is little if any change in the eastern Ohio market. During the past week screenings have been scarcer, due to the comparatively small quantity of lump being produced, with the result that spot prices have stiffened 5c. per ton.

The general industrial situation shows no improvement, and coal consumers have not yet actually commenced laying by much fuel.

In the retail trade accumulation has already begun, but the major commitments are for smokeless domestic from West Virginia. The mines prices on these coals as quoted in Cleveland have been advanced 25c. per ton within the past week with the demand stronger.

Production in the eastern Ohio No. 8 field in the week ended July 25 was 236,000 tons, or about 33.7 per cent of potential capacity. This is 21,000 tons over the preceding week but 41,000 tons under the corresponding week last year.



### Demand Lags at Pittsburgh

In the Pittsburgh district proper there is no plainly discernible increase in demand for coal, but in adjacent non-union regions a little better call seems to be in evidence, and some operators have hope that they will soon be able to obtain better prices. This is the experience of some Connellsville operators who are selling coal for gas purposes, the coal not being equal to regular Youghiogheny gas coal but an acceptable substitute, at a price, with some consumers. The Group 1 mines of the Bessemer district (north of Butler), producing steam and domestic coal, have had a slightly better demand in the past few weeks, and claim to be operating at close to 75 per cent.

A small union mine in the southwestern part of the Pittsburgh district has just closed, being unable or unwilling longer to stand the loss of operating at the union scale and meeting the market.

The coal situation at Buffalo turns now on the possibility of a strike. Not much dependence is placed on the threatened interference of the government. The local natural gas company has brought a storm of objection down upon it by asking an advance of 15c. per thousand feet for gas furnished the city. Practically every concern, from the City Council down to individual consumers, is up in arms against the move. It is in the air that the cost of fuel must come down. The bituminous trade is quite as dull as ever. Nobody finds the demand any better and some shippers are not finding their trade as good as it was. Slack is scarce and it may be that sizes will stiffen before long also, but so far a few cents advance on Youghiogheny gas slack is about all the change in sight.

With the prospects of a coal strike in the near future, Toronto householders are keeping retail dealers busy filling orders. The rush has lasted for several weeks now and shows no signs of slackening. Supplies are still coming in, and with the exception of stove coal there is no scarcity. Dealers are hoping that the strike may be averted before any real scarcity makes itself felt. Prices are unchanged.

### New England Situation Steadier

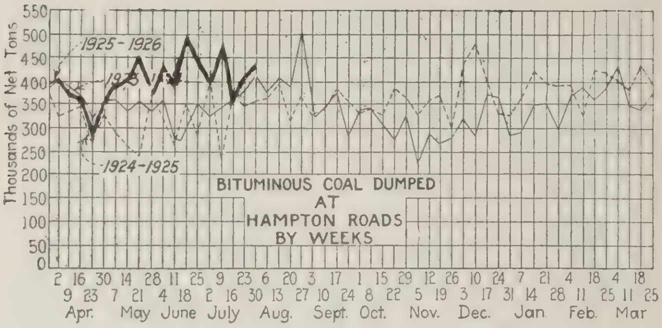
In New England the improved situation reported a week ago has been reasonably well maintained. The increase in demand, if any, is very slight, but prices are on a firm basis once more and there are few indications of shading in order to move coal. The British labor difficulty was a talking point for a fortnight, but there were no signs of comprehensive buying from foreign quarters. Production in the smokeless fields is under better control, accumulations at the piers are much less than during May and June, and it is clear that requirements and the volume of coal are being co-ordinated in much better fashion than has been customary hitherto this season. Factors who were assuming coal would be waiting for their ships as matter of course now find it necessary to arrange for cargoes weeks in advance, and obviously this is a much more wholesome state of trade.

While good grades are still to be had at $4.35 per gross ton f.o.b. vessel at Norfolk and Newport News, the actual range of the market on Navy standard Pocahontas and New River is $4.35@$4.50, with occasional sales of small lots on a slightly higher basis. Somewhat firmer marine rates on steamers have encouraged rehandlers at this end to raise their asking figures to $5.75 on cars Boston, but business is still being taken for August and September delivery at $5.50@$5.60. The Boston retail market also is much improved, dealers having pegged their price at $7.50 per net ton delivered, although the cream of the tonnage was placed earlier at around $6.

On Pennsylvania coal there is no change. The high cost of mining keeps prices still far above what the market will absorb in any volume, and there is not yet any opening all-rail in competition with Pocahontas and New River.

### Demand Growing at New York

An increased amount of bituminous coal is being called for steadily by New York buyers, and there is every prospect of the improvement continuing through August. Over and beyond this seasonal tendency to expand, the work of corralling orders will be facilitated in the next few weeks by the danger of trouble in the anthracite fields. Prices have not risen except in spots, and until there is a broad



advance, embracing all grades of coal, the bituminous trade as a whole will not be on a profitable basis.

The volume of inquiries now coming in shows that consumers of soft coal are no longer indifferent. Some are holding back but every week sees a certain amount of business closed that had been hanging fire, and taking it all around the local wholesale trade is in a more hopeful mood than for some time past.

At Philadelphia there is only an ordinary demand for soft coal, with all producers in readiness to take advantage of any quickened call. The better movement among the medium users of coal to put stocks in storage continues and inquiries are increasing, although there is still a tendency to shop around to get the lowest figures.

The railroads are holding off, though some tonnage has been placed lately in high-volatile coals where the price was favorable to the buyer. With the possibility of an anthracite strike producers are not so anxious to close railroad trade at the prices now offered, and as the roads have big stocks there is indifference on both sides.

The outlook industrially is favorable for good fall business and this fact is giving much encouragement to local selling houses.

The tide trade remains quiet, although hopes are strong that the increased call for fuel evident at some of the Southern ports may reach here soon. Bunkering goes on at the ordinary rate in evidence for the past year, and prices are unchanged.

One result of the settlement of the threatened British coal strike probably will be that the export and bunker trade at Baltimore will progress along more normal lines than would have been the case had the English coal supplying group been forced to come into the market for German or American coals. Coal men are confident that there is enough hard coal in reserve to take care of a considerable period if there be a strike, and that the effect on soft coal will be only a moderately increased demand for certain domestic steam sizes that will in no way greatly accelerate soft-coal buying. Meanwhile sales competition is keen and prices remain about the same as they have been for some weeks past.

## Birmingham Expects Improvement

At Birmingham the market for domestic fuel continues very sluggish, with scarcely any spot demand and a very limited and slow movement against contracts. Coal men expect an improvement in conditions with the beginning of August, contracts calling for the delivery of a much larger tonnage than specified for July and preceding months. Householders so far have evinced little interest in stocking winter fuel and consequently dealers, having fair stocks, are in no mood to further augment them until they have booked a fair amount of retail orders. Mines have managed to move their domestic output so far by unusual effort. Prices on all high grades of coal have been maintained and the usual increase became effective Aug. 1 except on Big Seam and similar grades. August prices on Cahaba lump are $4.05@$4.80; Black Creek, $4.30; Corona, $3.35; Carbon Hill, $3.10; Montevallo, $4.55@$5.30; Big Seam, $1.75@$2.25.

Steam coal buying is about normal for this season and spot business is sufficient to keep the mines going with their contract obligations in hand. There is little or no surplus coal and quotations are stable on the schedules which have been supported by the market for the last two months or more. General industrial consumption through contract agreements is large, utilities, railroads and coke-making requiring a heavy tonnage. The bunker trade is reported as very quiet at present.

## Hard Coal Trade More Active

At New York the anthracite market shows considerable activity. The companies already have orders booked to care for the bulk of their August tonnage, these having been accepted subject to prices prevailing at date of shipment. In the rising market the policy of the independents is to sell from week to week only, or even from day to day, in order to get the full benefit of advancing prices.

Retailers are buying heavily to meet current demand and to build up stocks. Dealers report they have all the business they can handle. Some are working the strike scare for all it is worth, while others are putting the soft pedal on it lest they play into the hands of oil-burner salesmen.

The Philadelphia trade from all angles is fairly satisfactory. Demand for all sizes has strengthened much during the past seven days, the mines are making full time and production is close to normal.

Local retail demand is only ordinary, but some of the independents, mostly those who sell their coal through commission houses, have added considerably to their prices.

Stove has tightened up considerably and is not coming in freely, but there is no shortage. Much the same thing is true of egg, and while nut is still easy to get, there are signs that it too is in better demand. Pea has improved, but there is still a plentiful supply all around. Steam sizes have braced and company producers are coming close to moving every ton to market.

Retail prices of hard coal, except buckwheat, moved up 25c. per ton in Baltimore Aug. 1. During July, for which period there was a wholesale advance, the retail trade absorbed the increase and continued to sell to the general public at the same rates as quoted in June.

The Buffalo anthracite trade is still getting the benefit of the possible strike and retailers generally report good business. The prospect is that the beginning of September will see quite as much coal in cellars as in former seasons.

Some independents are getting higher prices, but it is hardly possible to sell that coal here.

There is a decided shortage of anthracite in this territory. The city retailers are able to get what they need and the rail line movement is pretty good, but there is next to no surplus for shipping by lake. Only four or five cargoes are now loaded into lake vessels in a week.

Coke sells moderately. There is every prospect of a much-increased demand for it when cold weather sets in, and the handlers of it will be many.

Lake shipments for the week were 37,800 tons, of which 13,300 tons cleared for Fort William, 9,500 tons for Duluth, 7,000 tons for Ashland, 6,000 tons for Milwaukee and 1,500 tons for the Sault.

## Connellsville Coke Market Unchanged

There was no change in the Connellsville coke market last week either in prices or volume of demand, though some operators have hope of obtaining extra business in coke as an anthracite substitute.

Demand for spot furnace coke is confined almost wholly to small lots for non-metallurgical consumers. The price holds at $2.90, to which it had advanced a week ago. There is no demand for spot coke from furnaces and no inquiry as to contracts. Furnaces using purchased coke are neither blowing in nor blowing out.

A non-ferrous metal interest which has been buying coke, not strictly standard furnace coke, in odd lots lately has put out an inquiry for a regular supply for a month or to the end of the year, as a feeler, presumably prompted by thought of the possibility of coke advancing on account of anthracite conditions.

Foundry coke for spot shipment remains dull, prices being unchanged at $3.75 to $4.25, with the higher price rarely paid. Specifications on contracts have not picked up as was expected.

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## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended July 18, 1925 | 1,010,970 | 170,742 |
| Previous week | 982,809 | 160,444 |
| Week ended July 19, 1924 | 930,713 | 146,703 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| July 22, 1925 | 296,743 | 101,542 | ..... | ..... |
| July 14, 1925 | 309,560 | 111,449 | ..... | ..... |
| July 22, 1924 | 344,892 | 158,606 | ..... | ..... |

# Foreign Market And Export News

## British Coal Market More Active; Output Slightly Higher

With the possibility of a stoppage in the Welsh coal trade at the end of the month there has been increasing activity in the shipment of coal and also in inland deliveries. Supplies of coal are not now available to any great extent. Foreign depot owners and other consumers, including South American, Egyptian and Irish railways, which have large contracts for Welsh coal, have taken steps to increase deliveries as far as possible. With the heavier shipments and reduced supplies offered colliery owners are holding out for better prices for any coal they have for disposal.

At Newcastle-on-Tyne the week opened with all classes showing a firm tone and sellers were fairly successful in getting the higher quotations. Inquiry is from all directions but chiefly from the Mediterranean and coaling stations.

Production by British coal mines in the week ended July 18, a cable to *Coal Age* states, totaled 4,890,000 tons, compared with 4,820,000 tons in the preceding week.

### French Industrial Grades Dull; House Coals More Active

The calm of the French coal market has not been lifted to any extent; in fact the movement of industrial grades is quite bad, though household fuels are somewhat more active.

The proposed reduction of railway freight tariffs so as to allow easier clearances from the French mines to the western region of the country has been rejected owing to the uncompromising attitude of the State Railways.

The French market has been expecting a strike at the British collieries and a number of importers have balked at accepting orders, not knowing if they would be able to execute them. This has given an impetus to sized dry descriptions and to French, Belgian and Dutch anthracite grades. German free coals have been arriving in small quantities.

The tax on production and imports of fuels, substituted for the tax on transactions, provides a rate of 1.70 per cent of the price on sales of coals and lignite and of 1.80 per cent on coke.

### Hampton Roads Coal Market Unsettled but Firm

Possibility of a hard-coal strike and its probable effects, unsettled the Hampton Roads market last week, cut down the supply of spot coal and increased the number of inquiries. The market was strengthened somewhat, but the trade was in a state of decided uncertainty as to how to move.

Shipments to Canada and to Europe appeared to be holding their own, but the business was mostly on long-time contracts. Very few shippers were willing to sell coal far ahead, and while they were not inclined to quote prices too low they still were skeptical of big advances.

### Belgian Coal Trade Worse

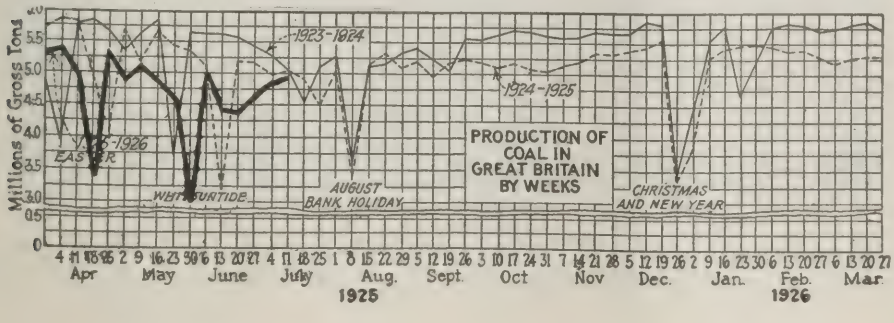
The situation in the Belgian coal market is getting worse week by week, industrial grades having taken a disastrous turn due to the strike of metallurgists and structural workers in the Charleroi Basin. Business is particularly bad also in the Borinage, where shutdowns of pits are more numerous. Stocks total around 2,400,000 tons.

Producers are well booked for sized products, particularly for sized dry grades, and refuse deliveries to outside markets. Sized anthracite products are quoted on the rise for movement inland.

### U. S. Fuel Exports in June

(In Gross Tons)

| | 1924 | 1925 |
|---|---|---|
| Anthracite | 346,349 | 313,535 |
| Bituminous | 1,426,979 | 1,435,973 |
| Exported to: | | |
| France | 65,615 | 40,599 |
| Italy | 71,843 | 77,058 |
| Other Europe | 3,943 | 1,147 |
| Canada | 1,096,854 | 1,038,464 |
| Panama | 19,312 | 48,466 |
| Mexico | 9,610 | 8,077 |
| Br. West Indies | 9,938 | 19,528 |
| Cuba | 27,356 | 45,371 |
| Other West Indies | 22,167 | 16,177 |
| Argentina | 5,059 | 1,200 |
| Brazil | 66,078 | 100,401 |
| Chile | 11,229 | ........ |
| Egypt | ........ | 11,646 |
| French Africa | ........ | 7,250 |
| Other countries | 17,970 | 20,589 |
| Coke | 48,238 | 50,484 |



### U. S. Fuel Imports in June

(In Gross Tons)

| | 1924 | 1925 |
|---|---|---|
| Anthracite | 4,490 | 25 |
| Bituminous coal, shale and lignite | 16,087 | 576 |
| Bituminous coal and slack | 15,113 | 32,809 |
| Imported from: | | |
| United Kingdom | ...... | 450 |
| Canada | 15,113 | 32,913 |
| Japan | 9,500 | ...... |
| Australia | 6,587 | ...... |
| Other countries | ...... | 22 |
| Coke | 2,771 | 8,802 |

### Export Clearances, Week Ended Aug. 1, 1925

| FROM HAMPTON ROADS | |
|---|---|
| For Canada: | Tons |
| Ital. Str. Color, for Montreal | 6,363 |
| Br. Str. Rose Castle, for Quebec | 10,605 |
| Br. Str. Daghild, for Quebec | 11,426 |
| Br. Str. Kamouraska, for Quebec | 7,110 |
| Br. Str. Penolver, for Three Rivers | 5,454 |
| For Canal Zone: | |
| Amer. Str. Achilles, for Cristobal | 12,068 |
| For Nova Scotia: | |
| Amer. Str. Suffolk, for Halifax | 7,548 |
| For Italy: | |
| Ital. Str. Valprato, for Genoa | 7,073 |
| Jap. Str. Kofuku Maru, for Genoa | 8,060 |
| For Jamaica: | |
| Br. Str. Macabi, for Kingston | 3,000 |
| For French West Indies: | |
| Br. Str. Dunstaffrage, for Fort de France | 6,995 |
| For Newfoundland: | |
| Br. Str. Cranley, for Botwoodville | 6,017 |
| For France: | |
| French Str. P. L. M. 14, for Rouen | 5,606 |
| FROM PHILADELPHIA | |
| For Cuba: | |
| Br. Str. Onega, for Havana | —— |
| Nor. Str. Sagaland, for Havana | —— |
| For New Brunswick: | |
| Am. Schr. Purnell T. White, for St. John | —— |
| For Brazil: | |
| Jap. Str. Denmark Maru, for Rio Janeiro | —— |
| FROM BALTIMORE | |
| For Canada: | |
| Nor. Str. Urter, for Port Alfred | 2,097 |
| For Gibraltar: | |
| Ital. Str. Aster | 8,923 |

### Hampton Roads Pier Situation

| N. & W. Piers, Lamberts Pt.: | July 23 | July 30 |
|---|---|---|
| Cars on hand | 1,731 | 1,613 |
| Tons on hand | 110,850 | 100,449 |
| Tons dumped for week | 103,714 | 158,651 |
| Tonnage waiting | 20,000 | 6,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 866 | 859 |
| Tons on hand | 60,800 | 64,150 |
| Tons dumped for week | 90,205 | 78,400 |
| Tonnage waiting | 1,679 | 7,395 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,690 | 2,789 |
| Tons on hand | 126,720 | 137,485 |
| Tons dumped for week | 170,424 | 160,979 |
| Tonnage waiting | 4,620 | 19,745 |

### Pier and Bunker Prices, Gross Tons

| PIERS | July 25 | Aug. 1† |
|---|---|---|
| Pool 1, New York | $5.30@$5.60 | *$5.25@$5.50* |
| Pool 9, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 10, New York | 4.50@ 4.60 | **4.50@ 4.65** |
| Pool 11, New York | 4.25@ 4.50 | 4.25@ 4.50 |
| Pool 9, Philadelphia | 4.65@ 4.90 | 4.65@ 4.90 |
| Pool 10, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 11, Philadelphia | 4.25@ 4.30 | 4.25@ 4.30 |
| Pool 1, Hamp. Roads | 4.25 | **4.30** |
| Pool 2, Hamp. Roads | 4.10 | **4.20** |
| Pools 5-6-7, Hamp. Rds. | 4.00 | **4.10** |
| BUNKERS | | |
| Pool 1, New York | $5.55@$5.85 | *$5.35@$5.65* |
| Pool 9, New York | 5.00@ 5.25 | *4.80@ 5.00* |
| Pool 10, New York | 4.75@ 4.85 | *4.50@ 4.65* |
| Pool 11, New York | 4.50@ 4.75 | *4.25@ 4.50* |
| Pool 9, Philadelphia | 4.80@ 5.05 | 4.80@ 5.05 |
| Pool 10, Philadelphia | 4.60@ 4.80 | 4.60@ 4.80 |
| Pool 11, Philadelphia | 4.45@ 4.65 | 4.45@ 4.65 |
| Pool 1, Hamp. Roads | 4.35 | **4.40** |
| Pool 2, Hamp. Roads | 4.20 | **4.25** |
| Pools 5-6-7, Hamp. Rds. | 4.10 | **4.15** |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | July 25 | Aug. 1† |
|---|---|---|
| Admiralty, large | 26s.6d. | **30s.** |
| Steam smalls | 26s.6d.@ 27s.6d. | *17s.6d.* |
| Newcastle: | | |
| Best steams | 22s.6d. | *18s.* |
| Best gas | 25s. | *16s.* |
| Best bunkers | 25s. | *18s.6d.* |

† Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

Frank G. Long has been appointed superintendent at the Flat Creek Mines of the Alabama By-Product Corporation, succeeding J. D. Hollis, resigned.

The Alabama Mining Institute, J. J. Holmes Safety Association and local U. S. Bureau of Mines will sponsor the regular first-aid and field day meet, the date for which has been tentatively set for Oct. 6 at Birmingham.

A. W. Hudgens has been appointed manager of sales for the Alabama Fuel & Iron Co., one of the largest commercial coal producers in the Birmingham district, and will maintain his offices with the company in the Brown-Marx Building, Birmingham. Mr. Hudgens has been acting as executive official for the Galloway Coal Co. in charge of its Alabama operations for several years.

It is reported that the Cordova Brick Co. will develop a mine on its properties west of Cordova, where the company owns a large tract of land containing fine coal and fireclay deposits. The company will build a number of houses for employees, it is stated.

## ARKANSAS

Approximately 95 tons daily was loaded on the Midland Valley R.R. at the No. 2 mine of the Greenwood Coal Co., Greenwood, last week, following the opening of the mine under 1917 wage scale, according to reports. Fifty men are at work at the mine. The mine is one of the largest in the state.

The coal mine in the Shiloh community near Dardanelle is operating on full time and producing a large tonnage of coal.

Governor Terral has announced the appointment of Claude Speegle, of Hartford, to be state mine inspector to succeed Jesse Redyard, whose term expired. Mr. Speegle was appointed for two years. The state mine inspector's office is maintained at Fort Smith.

Members of the miners' union at Russellville have been raising funds with which to defray the expense of returning to their homes 53 penniless miners who came from Bristol, Tenn. The Tennessee workers were brought in, it was reported, to enter the employment of the Bernice Anthracite Coal Mining Co., with the assurance that a shortage of labor had necessitated the employment of non-union miners. Though no demonstration was made by the union men, the Tennessee miners decided to discuss means of getting back to Bristol after they were taken to the Bernice mines by an armed guard. The Bernice mine officials declared an open-shop policy several months ago.

## ILLINOIS

J. W. Fairbairn, Galesburgh, has found coal at a depth of 107 ft. on his farm five miles east of that city. Though geologists had given an unfavorable report, he persisted in his belief that he was on coal land. The vein is said to be nearly 5 ft. thick and of good quality. The Galesburgh Mining Co. will begin production Sept. 1.

Three mines, all of good size, reopened during the last week in July in the southern and south central district. The No. 15 mine of the O'Gara Coal Co. at Carrier Mills, resumed as did the No. 2 mine of the Saline County Coal Corporation at Ledford. Mine No. 12 at Witt, of the Indiana-Illinois Coal Corporation, also resumed operations after several months' idleness.

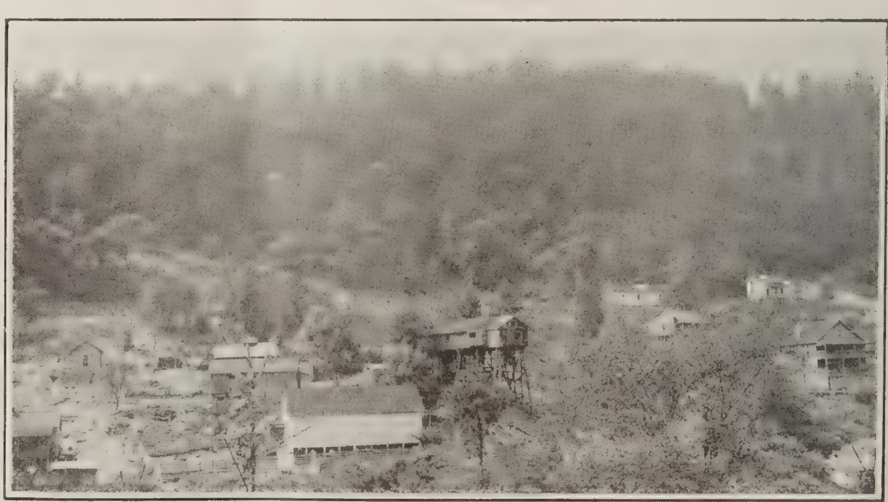
The Chicago, Burlington & Quincy R.R. announces the promotion of general agent C. J. Nelson, with headquarters in Herrin, to the position of general agent of the coal department with headquarters in Chicago. Mr. Nelson will assume his new duties at once and will be succeeded by A. F. Vogel, of Herrin.

The will of J. K. Dering, coal-mine owner and operator, which disposes of a $2,000,000 estate, leaves one-third to the widow, one sixth to a brother, Charles L. Dering; $200,000 to employees, one-tenth to charity, and the remainder to his son, Jackson K. Dering, Jr., when he attains the age of 30 years. Under the $200,000 provision for employees Joseph Roynon and James B. Pauley, were given $20,000 each and Duncan B. Bedill received $10,000. The will further provided that each employee in the Chicago office and in the personal service of Mr. Dering for ten years or more should receive $5,000; each employee for five years or more $2,500; each mine superintendent employed five years or longer, $2,500; each mine employee paid on a monthly basis and employed five years or more $1,000.

Wasson Mine No. 1, Herrin, which had been closed down for six weeks or more, resumed work July 16.

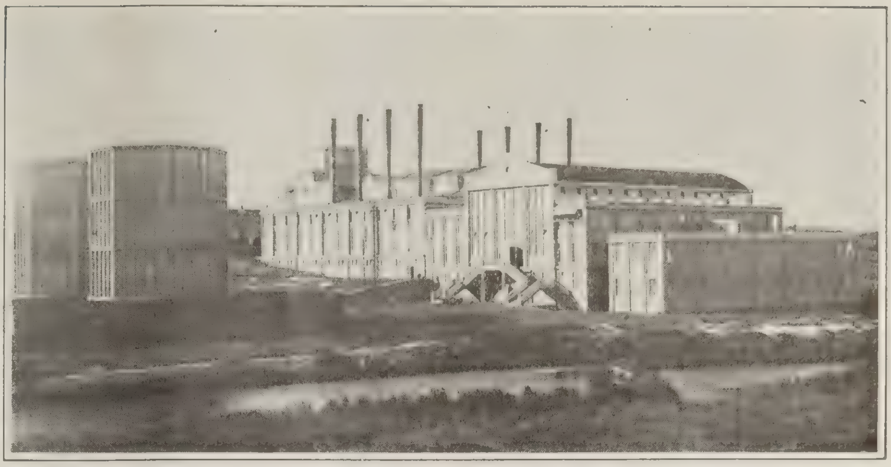
After a recent shutdown for repairs, the big No. 10 mine of the Indiana & Illinois Coal Corporation, at Nokomis, resumed operations July 23. Over 800 men who had been idle on account of the shutdown are back at work. Officials of the company expect that the shaft will work several days each week until cold weather, when full-time operations are looked for. The big shaft has a daily hoisting record of over 600 tons, and when operating at full capacity furnishes employment for 1,200 miners.

The Nason Coal Co. has been awarded the contract to supply the State of Illinois with coal for the following state institutions: Southern Illinois penitentiary, 9,000 tons; Menard State Hospital, 900 tons; State School at Geneva, 2,500 tons. The contract aggregates $50,000.



**Part of Village of Comargo Coal Co., LaColeman, Ky.**

In the center of the illustration is the tipple and receiving station for the cableway which conveys the coal across Big South Fork of the Cumberland River. The mine is served by the Kentucky & Tennessee Ry.



**Central Station of the Coal Mining Co. of Liévin, France**

The generators develop 30,000 kw. The cooling towers on the left and the chimney stacks in the shape of inverted cones will occasion notice.

## INDIANA

The Walters and Mattinly coal property, near Boonville, was sold to Fred J. Stock, Boonville, at a receiver's sale July 22.

The third shift of men employed at the Pike County Collieries Co., near Oakland City, has been temporarily laid off. The No. 1 and No. 2 shifts are working steadily and the No. 3 shift is expected to be put back to work soon.

The Cypress Creek Coal Co.'s property, four miles west of Boonville, was placed on the market July 25. The entire stock of the company, consisting of 2,000 shares, par value $50, was offered to the highest bidder. The Cypress Creek Mine, known as the "John Bull Mine," has for a number of years been one of the best producers in the Boonville district and is said to be one of the finest equipped mines in southern Indiana. It has a daily output of 1,200 tons.

## KANSAS

Mine No. 17 of the Jackson-Walker Coal & Mining Co., near Frontenac, was reopened with sixty men July 28 by Sam Thornburg and James Murphy, who are operating it under lease. The mine was closed several weeks ago to permit the installation of electrical equipment and a new shaker screen.

Officials of District 14, United Mine Workers, announced July 28, as the result of a series of conferences with operators of mines in the district which have not been working under contract with the union, that these operators had agreed to sign contracts and encourage the organization of workmen in their mines: The Jenkins Coal Co., the Big Five Coal Co., the Holt Coal Co. and the Overjohns Coal Co., operating Mayer No. 11. Men at the Jenkins shovel have been out of the union three years, while the Perfecto mine has been non-union two years.

Upon the agreement of the operators to withdraw the demand that all miners employed by them buy stock in the company, the strike called six weeks before at the Patton Coal & Mining Co.'s No. 5 mine was terminated July 15. The Patton company recently announced its intention to open Hamilton No. 7 under lease under a similar agreement, an announcement which likewise drew fire from union officials.

The Teerleen Coal Co., composed of L. G. Norris, Ed Brennan and W. E. Kelly, will start shovel operations on a 40-acre tract they own south of Mulberry, late in August. The bed they will work is from 34 to 36 in. thick with an 18 to 20 ft. overburden. Brennan and Kelly formerly were with the Republic Coal Co., at Minden, while Norris operates the Norris electro-shovel mine east of Croweburg. The mine is on the Kansas City Southern R.R.

Officials of District 14, United Mine Workers, aroused by alleged efforts of operators in the Henryetta (Okla.) field (District 21), to recruit miners from union ranks in Oistrict 14 to work under the 1917 scale in the Oklahoma field, have written all locals of the district urging them to combat the offers of the Oklahomans.

The Frisco R.R. has closed contracts with Kansas operators for approximately 500,000 tons of coal for the year ending March 31, 1926. While the quantity is the same as purchased from Kansas last year the greater part of it will come from strip mines under the new contract, instead of from the deep mines, as under the old contract. "Strip coal has been in use the last month and is proving a success," C. E. Bissell, fuel agent for the Frisco in the Kansas field, stated. The companies with whom the new contracts were signed during the week ended July 25 are the Central Coal & Coke Co., Crowe Coal Co., Clemens Coal Co. and Hamilton Coal Co.

George Burla and Ralph Walker suffered burns from gas while resinking an old shaft for the Magnolia Coal Co. near Mineral on July 24 and died some hours later. The lower vein of coal was worked out ten years ago and the 150-ft. shaft filled with cinders. The shaft was being reopened to the 40-ft. level to work the top vein. Sulphureted hydrogen from the old workings made its way through the cinder filling and ignited when one of the workmen struck a match to light his pipe.

The Pittsburg Midway Coal Co. has paid more than $75,000 in the last few weeks to land owners between Coffeyville and Angola and Valeda for coal rights, the payments being made as fast as the titles to the properties are approved. Options were taken some time ago.

## KENTUCKY

The Tennessee Jellico Coal Co., Louisville, has recently filed amended articles limiting its liability to $1,000,000.

The Kentucky Court of Appeals has cleared Sheriff Tolbert Holliday, of Perry County, of charges of misconduct in office and has replaced him in good standing. Governor Fields had under the ouster law held him guilty and ordered him out of office. Holliday will serve until Jan. 1, 1926, when his term expires. He had been charged with neglect of office, accepting pay from coal companies for giving them protection, and numerous other things, many of which it was alleged, were merely trumped up charges in an effort of a lawless element to get rid of the sheriff.

The Downard Mining Coal Co., which purchased a Harlan County mine a few month ago, has changed its name to the Downard Mining & Sales Co., of which J. Paul Downard is the active head. Elmore Manning, one of the original officers of the concern, sold his interest some time ago, and is now manager at Louisville for the Southern Coal Co., of Memphis.

The mines of the Eden Coal Co., near Blackey, in Letcher County, which had been down for some time, have resumed operations on a full-time basis, and with a prospect of fairly steady operation. A. S. Petrey, of Hazard, is head of the company.

The steamer Julius Fleischman, of the Hatfield-Reliance Coal Co., interests, came in from the West Virginia fields a few days ago, leaving eight barges of coal at Louisville, three to go down river.

C. D. Major, of the Byrne & Speed Coal Co., Beaver Dam Coal Co., North Jellico Coal Co. and allied Speed-Sackett coal interests of Louisville, recently won a handsome golf trophy at the Audubon Country Club.

Abner Lunsford, head of the Henry Ford coal interests stated in Cincinnati last week that the big Banner Fork mines at Kentenia, in the Hazard field, were down and would not be working for a week or ten days on account of a break in the shaft.

Denver B. Cornett, eastern Kentucky mine operator, of Harlan, is one of five men whose names have been given to Governor Fields, from which one name will be selected for appointment as member of the State Board of Election Commissioners. The names were selected by the Republican state central committee.

## MISSOURI

The city supply commissioner of St. Louis, July 29 awarded contracts for coal to be supplied the water works and various city institutions for the period Aug. 1, 1925, to July 31, 1926. The largest contract for the water department, calls for a minimum of 60,000 tons of water screenings f.o.b. Bissell's Point Pumping Station. It went to the Crerar-Clinch Coal Co. at $2.63. The Berry Bergs Coal Co. contracts to deliver 20,000 tons of screenings to the city sanitarium pumping station for $2.69 per ton and for 7,500 tons of mine-run at $3.05.

Three men lost their lives on July 21 as the result of black damp in a coal mine seven miles southeast of Unionville. They are Alzono Minear, Pearl Minear and Ted Baugher. The mine was not being worked. Baugher had gone down the shaft 22 ft. to bring out some tools when the damp struck. The two others went to his rescue and also were overcome.

## OHIO

Miners in the pits of the Pittsburgh Coal Co. at Pomeroy were paid $23,118.67 in their last pay for two weeks' work, officials of the company announced at Pittsburgh Thursday. The payroll of the Stalter-Esses Co. is understood to have amounted to about $8,000, making a total mine payroll at Pomeroy of more than $31,000. The pay of the Pittsburgh Coal Co. represents a substantial increase since it began operating three mines there. There are now 379 miners working for the company in that field.

C. J. Albasin, commissioner of the Pittsburgh Vein Operators' Association in the southern Ohio field, reports that only 40 mines are working in that district. Production totals will be much below those of previous years, he says. The same situation exists in the Wheeling district.

On what probably will be the last artificial wave used for wafting heavy shipping down the Ohio River until the completion of the lock and dam system that will assure a 9-ft. stage, more than 30,000 tons of coal arrived at Cincinnati July 30. The coal was consigned from the Kanawha River and Huntington, West Virginia, to the Island Creek, Campbell Creek, Philadelphia & Cleveland and Hatfield-Reliance coal companies.

The Lake Erie Fuel Corp., of Buffalo, has opened a branch office in Cleveland in charge of George C. Schwehr, who is president of the Cleveland Wholesale Coal Association, but was formerly a Buffalo coal man.

## OKLAHOMA

The union coal miners made their most pretentious demonstration July 26 against operators who refuse to pay the 1924 wage scale. Speeches were made by national and district union officials. Several hundred cars carrying miners paraded at Okmulgee, the county seat, and in Henryetta the streets were filled with cars throughout the day. The union miners had challenged the operators to debate the coal situation at a meeting July 26. Sunday morning the Henryetta District Coal Operators' Association published a statement declining to accept, saying that their mines were operating on the 1917 scale and that the local miners could go to work at it if they so desired and if they did not other miners would be brought in from the outside. Col. E. Head, 180th Infantry, Oklahoma National Guard, commanding the troops at Henryetta, refused to answer when asked if he had called for additional troops, but more soldiers were noted during the meeting July 26.

**Where Drop-Bottom Cars Are Discharged Automatically**

Steel tipple of Stearns Co-Operative Coal Co., a subsidiary of the Stearns Coal & Lumber Co., at Co-Operative, Ky. A light and airy structure. In the dumping of drop-bottom cars a minimum of shock is sustained by the tipple.

Five mines in the Henryetta field which are being operated under open-shop rules produced 7,900 tons of coal in the week ended July 18, according to J. O. Johnson, assistant commissioner of the Southwestern Interstate Coal Operators Association. Six mines were running open shop last week. A tonnage of 1,600 is the weekly output of five other mines, four of which are run co-operatively and the fifth under contract, Johnson said. Picketing of the mines has been peaceful and for the most part has been carried on by women and children, who hold meetings outside the mines, sing songs, offer prayers and endeavor to persuade non-union miners to join the union ranks, it is said.

## PENNSYLVANIA

The union mines of the Pittsburgh district are now operating at 8.3 per cent of capacity, according to the reports to the Pittsburgh Coal Producers' Association for the week ended July 25. With a weekly capacity of 629,880 tons the 14 working mines out of 80 produced during that week 52,204 tons. The operations compare with 7.7 per cent in the previous week, but with 28 per cent last year at this time.

Approximately 4,500 acres of coal land in the Snow Shoe region near Bellefonte, with six miles of railroad, half a dozen houses, two steam shovels and all modern equipment for stripping operations, will be sold at receivers' sale on Aug. 27 by R. P. McClellan, A. R. McNitt and T. B. Bridgons, receivers for the Blanchard-Moshannon Coal Co. Stripping operations were begun by the company two years ago under the presidency of William G. Blanchard, of Pittsburgh.

The Jefferson-Indiana Coal Co., which is operating several of the mines of the Rochester & Pittsburgh Coal & Iron Co., produced 8,800 tons of coal one day last week, thus breaking the record at one or two of the mines. Work is on a reduced-wage scale. There is no disturbance.

Governor Pinchot has reappointed S. J. Phillips, of Scranton, as an anthracite mine inspector.

The Indian Creek drainage case is expected to be finally disposed of on Aug. 10, when a hearing will be held at Uniontown before Judge Van Sweringen. At this hearing a plan will be submitted whereby the coal companies of the Indian Creek Valley may construct a drainage tunnel for sufficient distance to avoid pollution of the stream from which two public service companies draw their water supplies. Both parties to the long-fought dispute are ready to agree to a settlement this way, if possible, it is understood, and the coal companies joined in the petition to the court for the hearing date. The case attracted wide attention for a long period due to the vigorous complaint of the Pennsylvania R.R.

## UTAH

J. R. Flemming has been awarded the lease of 1,800 acres of coking coal land in the Sunnyside district of Emery County. The conditions are that the government receive a royalty of 12½c. per ton. The sum of $75,000 must be expended in developing the property within three years and a minimum annual production of 50,000 tons beginning in the fourth year is required.

## VIRGINIA

The Clinchfield Coal Corp. reports net earnings of $2,000,853 for the first half of 1925, against $2,170,921 in the same period in 1924. After all deductions the company reported a net income of $241,615, against $336,474 last year. After preferred dividends and sinking-fund requirements the company reported a surplus of $177,323 for the half year, against $274,557 last year.

The Big Sandy & Cumberland R.R., a narrow-gage subsidiary line of the Norfolk & Western Ry., running from Devon, W. Va., to Grundy, Va., 33 miles, has applied to the Interstate Commerce Commission for authority to build an extension of 14 miles near Hurley, in Buchanan County, Virginia, along Home Creek and the Lester Fork of Knox Creek. This is to shorten the line and reduce grades. It also will connect two lines. The route is in a coal and timber region.

### WEST VIRGINIA

Coal operators in northern West Virginia are expected to receive telegrams this week to report to New York City for final conference on the much-discussed $100,000,000 merger. There are twenty companies involved and it is reported that this is a showdown on the proposition.

The Brady-Warner Coal Co. resumed operations on July 23 at the Abrams Creek mines at Oakmont on the Elk Garden branch of the Western Maryland, with about 45 men reporting for work the first day; but it is stated by E. Richard Brydon, who is in charge of the mine that when it is in full operation the mine will use about 100 men and will be able to produce from 500 to 600 tons. The Abrams Creek mines have been idle since January 1. A large amount of money has been expended by the company in modernizing the mines.

The Consolidation Coal Co. has ordered a steel headframe for its new plant, No. 261, at Juno, McDowell County. The company has been developing this mine for several years, and at present is producing a large tonnage.

The Bethlehem Mines Corporation is planning the installation of a water system at Barrackville. The water will be filtered for use by the miners of the village and for use in boilers at the mine.

In an address before the Lions Club of Morgantown, R. M. Lambie, chief of the West Virginia Department of Mines declared that wherever rock dusting has been employed and explosions have occurred the destruction of life and property has been reduced to a minimum—in fact, according to Mr. Lambie, the velocity of the explosion has spent itself within a short distance when it struck the section of the mine where pulverized limestone had been used. The chief of the West Virginia Department of Mines declares that $6,000 a year will adequately dust any mine in West Virginia. He believes this to be "a sum infinitely small in comparison to the added protection it gives lives and property."

T. C. Songer, of Ashland, Ky., general chairman of the Brotherhood of Locomotive Engineers for the Chesapeake & Ohio Ry., was elected chairman of the board of directors of the Coal River Collieries Co. at a special meeting at Huntington, July 21. G. C. Hoffman, of Cleveland, assistant treasurer of the company, was elected to the directorate to fill the vacancy caused by the recent death of Warren S. Stone. The latter was chairman of the board.

The following companies have filed certificates of dissolution with the Secretary of State: The Harry B. Coal & Coke Co., Dixie Mining Co., Big Four Coal Co., Car-Diff Smokeless Coal Co., Beall Knob Coal Co., Marshall Fuel Corporation, Twin States Fuel Co., Junior Coal Co., Robinson Run Fuel Co., Begley Coal Co., W. H. Green Coal Co., Piney Creek Coal Co., Masontown Coal Co., Spring Mountain Mining Co., Troll Coal Co., Steamwell Coal Co. and Penn Marva Coal Co. Certificates of withdrawal have been filed by the Fort Dearborn Coal Co. and the Low Moor Iron Co., of Virginia.

### CANADA

Premier E. N. Rhodes of Nova Scotia and the members of the new government were in conference at Halifax on July 27 in connection with the Cape Breton coal strike. No announcement was given out as to the result of their deliberations. The conferences between the government, the representatives of the British Empire Steel Corporation and the District Board of the U. M. W. were to be resumed on the 30th. Further acts of vandalism have occurred in the strike area including incendiary fires at Glace Bay and Reserve, the looting of John R. Blue's store at New Aberdeen, and minor depredations. A warrant has been issued for the arrest of Joseph MacLeod, British Empire Steel Corporation policeman, on a charge of murder for the shooting of William Davis, in the New Waterford riot of June 11.

The Rosedale Mine, at Drumheller, Alta., resumed work July 25 with the men working under a United Mine Workers charter. There were twenty-five miners at work there, according to mine officials. District President Sherman, of the U. M. A., went to Rosedale on June 24 under police protection, and says he had a very encouraging meeting there, all present voting for a return to the United Mine Workers fold and accepting their agreement with the operators.

The British Columbia Court of Appeal is soon to decide upon the constitutionality of the tax on fuel oil imposed by the Provincial Legislature ostensibly for revenue purposes but actually with a view to protecting the coal-mining industry of Vancouver Island in particular and the province in general. Many consumers have refused to pay the tax. When the tax was imposed the Canadian National Rys., the Canadian Pacific Railway Co., the Union Steamship Co. of British Columbia and the Powell River Co., all large consumers of fuel oil, appealed to the Governor-General-in-Council against the tax, contending that the tax was indirect and could be levied only by the federal government and was within only the federal jurisdiction because it really was a custom or excise duty. The Canadian Privy Council, on the advice of the Department of Justice, declined to rule on this protest, and recommended that it be referred to the courts.

## Traffic

### Rehearing Begun on Illinois Intrastate Rates

Assistant Commissioner George W. Pillow, of Marion, Ill., representing the Illinois Commerce Commission, sitting in the East St. Louis (Ill.) City Court July 28 and 29, took testimony in the remanded fight of southern Illinois coal mines operating in what is known as the "Inner Group" to force a reduction in the present intrastate freight rate of 91c. per ton.

The Illinois Supreme Court recently overruled the St. Clair County Circuit Court, which had sustained the Illinois Commerce Commission in reducing the rates to 70c. a ton and remanded the case for further hearing.

The complainants allege that the present rate is excessive. The Alton & Southern R.R. was the technical defendant in the case heard by Pillow, but all other lines serving the Inner Group mines will be affected.

The East Side Manufacturers Association and the Illinois Coal Traffic Bureau have joined the fight for lower freight rates on coal and their cases will be heard by Pillow.

### Hearing on Ohio Coke Rates

The Coal, Coke and Iron Ore Committee, Central Freight Association Territory, announces that a hearing will be given in Room 606, Chamber of Commerce Building, Pittsburgh, Pa., Thursday, Aug. 13, 1925, at 10 a.m., daylight saving time, on the following proposed change in the rate on coke, coke breeze, coke dust and coke screenings (the direct products of coal), carloads, from South Lorain, Ohio, to Cleveland, Ohio: Rate to be made $1.26 per net ton to bring it into proper relation with rates via other routes and with rates from other districts.

Henry Pfening, Jr., superintendent of the Southeast Coal Co., and the Business Men's Club at Whitesburg, Ky., have filed petition with the Louisville & Nashville R.R. asking lower general commodity freight rates between Ravenna, Ky., and McRoberts, on the Eastern Kentucky division, holding that rates for years have been unduly high and out of line. The various towns affected, as well as Hazard, Ky., have joined in the protest.

Traffic Manager A. R. Yarborough of the Kanawha Operators Association has passed on to members of his association advices from F. M. Whittaker, vice-president in charge of traffic of the Chesapeake & Ohio Ry., that mine cards will be marked with a clause, where desired, to the effect that coal shall not be delivered until payment is made of freight and all other lawful charges.

## Recent Patents

**Mining Machine**; 1,536,131. Thomas E. Pray, Chicago, Ill., assignor to Goodman Manufacturing Co., Chicago, Ill. May 5, 1925. Filed Aug. 4, 1921; serial No. 489,793.

**Concentrator and Flotation Separator**; 1,536,236. William R. Morris, Boise, Idaho, assignor to Mineral Development Co., Boise, Idaho. May 5, 1925. Filed Feb. 23, 1922; serial No. 538,723.

**Mining Machine**; 1,536,327. Frank Cartlidge, Cincinnati, Ohio, assignor to Sullivan Machinery Co., Chicago, Ill., May 5, 1925. Original application filed June 12, 1915; serial No. 487,724. Divided and this application filed June 25, 1924; serial No. 722,373.

**Skip-Hoist and Tram-Car Operating Means**; 1,536,432. Wm. E. Hale, Fort Washington, Pa., assignor to R. H. Beaumont Co., Philadelphia, Pa. May 5, 1925. Filed March 4, 1924; serial No. 696,778.

**Draft Device for Mining Machines**; 1,536,795. Charles E. Davis, Chicago, Ill., assignor to Goodman Mfg. Co., Chicago, Ill. May 5, 1925. Filed May 6, 1920; serial No. 379,237.

**Safety Fuse**; 1,537,296. A. F. Gearhart, MacDunn, W. Va. May 12, 1925. Filed May 5, 1922; serial No. 558,816.

**Coal Separator**; 1,537,947. E. P. Humphrey, Upper Lehigh, Pa. May 19, 1925. Filed Feb. 26, 1924; serial No. 695,240.

## Trade Literature

**Ash and Soot Disposal at the Milwaukee Sewerage Plant.** Conveyors Corporation of America, Chicago, Ill. Pp. 16; 8½ x 10¾ in.; illustrated.

**Waugh Turbo Stoper, Model 39.** The Denver Rock Drill Mfg. Co., Denver, Colo. Bulletin No. 100A. Pp. 11; 6 x 9 in.; illustrated. Describes design and construction.

General Electric Co., Schenectady, N. Y., has issued a 120-page book, No. 87000-E. covering the installation, operation and maintenance of **Switchboards.** The book measures 8 x 10½ in. and is well illustrated with photographs, diagrams, tables, formulas, etc.

**Ace Steam Trap.** W. B. Connor, Inc., New York City, N. Y. Catalog A. Pp. 10; 6 x 9 in.; illustrated. Describes in detail design, construction and operation.

The Osgood Co., Marion, Ohio, recently issued Bulletin 256, a four-page folder illustrating and describing its **¾-Yd. Power Shovel** and its combinations.

Link-Belt Co., Chicago, Ill., recently issued an 8-page booklet describing and illustrating the operation and use of the **Gondola Car Dumper.**

Vulcan Iron Works, Wilkes-Barre, Pa., builders of locomotives, have just issued an 8 page bulletin, No. 102, featuring 16- and 20-ton gear-driven gasoline locomotives. Complete specifications and general description of these two sizes is included as well as hauling-capacity charts. Some interesting photographs also are shown.

## Publications Received

**Tests of a Large Boiler Fired with Powdered Coal at the Lakeside Station, Milwaukee**, by Henry Kreisinger, John Blizard, C. E. Augustine and B. J. Cross. Bureau of Mines, Department of the Interior, Washington, D. C. Bulletin 237. Pp. 77; 6x9 in.; illustrated.

**Preliminary Report on Coal Stripping Possibilities in Illinois**, by Harold E. Culver. Prepared under a co-operative agreement between the Illinois State Geological Survey Division, the Engineering Station of the University of Illinois and the U. S. Bureau of Mines. Bulletin 28. Pp. 61, 6x9 in.; illustrated.

**South America's Trade**, with Particular Reference to the Share of the United States in Export and Import Trade of the Ten Republics. Foreign Commerce Department, Chamber of Commerce of the United States, Washington, D. C. Pp. 30; 6x9 in.; tables. Contains tables showing the chief commodities bought and sold by the United States and South America, the best customers and chief suppliers. Individual tables are given showing United States trade with each republic. The figures used in general are for 1923.

**Chemistry of Engineering Materials**, by Robert B. Leighou. McGraw-Hill Book Co., Inc., New York City. Second edition. Price, $4. Pp. 538; 5½x8 in.; illustrated. Chapters dealing with fuels, iron and steel corrosion, non-ferrous metals and non-ferrous alloys have been almost entirely rewritten and new material added.

**Market Analysis — Its Principles and Methods**, by Percival White. McGraw-Hill Book Co., Inc., New York City. Second edition. Price, $4. Pp. 438; 5½x8 in.; illustrated. A thorough revision of this pioneer book on market analysis, presenting new chapters on organizations for market research, agency market research, industrial and community surveys and newspaper surveys.

## Association Activities

At the annual meeting of the **Operators of the Williamson Field**, held during the third week of July, Thomas J. Devenny was elected president; W. B. Cummins as vice-president, George Bausewine as secretary, and W. L. Leckie as treasurer. Addresses were delivered by W. J. Jenks and G. W. Harman, vice-president of the Norfolk & Western Ry.; D. E. Spangler, general superintendent of transportation of the N. & W.; H. C. Weller, general superintendent of the N. & W.; E. S. Moore, superintendent of transportation; O. W. Cox, general coal freight agent of the N. & W.; W. O. Franklin, superintendent of the Pocahontas Division; D. F. Peters, superintendent of the Sciota Division; John Stuart, chairman of the Car Allotment Commission; Norwood Davis, car distributor of the Norfolk & Western at Williamson; W. E. Keepler, secretary of the Pocahontas Operators Association; C. C. Morfit, secretary of the Tug River Operators Association; George Dungleson, in charge of the N. & W. mines, and Thomas Harmon, prominent Pikesville (Ky.) attorney. The meeting was arranged by George Bausewine, secretary of the Williamson Operators Association.

## Industrial Notes

**The T. H. Edelblute Co.**, manufacturers of rerailers and track braces, recently built a new and enlarged factory at Reynoldsville, Pa., which will be managed by N. G. Edelblute. The general sales office will be continued in the Wabash Building, Pittsburgh, Pa.

**The Strom Ball Bearing Mfg. Co.**, Chicago, has appointed Frank R. Schubert as general manager. John Dlesk succeeds Mr. Schubert as works manager, and Lorenz Peterson continues as assistant works manager in charge of production.

## New Companies

**The Eynon Coal Co.**, Pomeroy, Ohio, has been chartered with a capital of $250,000 to mine and sell coal. Henry D. Emrys, David and Daniel Eynon, Jr., and Charles Brown are the incorporators.

Papers have been filed with the Secretary of State of Ohio, chartering the **Castner Coal Co.**, with a capital of $10,000. The new concern which will be located at 118 N. 6th St., Steubenville, will mine and deal in coal. Incorporators are: Vincent A. Morelli, William V. Morelli, David H. Thomas, Lula H. Morelli and Max Turendish.

**The Industrial Lignite Co.** was incorporated in Greenville, Texas, early in July, with a capital stock of $21,000, by J. D. Middleton, G. M. Hodges and others.

Articles of incorporation of the **Spokane Carbon Coal Co.** were filed at the county auditor's office at Spokane, Wash., recently. Capital stock is $450,000. The incorporators are O. C. Moore, W. D. Codefroy and William Watson.

**The Riceville Coal Co.**, Riceville, Ky., capital $25,000, has been chartered by Frank Morgan, T. L. Cowen and Elmer E. George.

**The Carter Coal Co.**, Madisonville, Ky., has been incorporated with a capital of $30,000, by Jewell Avis, Colman L. Jones and Sherman P. Boner.

**The Blount and Meredith Coal Co.**, Cambridge, Ohio, has been chartered with an authorized capital of $10,000 to operate coal mines and deal in coal. T. A. Blount, W. T. Meredith, William J. Griffith, A. A. Vance and Dwight McVicker are the incorporators.

A Dominion charter has been granted to **Saunder-West Collieries, Ltd.**, at Calgary, Alta. The company has capital stock of $150,000 and the incorporators are: Alexander Hannah, O. H. Might, E. J. Chambers, H. G. Nolan and L. R. Souter, all of Calgary.

**The Connery Coal & Investment Co.**, 332 South Michigan Avenue, Chicago, has been incorporated for the ownership and development of coal mines and properties. The incorporators are Arthur R. Hall, Samuel M. Rinaker and M. F. Gallagher.

## Obituary

**Seth M. Thompson**, age 59, died at the Norwood Hospital, Birmingham, Ala., July 26 as a result of injuries alleged to have been sustained from a fall of rock in the mines of the Helena-Straven Coal Co., near Helena, Shelby County, Ala., where he was employed as a foreman. Mr. Thompson was an associate inspector in the State mining department for nine years, having left the service of the state May 1 last. He was widely known in mining circles where his death will cause much regret. He is survived by his widow and several children.

**Edward H. Bair**, 65 years old, of Greensburg, Pa., well known in the business life of that district died in his home there July 28. Mr. Bair founded several power companies and organized the Clare Coke Co. and the Commonwealth Coal Co. He leaves a wife and five children.

**Julius Judson Higgins**, 76, formerly a well known coal operator in Indiana fields died July 25 while riding alone in his automobile in the downtown section of Clinton, Ind. After he was stricken, his car crashed into a truck and stopped. Mr. Higgins was born near Dayton and settled in Clinton 40 years ago. He is survived by two sons and one daughter. He was active in politics, having been state Senator. Funeral services were held in Clinton July 27 and the body was taken to Dayton, Ohio, for burial July 28.

**Duncan McKay**, one of the pioneer coal operators of the Henryetta (Okla) district, died recently at his home in that city after a short illness. Mr. McKay was a native of Aberdeen, Scotland, and came to Henryetta in 1906, engaging in the coal industry as a producer.

## Coming Meetings

**Rocky Mountain Coal Mining Institute.** Summer meeting, Aug. 26-29 at Price, Utah. Secretary, Benedict Shubart, Denver, Colo.

**American Institute of Mining and Metallurgical Engineers.** 132d meeting, at Salt Lake City, Utah, Aug. 31 to Sept. 3. Secretary, H. Foster Bain, 29 West 39th St., New York City.

**Oklahoma Coal Operators' Association.** Annual meeting, Sept. 10 at McAlester, Okla. Secretary, A. C. Casey, McAlester, Okla.

**New York State Coal Merchants' Association.** Annual convention, Sept. 10-12, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**Association of Iron and Steel Electrical Engineers.** Annual meeting at Philadelphia, Pa., Sept. 14-19. Secretary, John F. Kelly, Empire Bldg., Pittsburgh, Pa.

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries, Sept. 28 to Oct. 3, at Grand Central Palace, New York City.**

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

# COAL AGE

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Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. Dawson Hall
*Engineering Editor*

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## Lewis Breaks Off Negotiations

NOTHING MORE FOOLISH and suicidal has been done by the mine workers than to break off the parley with the operators. The public is staggered to think that John Lewis and his co-workers want a strike. We will not arbitrate the matter, they said at first. Now they add: Nor will we confer with you unless you are ready to make concessions to us. If only Mr. Lewis had been able day by day to record a triumph to his anthracite supporters he would have consented to a parley, but to meet men who give way on nothing angered Mr. Lewis and he and his committee withdrew.

It has come, then, to the point that the operators are allowed to discuss wages with the United Mine Workers of America only when they are ready to make concessions. They must not discuss them in the hope of lowering scales or of continuing the present wage rates.

The session to be held with the Mine Workers is only to determine the size of the surrender and not whether there shall be any surrender at all or whether the miners shall not surrender a little to the operators. Every two years there must be a wage advance. No "backward step" must be taken. If the increase is not granted before all the mine workers' claims are presented the parley must come to end, even before the operators have been able to make their own proposals.

The public is suprised at the arrogance of the miners. It was in doubt before; it sees the condition clearly now. Those who wish a settlement without a price increase now gain encouragement, for if public sentiment sets fairly against the United Mine Workers they have no hope to gain the 30 per cent, or larger, increase which they are demanding.

## What Will Mr. Coolidge Do?

NEWSPAPERS writing from Swampscott, Mass., where the President is staying, tell us Mr. Coolidge is threatening drastic action to settle the strike of the anthracite miners should it occur, but that the President is not yet ready to use moral suasion. He desires to wait. Apparently they would infer that he is willing to let matters drift till he conceives the public is ready for drastic measures. Meantime the papers say the President is displeased with both sides because they do not quickly reach an agreement, and that he is as much vexed with the party that would arbitrate as with the party that won't, with the party that was ready to continue the conference as with the party which broke it up.

The newspapers represent Mr. Coolidge as unwilling to get into the controversy. If he hopes ultimately to compel arbitration and select the arbitrators it may be well for him to be careful about prejudging the case, but there is no reason why he should not soundly rebuke the mine workers for refusing arbitration and for breaking up the conference. There is no reason why, as the newspapers represent him, he should denounce both equally for obdurateness, knowing as he does that the public will forgive the mine worker and hear only that the operator is obdurate, whereas the latter is willing to submit to arbitration and is not at all intransigeant.

It is clear that if the President intends to take drastic action he should be willing to "break the truth" to the public as to the situation. He should not lead the people to get a prejudiced view of the case, yet he has not helped the situation one whit. He has said absolutely nothing unless he has said it to the newspapermen, and if they reported aright what he said little could be devised that would be more likely to stiffen the attitude of the mine workers.

When the time comes to take drastic measures can they be taken against the mine workers if the latter are backed by the support of the whole union interest? It will be as useless as trying to sweep back the sea with a broom. Unless the public, the union men of the country and the other wage earners are convinced that the President is right and his policy sound his action will merely make martyrs of the miners and fail to effect anything.

Consequently we fear the drastic action will be directed at the operators, who will be pliant, of course. They always are. They will sign anything; they will accept the blame for anything they will sign. No one can condemn them. The pressure of public opinion is too heavy. What are the operators among so many? America has 110,000,000 people, and the operators are only a handful.

The industry will get a body blow and then will be sick and blamed for being sick, and later be given another body blow for being sick and always whining. The rest of 110,000,000 will regret that it has to live with such an industry. Why, they will repeat, is there a perpetual problem with the anthracite industry?

Why, indeed? Solely because we temporize. Solely because we will not face the truth. We prefer to use drastic methods with the industry than to tell the facts as they are. Great Britain has temporized and must pay a subsidy. Are we so sure of our ground that we can let Mr. Lewis' challenges go unanswered?

## Mine and Other Hazards

MORE PEOPLE have been killed in New York City already this year by automobiles than are killed in the anthracite region by mine hazards in a whole year. The New York City record for automobile accidents up to July 18 totaled 501; the fatalities in anthracite mines in 1924 were 496.

If John L. Lewis would broadcast this among the people of New York City, he would effectually meet the argument he presented at the Hotel Traymore, Atlantic City, when he first met with the anthracite negotiating conference. But this he does not want to do. His address, it will be remembered, did not plead a wage inadequate for living on the American scale but proclaimed that it did not provide compensation for the perils of mining. Only Andrew Mattey with his large family spoke of the need for a higher wage scale. The consumers who thread the streets of New York among the automobiles of the metropolis without once seeing a fatality realize that, after all, only the totaling of the anthracite figures, like the marshalling of automobile accidents into statistics, could have resulted in the complex in the public mind which leads it to believe mining to be the most hazardous of industries.

This week we publish those workmen's compensation rates in Ohio that are higher than those of coal-mining. They are a surprise to almost everyone, though the facts have been known for years. Only the industrious publication of the facts as to the coal industry and the complete suppression of the facts regarding the construction industry have made people believe the coal mines have the leading fatality rate. After all, coal mining is dangerous, largely because it is from first to last a construction and not an established industry. It is always extending its operations. It is constantly erecting and demolishing its environing walls. It is always blasting ground. No wonder its record is but little better than that of the industry which it so greatly resembles. It probably would be worse if it were not better organized and controlled for safety by its operating forces.

## The Day of the Coal-Mining Curriculum

MINING education has had a period of inflation and just now is experiencing a definite shrinkage. It is necessary to analyze the causes for this condition in order to see where coal-mining education should stand.

In 1921-22 according to the U. S. Bureau of Education there were 2,895 four-year mining and metallurgical students in 121 schools of engineering. Probably the impetus given the metal-mining industry during the war accounted for this. The men who entered college in 1918 either left college before 1921 or were completing their graduating studies in 1921-1922.

In 1918 the metal-mining industries were doing well. In the years immediately following the public still had faith that the metal industries would revive. In fact after the war was over the mines continued for a time at full blast. The metal-mining industry had just received a large increase in capital provided by the banks and as a result of this industrial control, technical training was at a premium, making a college education attractive. Metallurgy had been becoming increasingly technical and, therefore, inviting to college men.

Young men who were seeking a career were some time realizing that the metal-mining and metallurgical industries could not continue to absorb the large number of men graduating. But it was evident in succeeding years that the incentive to graduation in metal mining and metallurgy had declined, for in the next year there were only 2,661 mining and metallurgical students, in 1923-24 1,898 and in 1924-25 only 1,563.

A large number of students in recent years have been seeking instruction in petroleum engineering. The petroleum industry is another occupation that has had large increases in capital with rapid progress in technique. That has made college education necessary and profitable. The rule-of-thumb methods have passed away rapidly. The development of the industry has passed forever from the control of a class of men who believed that all that was necessary was to be able to run N 45 E lines with a compass, to be able to handle a peach limb and to be competent to bulldoze drillers, teamsters and property holders. We scarcely know the industry to be the same as in earlier years now that the college-trained petroleum engineer has recreated it.

It would appear that coal-mining is going through a similar transition. Capital is coming in. Technical advice is being sought and appreciated. The rule-of-thumb method and the day of "I think" or "I guess" is being relegated to the past, and there should be a good prospect for the coal-mining engineer.

The operator who rose from a mule driver or a miner, may not appreciate science. Some do, but most do not. But the industry is getting to be in charge of college-trained capitalists. They may not be trained as engineers, but they think in terms of scholarship, and they demand that college men direct operations. Equipment that can only be handled by trained men is being introduced. Consequently we can look for college men to be in the ascendent as they are in metal mines.

At one property and not a really large one with, perhaps, six mines are 32 college men. This property is operated by a metal-mine company. It is being run like a metal mine. This is significant of the future. What we wish to know is whether the young coal-mine men will recognize the change and fit themselves for the new conditions or shall we transfer men from the metal mines, who are available to execute plans which coal men have not education enough to put into actual practice?

The anthracite industry long well capitalized by banking concerns and long operated on a relatively high technical basis has a large number of college men in its personnel. The chance for the man without college training is not good in most companies. Those who have risen from the ranks without technical education, surround themselves with men who have such training and admit that had they entered the industry a few years later the ladder by which they climbed would have been far too short to have reached up to the positions they have attained.

Each year a few of those rungs are removed and in a few years even the foremen may find that only the ladder of technical education will reach up and beyond that occupational level. Even today there are foremen who are felt to be hindrances to progress. As they die off their places will, in many cases, be filled by college men, who will be more receptive to modern ideas and better equipped to make such ideas operate successfully.

The day of the coal-mining curriculum is at hand. He will not be a wise young man who will fail to recognize that fact. We are saying of college education what has been said and truly said for many years of a lower standard of education—the mining institute and the summer courses in coal mining.

### *COAL AGE INDEX*

THE INDEXES *to COAL AGE are furnished free to all who ask for them. The index for the first half of* 1925 *is now ready for distribution. A copy can be had by addressing a postcard to the subscription department of COAL AGE.*

# Susquehanna Collieries Co. Is Rapidly Modernizing Its Properties and Making Savings

## Redesigned Equipments Make Possible Most of Electrifications Economies — Unsalable Sizes of Coal Generate Power Cheaper than It Can Be Bought

**By Edgar J. Gealy**
Associate Editor of *Coal Age*
New York City

WITHIN the last eight years few if any anthracite companies have made more rapid progress toward complete electrification and modernization of their mines than the Susquehanna Collieries Co., of Wilkes-Barre, Pa., a subsidiary of the M. A. Hanna Co. Ever since 1917, when the property was taken over by the present interests, both the officials of the parent company, at Cleveland, and the mining company officers have been exerting every effort to modernize its operations. Today it has surpassed its big brother producers in many respects and is therefore prepared to compete successfully in the battle against increased mining costs, substitute fuels and other economic problems.

What is perhaps more significant, however, is the fact that the company is accomplishing many of those things which other mining companies have persuaded themselves could not be done.

Today the company is burning for its own use slush—finer coal than the smallest now being sold—thus being able to send to market thousands of tons of small size fuel formerly burned at the mines. The company is generating electrical energy from pulverized anthracite at a cost much lower than that at which it can be purchased, even after charging liberal interest and depreciation rates against its own plant.

Changes to the mining equipment are being made with no delay to the production of coal. Old steam-driven hoists and fans are still being converted to electric drives without the necessity of installing new hoist or fan units or erecting new buildings. In short, the company is obtaining most of the direct savings and other benefits of electrification and modernization without the large expense involved in making complete new installations.

To the critical eye of an outsider it is true that some of the company's properties do not appear to be models of perfection; however, when it is considered that, ofttimes at many mines, the urgency for an improvement due to losses sustained by old machinery makes prompt corrective measures necessary, there is apparent a good economic reason which justifies outward appearances. If a steam-driven mine fan must be changed to electric drive on a Sunday or some other holiday, or power losses under old methods are too great to be allowed to continue, then there is plenty of reason for not waiting to construct a handsome building. Besides, when a certain amount of money is available for modernization sometimes it is best to spend it for the greatest result-getting, savings-making changes. Appearances may be improved later.

At the power plants of the company important pioneering work has been done. The power plant at Lytle was the first to use pulverized anthracite, and the success attained with fuel in this form at this plant and also at the power house near Lykens may revolutionize power generation from anthracite and prompt many other coal companies to make savings in their power bills in the same manner.

The company is divided into five major divisions, each of which is independent of the others in so far as its source of power is concerned. The Wyoming district, near Wilkes-Barre, is supplied with power from the coal company's electric plant at Nanticoke. The Shamokin power house supplies electrical energy to mines in its district. The pulverized-fuel plant at Lytle furnishes energy for the Lytle Coal Co., operated under the same management. The Lykens pulverized-fuel plant, at Short Mountain, supplies electrical energy to the Lykens district. The power requirements in the William Penn district are taken care of locally. The electric generating capacity at the four main power stations is shown in Table I.

From this table it is apparent that the power system

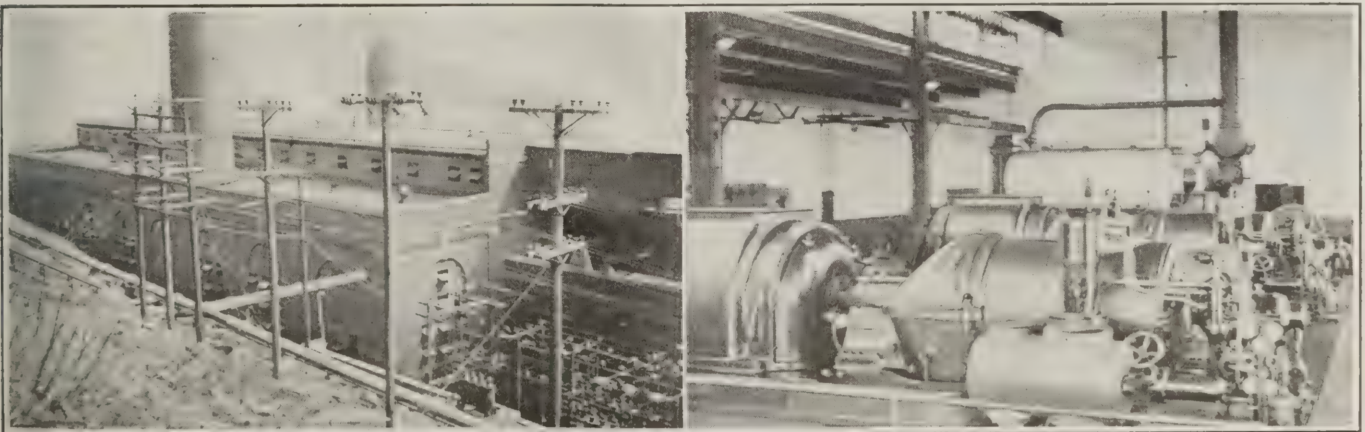


**Fig. 1—Lykens Plant and Turbo-Generators. Here Large Scale Pioneering with Pulverized Anthracite Is Going On**

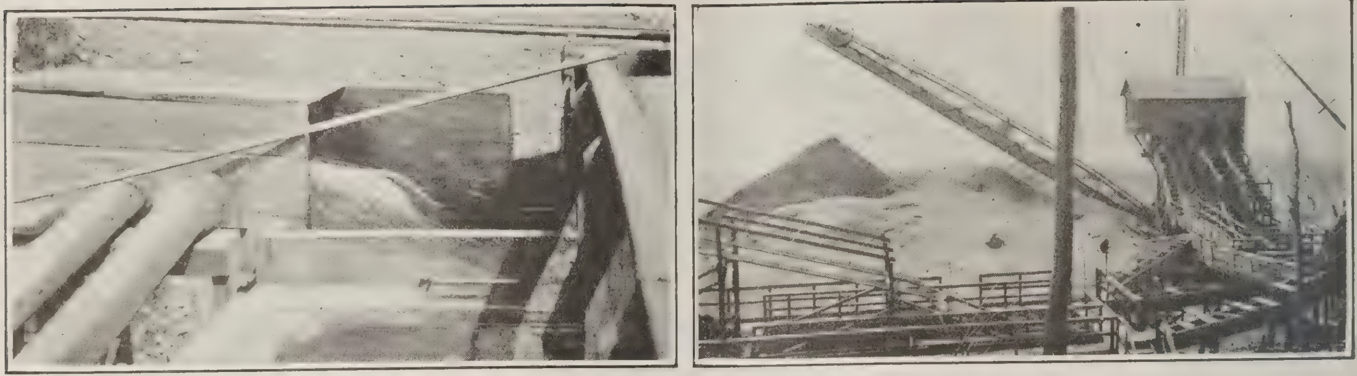


Fig. 2—Liquid Anthracite and Storage Boom Near Power House Keep Busy During Working and Idle Periods

At the Lykens power plant, V. V. Secor, the plant superintendent, calls the fluid coming out of the pipe shown on the left "liquid anthracite." All the fuel used for generating steam is transported to the power house by pumps. The coal is so fine that it can be pumped with the wash water used in the breaker and washery. On the right is shown one of the storage booms.

Table I—Capacity of Main Power Plants

| Location | Size of Units | Total Capacity |
|---|---|---|
| Nanticoke | 2—4,000 kva. | 8,000 kva. |
| Shamokin | 2—3,750 kva.* | 7,500 kva. |
| Lytle | 2— 625 kva.<br>1— 937 kva. | 2,187 kva. |
| Lykens | 2—4,000 kva. | 8,000 kva. |
| Grand total | | 25,687 kva. |

* At present there is boiler capacity here for one unit only.

of the company is greater than that of some of the largest mining companies in the anthracite region. Table II shows the total amount of energy generated at these plants during 1924.

Table II—Energy Generated in 1924

| Location | Kw.-Hr. | Location | Kw.-Hr. |
|---|---|---|---|
| Nanticoke | 19,494,580 | Lytle | 5,992,145 |
| Shamokin | 22,878,000 | Lykens | 32,548,280 |

At the Shamokin power house, in addition to the energy generated there, 13,350,558 kw.-hr. of electrical energy was purchased last year. It is interesting to note that with this arrangement, the coal company's Shamokin generating unit had a yearly load factor of 88.5 per cent.

That it is possible to obtain high machine-load factors on anthracite mine electric equipment also is illustrated by results in this division. The total connected load of the Shamokin district is 16,460 hp., or approximately 12,330 kw. The 24-hr. power consumption is about 120,000 kw.-hr. This indicates a 24-hr. load factor of 41 per cent or based on 8 hr. per day, a load factor of 123 per cent on a full working day.

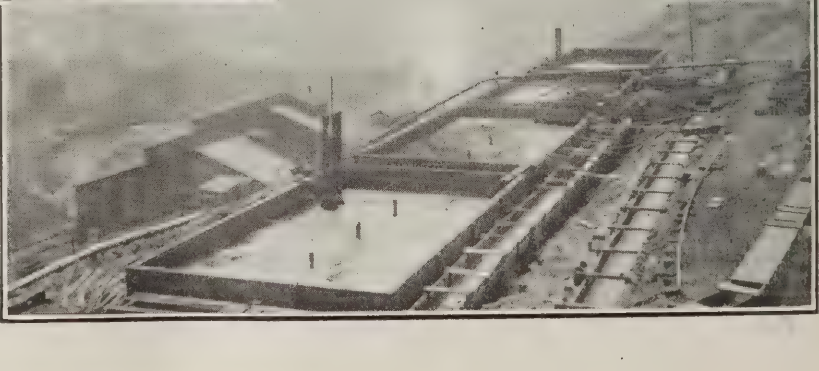
At some of the power plants a power factor of 96 per cent is attained during the day and about 90 per cent at night. This fine condition is made possible by the use of large synchronous motors on many types of drives. Most power-converting equipment consists of synchronous motor-generator sets. Air compressors are equipped with synchronous motors and many of them are of large capacity. Thus it has not been necessary to float synchronous condensers on the lines to correct poor power factor conditions.

Each of the power plants, except the Shamokin plant, has a tie connection with a nearby power company, however; this is for emergency service only and is reciprocative. For example, the contract covering the exchange of energy between the Nanticoke plant and

FIG. 3

Mountains of Fine Size Coal Await the Grinders

On the left is shown the "Black Alps." They are mountains of fine-size fuel ready to be pulverized in the mills supplying the boiler plant.



Last Traces of Fuel Are Taken Out in Settling Tanks

The water which carries the fine coal to the storage plant passes through these settling tanks before being returned to the breaker and washery. This is necessary so as to obtain good preparation for the marketable sizes.

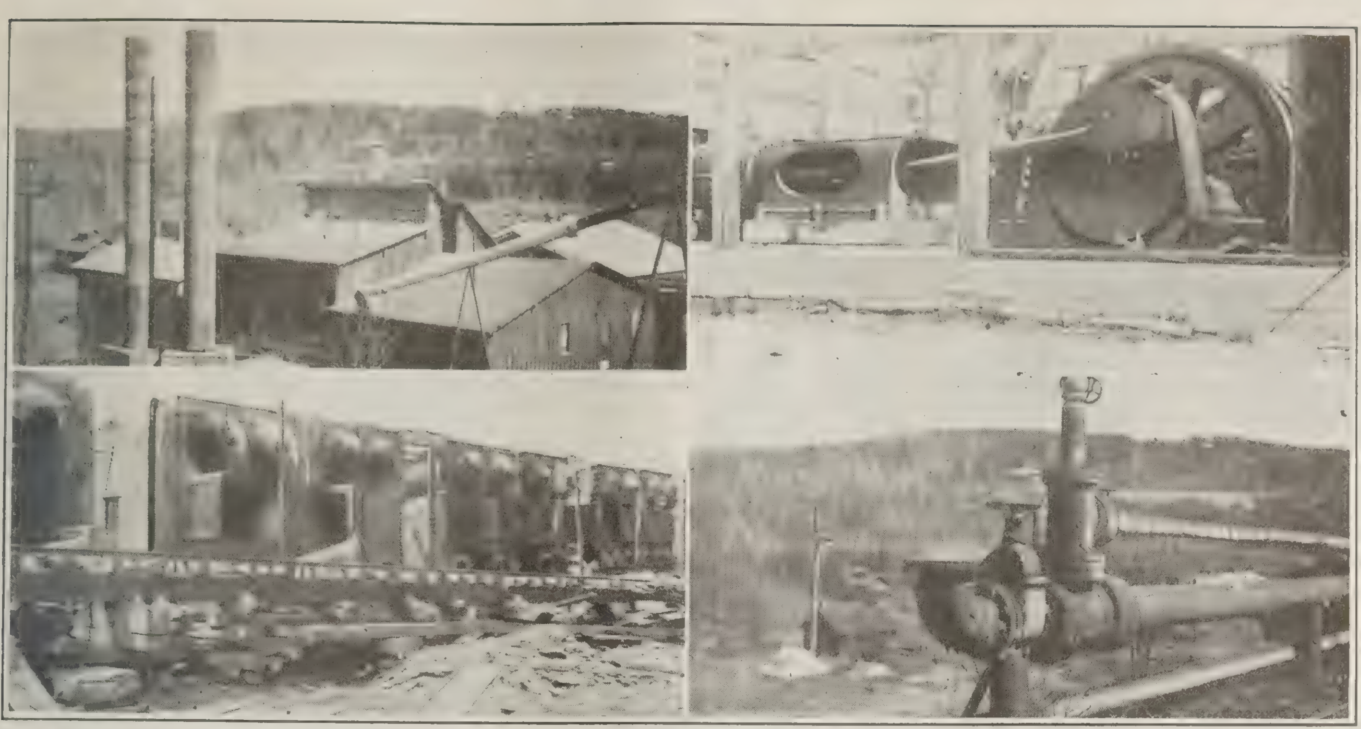


Fig. 4—The Passing Review and What Goes with It

Old fashioned inefficient steam plants, long steam lines and steam-eating engines no longer have a place in the march of progress. They are passing out in favor of modern electric power generating units and motors which use energy only when in service and transmission lines which do not try to heat the whole outside world.

the Luzerne County Gas & Electric Co. has been made purposely high so as to force each party to the contract to stand on his own legs throughout as large a part of the time as possible.

The thought of electrofying shaft hoists usually throws a scare into the minds of some engineers and company managers. The size of the present old-type steam engine, its high speed and the large building it requires make many of them grow faint when they think of the costs involved in any change.

Yet the Susquehanna Collieries Co. has electrified some of its shaft hoists at relatively low costs and is realizing large power savings thereby. The engineers determined first of all that whatever improvements were to be made on their hoists should not interfere with the steady operation of the mine. They also found that many of the hoists could be operated at slower speeds and thus use smaller motors than appeared necessary before a test was made. The possibility of obtaining higher load factors for the hoists meant much in determining the size of the motors; consequently good power factor conditions and low peaks on the power plants have resulted.

Many beneficial results usually not given due consideration when planning the electrification of a hoist also have been obtained. Slower speeds have reduced the stresses and strains on the equipment and thus maintenance costs have decreased. The rotary motion of the electric motor produces none of the vibrations common to steam engines with their rapidly changing reciprocating action. In the words of some of the shaft repair men: "You can hold the cage guides with 10-d. nails since the hoists have been electrified."

The flow of coal to the breaker also has been made more uniform with electric hoisting, which makes better preparation possible. Maintenance costs of hoisting cables have decreased. With high-speed steam engines the slippage of the rope on the sheave wheel while starting and the slippage of the wheel due to its inertia when the hoist is stopped caused excessive wear not now experienced.

The ease with which the motorized hoists are operated makes few if any of the old steam-hoist engineers, now operating electric machines, care to return to the steam-driven units. Some of the oldest engineers who have operated steam engines for more than thirty years have adapted themselves to electric hoists as easily as a duck takes to water.

By abandoning individual isolated boiler plants, which furnished steam through long, inefficient steam lines to hoists, fans and compressors, large savings have been made. All of these old engines formerly operated non-condensing and many were installed with overload capacities far in excess of any demand that ever arose.

How these installations were changed to electric drives without interfering with the operation of the

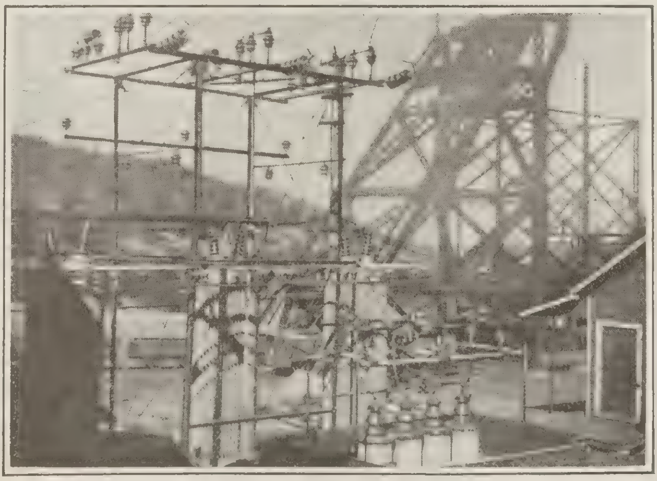


Fig. 5—Newly Constructed Substations Make Mines More Modern

At No. 7 shaft, near Glen Lyon, three 400-kva. transformers step the voltage from 22,000 to 2,200. The large-capacity substation is already proving too small for the increasing electric load.

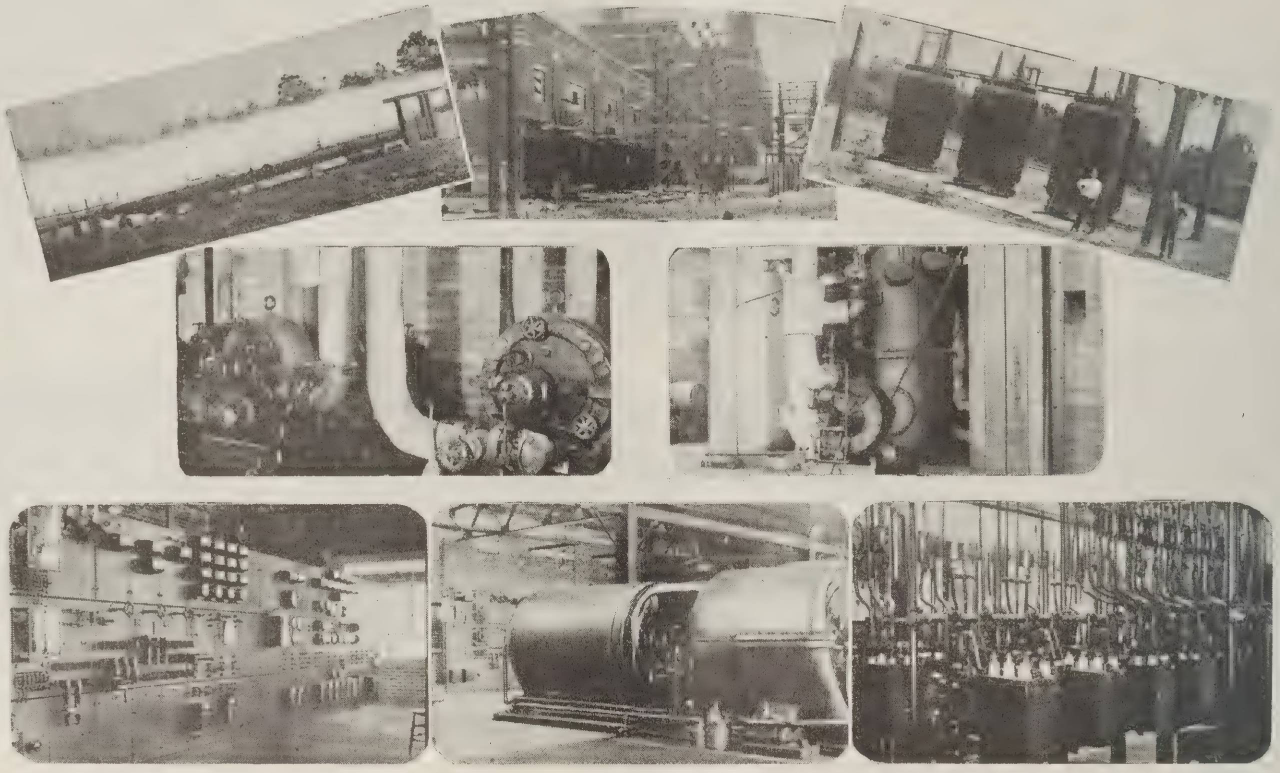


**Fig. 6—The Shamokin Power House with Its Modern and Recording Breaking Equipment. Any Power Company Would Be Justifiably Jealous of Its Load Factor**

In many respects this is one of the most wonderful power-generating plants in the coal regions. For many days and nights the turbo-generater unit operates at 100 per cent load factor. Large pumping loads come on at night when the breaker and hoist machinery ordinarily stops. Last year the plant had an all-year load factor of 88.5 per cent, including during the period every minute of the time. These pictures show how modernly it is equipped. Solenoid-operated switches operate the circuit breakers which connect to many feeders and supply lines. The plant is tied in with a public-utility company operating in this district. A spray pond cooling system is used and thus only a small quantity of water is necessary to operate this plant.

mines is most interesting. Machines designed when electric motors were almost unknown are now rejuvenated and the engineers who have done the work have used electricity. A few examples show how each installation was a problem in itself.

At Stearns No. 4 shaft the main hoisting equipment was changed from steam to electric drive. Originally the hoist was driven by a first-motion steam engine. The two steam cylinders were located as shown in Fig. 7. All the work preliminary to the change to electric drive was done while the steam hoist was in daily operation.

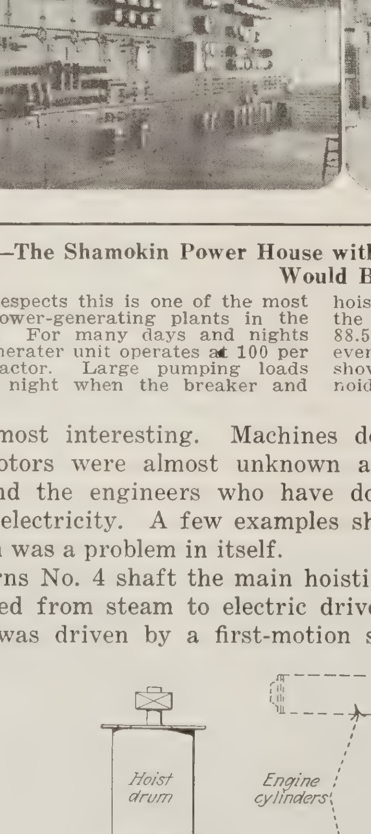


**Fig. 7—An Old Steam Hoist Electrically Operated**

Isolated boiler plants which were costly to operate were completely abandoned. This hoist, at Stearns, was equipped with herringbone gears and an electric motor.

A large solid coupling was provided for attaching the drum shaft to the reduction gears driven by the motor. These gears are of the herringbone type. The motor is a 300-hp. 2,200-volt slipring induction type unit. An automatic weighted airbrake is applied whenever power fails. In this manner the electrified hoist is made safer than with the steam drive.

Another large-size hoist was changed to electric drive at the No. 7 shaft of No. 6 Colliery, at Glen Lyon, Pa. A 400-hp. induction motor drives the hoist through herringbone gears. Connected to the high-speed shaft is a gear-type overspeed tripping device which gives all the protection obtainable by steam operation. The layout is shown in Fig. 8.

An interesting change-over was made at the fan house at Stearns. Here the former steam engine was supplanted by a 75-hp. 2,200-volt induction motor connected through an automatic starter. Whenever power is restored after a shutdown on the transmission line the automatic starter sets the motor in operation immediately without any manual operation.

Fig. 9 shows how the old steam engine frame is used to support a bearing box which carries one end of the fan shaft. Suitable speed reduction is obtained by means of a silent-chain drive running in an oil-tight casing.

No. 7 shaft fan house, near Glen Lyon, was altered

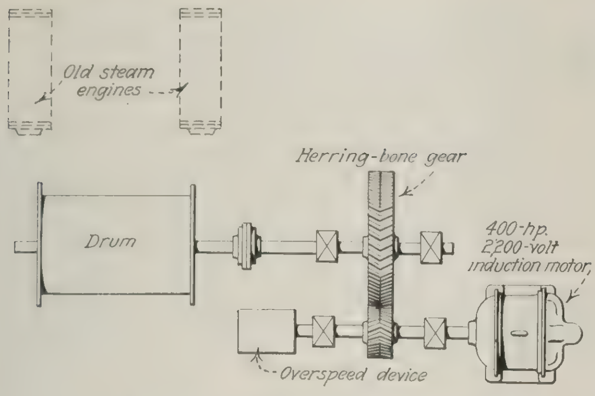


**Fig. 8—Main Shaft Hoist Rejuvenated**

The automatic speed and over-hoist control equipment supplied with the motor which now drives this old steam hoist makes a simple outfit easy and safe to operate.

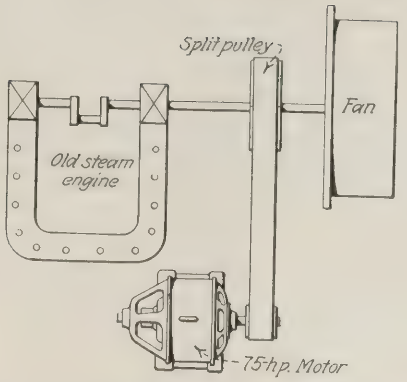


**Fig. 10—Electrified Though Little Changed**

A split pulley was mounted on the fan shaft and the change from steam to electric drive was completed without interference to coal production.

but little when an electric motor replaced the old steam drive. Practically nothing was taken out of the engine house when the change was made. As shown in Fig. 10, a split pulley was mounted on the old fan shaft and belted to a 75-hp. 2,200-volt motor. The installation looks peculiar because the steam engine remains in position, but its crank has been disconnected. The old engine bearings support the fan shaft.

The Mill Seam fan house, at Nanticoke, was driven by a cross-compound steam engine which received its steam from a separate boiler house maintained and operated for this fan only. The fuel was freighted over the Pennsylvania R.R. from the breaker, nearly half a mile away, to the fan boiler house.

When it was decided to electrify this fan, an investigation showed that only one of the two engine cylinders was required to carry the load. Thereupon one cylinder was disconnected and an alternating-current induction motor set up on the old foundation. A countershaft was then installed and everything was made ready to change from the giant oversized steam engine which had driven the fan for years. On a Fourth of July morning this work was started and completed in 12 hours, not a single moment of production being lost by the mine. The motor is a 75-hp. 2,200-volt three-phase, 60-cycle unit. Fig. 11 shows the location of the old fan engine (dotted) and the layout of the present drive.

Some idea of the extent to which electrification has been carried can be gained from what has been done at the Williamstown operation, near the town of Williamstown, in the Lykens district.

This operation consists of three parts, one including the breaker, another the Big Lick operations and the other the territory at Nos. 1 and 2 shafts in Bear Valley. Exclusive of many direct-current machines such as locomotives, etc., the total alternating-current connected load amounts to 11,313 hp. The distribution of this equipment is as shown in Table III and Fig. 12.

**Table III—Distribution of Alternating-Current Connected Load**

| Hoists | Pumps | Fans | Converting Units | Compressors | Misc. | Total | No. of Machines |
|---|---|---|---|---|---|---|---|
| | | | AT BIG LICK | | | | |
| 1,360 | 32.5 | 82 | 275 | 485 | ..... | 2,234.5 | 13 |
| | | | AT BREAKER | | | | |
| | 207.5 | .... | .... | ..... | 405.5 | 613.0 | 9 |
| | | | AT BEAR VALLEY | | | | |
| 1,240 | 4,842.5 | 225 | 870 | 1,288.1 | | 84,65.6 | 29 |
| 2,600 | 5,082.5 | 307 | 1,145 | 1,773.1 | 405.5 | 11,313 | 51 Totals |

This colliery has what is perhaps the longest outside electric locomotive haulage system in the coal fields. From the Big Lick territory coal is hauled about 2 miles along the side of a mountain to the breaker. Extending in the other direction to the No. 1 and 2 shafts territory is another long outside haulage track which extends from the breaker through a 4,000-ft. tunnel to the other side of the mountain and then about a mile to No. 1 shaft.

Incidentally, this tunnel is one of the finest in the anthracite field. It runs through the mountain from the breaker to No. 2 shaft. The grade is slightly in favor of the loaded cars. The haulway is as straight as an arrow. Very little timber is used to support the roof in the tunnel because it was driven with hand tools at a time when heavy explosive charges, which ordinarily shatter the rock, were not used. The tunnel

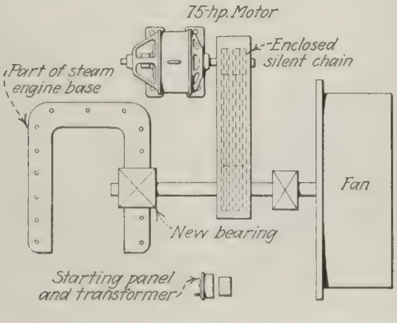


**Fig. 9—Automatic Control Replaces Steam Drive**

Not only was the inefficient steam engine supplanted by an electric motor here but an attendant was eliminated also. The fan is now driven through a silent chain and the motor is automatically controlled.

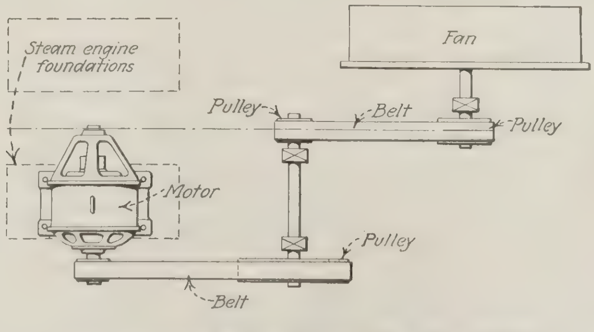


**Fig. 11—How a Fan Drive Was Remodeled**

This new arrangement was effected in 12 hours on a holiday, hence no operating time was lost by the mine. The fan house is bigger than now necessary but large savings are made as a result of this quick change.

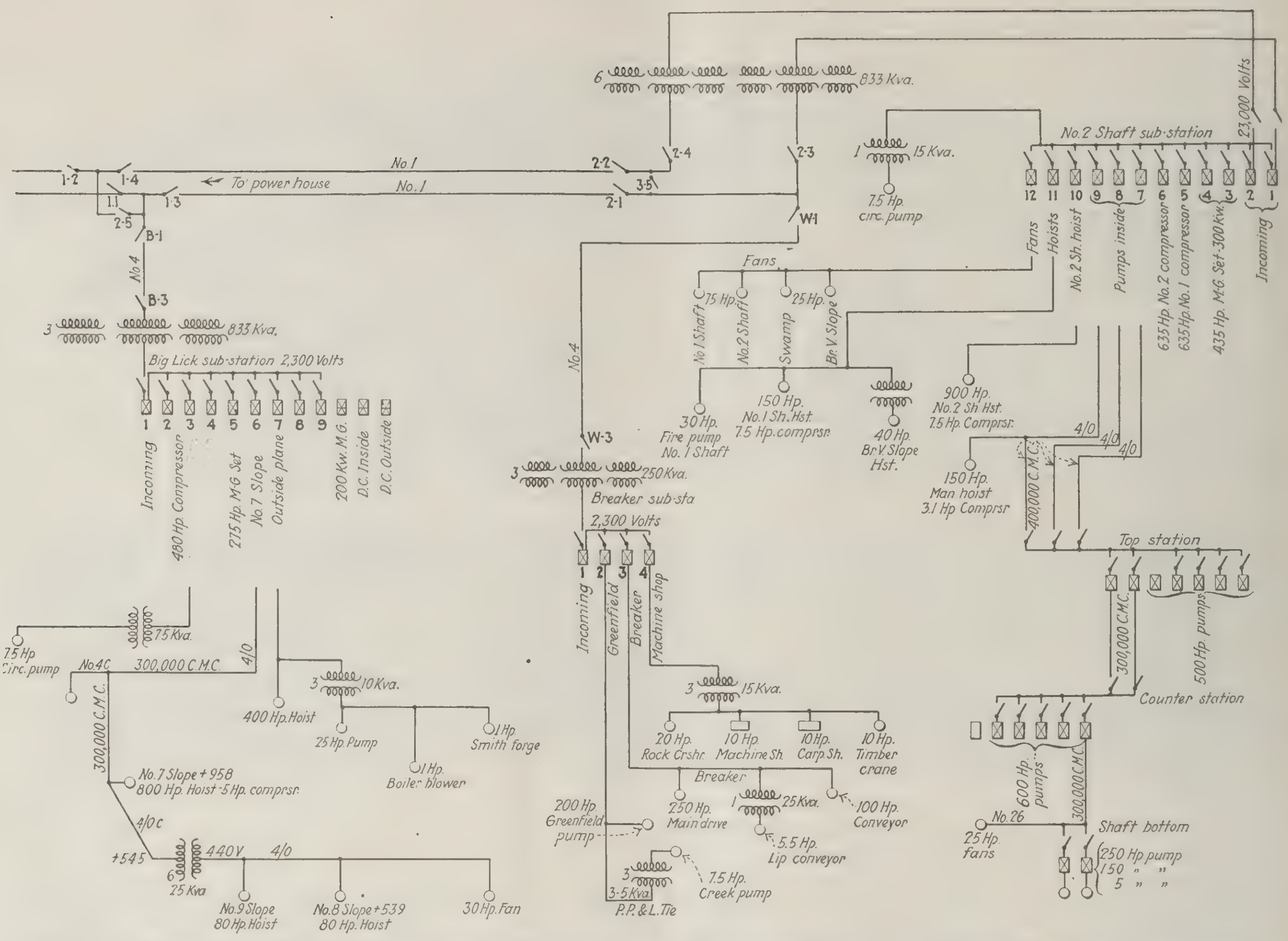


**Fig. 12—Where in the Whole Mining Field Is There a Larger Motor Load Than Here? This Mine Has a Connected Load of Alternating-Current Motors Greater Than 11,000 Hp.**

Each of the main divisions of the Williamstown Colliery is supplied with 22,000-volt electrical energy generated at the Lykens pulverized-fuel plant. The large pumping load makes possible a good all-day load factor. Most of this colliery is now electrically operated.

was started in the year 1860. It is said that many of the workmen employed on the job at that time dropped their tools and plied their trade with General Grant.

Before the coal is delivered to the locomotives at Big Lick it is raised on an outside plane by a 400-hp. electric hoist. At this same section is an 800-hp. electric hoist and a 480-hp. compressor motor, besides other important machines, as shown in Fig. 12.

All the machinery in and around the Williamstown breaker is electrically operated except an outside plane and slush pump. When the change was made from steam to electric drive at the breaker one 250-hp. three-phase 60-cycle slipring induction motor replaced the old steam engine that formerly drove the breaker machinery.

The most interesting part of the property, however, is at the No. 2 shaft, where there is an eight-compartment shaft which no doubt is the only one in existence. Four hoisting engines are used. Steam-driven hoisting engines formerly stood in the four different hoisting positions around the headframe. Four compartments were formerly used for hoisting coal and four for raising water by means of buckets. The shaft is 1,650 ft. deep.

At present this shaft is in a state of change. One steam hoist operates to the bottom level and an electric hoist works to the counter level. Water is now raised by means of pumps. An unusually large compressed-air line runs down the shaft.

The electric hoist is shown in Fig. 14. It has a 14-ft. drum and is driven by a 900-hp. induction motor at a rope speed of 1,500 ft. per minute. This hoist drum is the largest-diameter unit of its kind in the anthracite region.

The compressors supplying the high-pressure air are two 3,300-cu.ft. units which discharge into two 5x18-ft. receivers. The main air lines entering the mine consist of 400 ft. of 14-in. and 1,600 ft. of 12-in. pipe, a large receiver system in themselves.

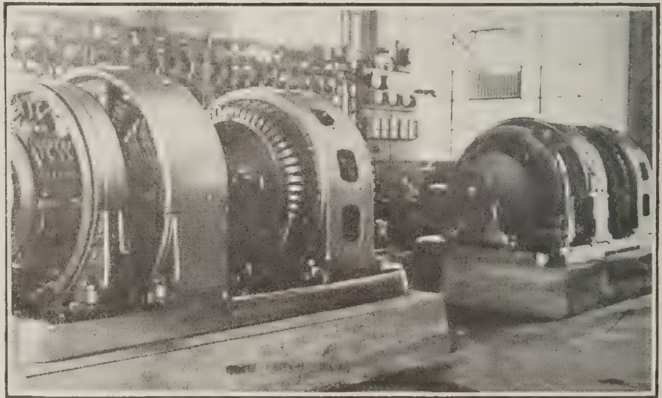


**Fig. 13—Large Motor-Generator Sets Help Maintain Good Power Factor Conditions**

These units serve the long haulage system at No. 2 shaft, near Williamstown, Pa. In the same building are two synchronous motors driving air compressors. Such apparatus prevents bad power factor loads.

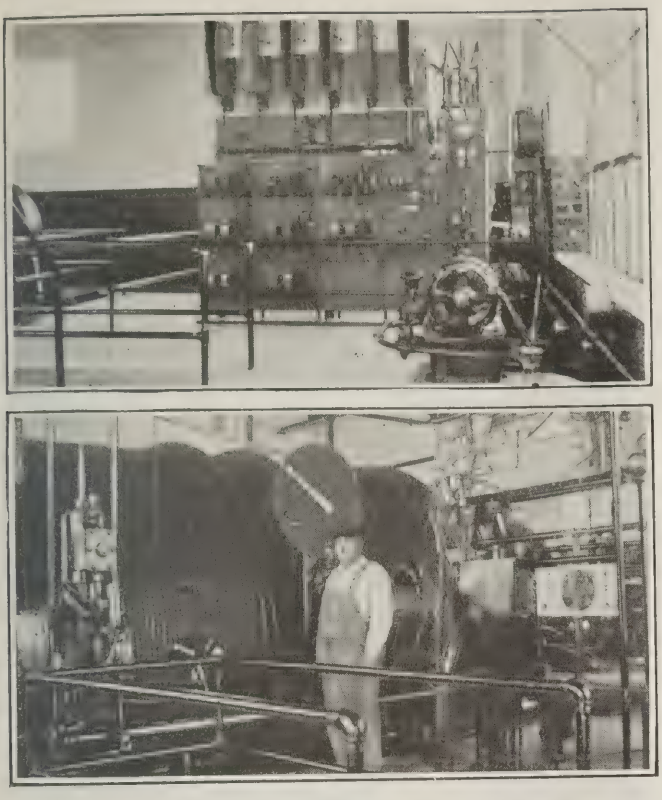


Fig. 14—Giant Hoist Which Operates Two Compartments of an 8-Section Shaft

The picture shown below illustrates the 14-ft. drum hoist and its protective equipment. Above is the 2,200-volt electric control panel and compressed air unit which operates the brakes.

The pumping equipment inside the mines at No. 2 shaft constitutes the largest group of pump units draining any one mine in the coal region. The shaft is so deep that it was considered advisable to relay the water out of the mines. Several ingenious schemes have been used to keep the cost of pumping as low as possible. All the pumps are equipped with diffusion vanes so as to cause them to operate at the highest possible efficiencies; the sumps have been arranged to permit much of the silt in the water to settle before it is pumped; no water is allowed to flow needlessly to a low level and then be pumped, and the water is raised no higher than necessary to cause it to flow out of the mines.

Two main pumps are located at the shaft bottom. These consist of a 250-hp. and a 150-hp. unit which are primed by a 5-hp. vacuum pump. At the counter level four large 600-hp. pumps raise the water collected at this level and that pumped from the shaft bottom to the so-called top station. From the top station the water is again raised by four eight-stage centrifugal pumps which lift the water to the top of the shaft, which is about 80 ft. above the tunnel level. Part of the water flows to the Williamstown breaker through the tunnel and the remainder into Bear Valley.

These are merely some of the means by which this company has been effecting savings and modernizing its properties. Quietly but rapidly it has been blazing the trail toward better mining methods. Although the company has accomplished a great deal in this direction it has completed only a small part of its program and much yet remains to be done.

# Pumping Mine Water Promptly Reduces Corrosion of Metals

### By Joseph A. Shaw*

Within recent months two scientific papers have emphasized the part played by oxygen in the acid-corrosion of metals, indicating that prompt pumping of mine water reduces corrosion of metals exposed to this water. Whitman and Russell[1] found that mild steel was corroded in an oxygen-saturated dilute sulphuric acid solution more than eleven times as fast as in the absence of oxygen; and copper, tin and nickel were corroded in an enormously higher ratio. Hall and Teague[2] obtained results on mine water that in general are in complete accord with those of Whitman and Russell on pure sulphuric acid.

Hall and Teague find that ferric salts act in much the same manner as free oxygen, at least they increase corrosion materially.[3] To quote from page 9, "In acid mine waters, on the other hand the rate of depolarization is no longer dependent solely upon the concentration of dissolved oxygen; in most waters of this type, in fact, the concentration of ferric iron is the dominant element in the oxidation at metallic surfaces, and the rate of corrosion becomes a direct function of such concentration." And on page 57 in speaking of tin, Hall and Teague say that as in the case of copper, increasing the acidity has little effect so long as the oxygen concentration is not increased materially, but that when it is increased by ferric iron, the rate of corrosion is enormously increased.

In other words, as Dr. Hall has expressed it, a container full of mine water is a storage battery which becomes charged by remaining in contact with the air instead of having to be put in electrical contact with a generator. When a piece of metal is placed in oxidized mine water, differences of potential are set up and the storage battery discharges with disastrous effects to the metal. These effects are similar to the action on the anode metal of an electro plating cell, though in this case the conditions are not right for the deposition of the metal as such at the opposite electrode.

The longer the mine water is exposed to the air the higher becomes the concentration of these oxidized iron salts and the higher becomes its corroding potential, for, of course, it is the concentration of oxidized iron salts rather than the total quantity present that affects the corrosion rate.

Therefore, any system of handling mine water as quickly as possible after it gets into the mine should be subject to smaller corrosion losses than a system that allows the water to collect and pumps it out only at such times as are absolutely necessary for the working of the mine.

It is realized that in many instances engineering objections will necessarily overrule the adoption of any change in the pumping system. But it is also believed that in many instances a little consideration of this matter will save considerable annoyance and expense from corrosion.

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*The Koppers Co., Laboratories, Mellon Institute, Pittsburgh, Pa. Pennsylvania.

[1] "The Acid Corrosion of Metals," *Ind. and Engr. Chem.*, Vol. 17, p. 348.

[2] "The Effect of Acidity and Oxidation Capacity on Corrosion of Metals and Alloys in Acid Mine Water." Bulletin 15, Coal Mining Investigation, Carnegie Institute of Technology.

[3] High chrome steels are an exception to this well nigh general weakness to an oxidizing attack, but their cost, of course, limits their usefulness.

# Semi-Portable Dump Solves Refuse Disposal Problem

### Electrically-Operated Device for Handling Rock Can Be Slid Along Track, thus Making Side Discharge of Cars Possible

**By J. H. Edwards**
Associate Editor of *Coal Age*,
Huntington, W. Va.

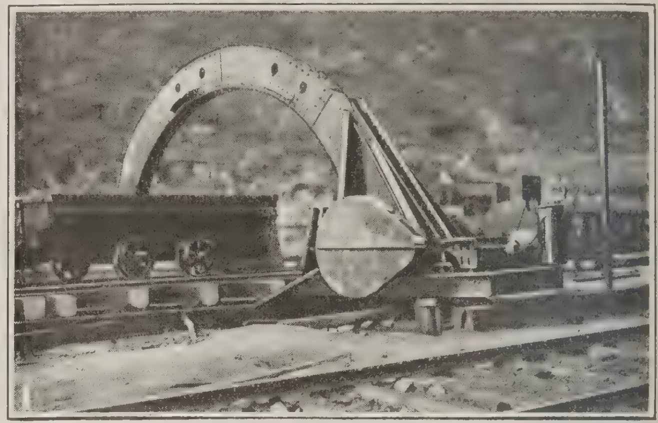
Dumping slate or rock from the end of a trestle out of solid-end cars is more difficult than if the cars were of the swing- or lift-end-gate type. Those drift and slope mines which use rotary dumps are confronted particularly with this difficulty. However, the dumping from the end of a trestle with any type of car in most cases is a tedious method. When refuse of slate and rock is to be used for grading and extending the yard in a direction parallel to the existing tracks, then it has been the usual practice, regardless of the type of mine car, to unload the refuse by hand and shovel. This laborious method always worries the progressive mine foremen or superintendent who is trying to reduce his mining cost.

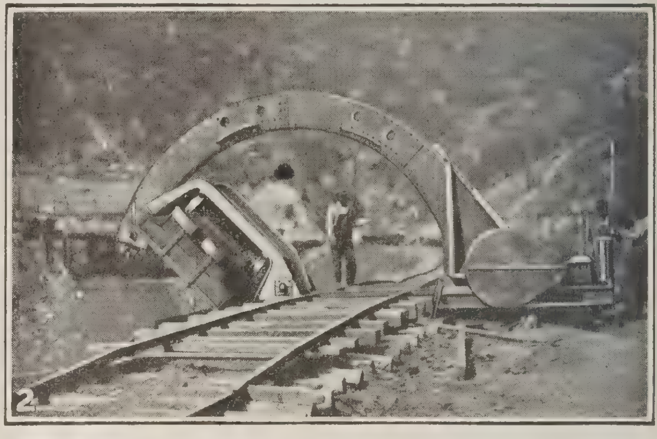
H. H. Braden, mine superintendent of the Blue Diamond Coal Co., of Blue Diamond, Ky., was bothered by his dumping problem but now he feels that it is well solved. This was accomplished by the designing and buildinig of the semi-portable side dump shown in the accompanying illustrations. Two of these dumps, the first of their kind ever built, have been in use for about three months at Blue Diamond mine.

Referring to the accompanying illustration (2), it will be noted that the machine proper is essentially a motor-driven rotary dump with the pivot somewhat above and to one side of the rail. The dump is semi-portable and simply sits on top of the track, the car platform being but a few inches above the track rails. The two sections of the track which form the approaches are entirely separate from the machine. The ties of these sections are notched on the bottom side so as to hold the approach rails in line with the track. Whenever it becomes necessary to move the dump, the approaches and the machine are slid along on top of the rail.

A 6½-hp. (intermittent rating), compound-wound, interpole motor connected to the mine trolley furnishes power to operate the dump. The machine is equipped with a drum controller and a hand brake. The free end of the dumping platform is connected to an endless roller chain which operates through the arc of the curved boom, the idler sprocket being mounted in the extreme end. From the illustration (2) it might be guessed that the controller end of the dump would have to be heavily counterweighted but this is not true, for the fulcrum is at the track rail near the platform pivot, and, moreover, the greater portion of the load is out of the car before it passes beyond the vertical.

The old and the new methods are shown in the illustration (3). On the end of the trestle in the background can be seen the overturning dump formerly used. This dump required considerable man power, which item together with the time taken to push each car out on the trestle and back again made the dumping a slow and costly process. In addition to these disadvantages, the old method had that of depositing the refuse in a line perpendicular, rather than parallel, to the mine yard. In the foreground can be seen the refuse that has been dumped by the new machine. Metal-covered skids are used to help carry the material, thus prolonging the dumping per setting of the machine.





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**Semi-Portable Dump in Operation**

(1) The car goes on the dumping platform to be overturned sideways. When the refuse pile is built up as far as possible at this point, the dumping machine with its approaches will be skidded a short distance on top of the track to a new position. (2) The car is tipped to the extreme position. The wooden ties of the dump approaches are notched on the bottom so as to hold the sections in line with the track. The fact that the dump is of the cross-over type simplifies the handling of cars. (3) In the background is the trestle and overturning dump formerly used. Here the refuse is deposited in a line perpendicular to the main track rather than parallel as is desired when building yards or when the dumping space is limited by lack of depth. Although the car being dumped in the foreground has not reached the vertical, a large portion of its load has been discharged.

This dump is of the cross-over type, which is one of its distinct advantages. The cars of slate are switched onto the dump siding as they are brought-out of the mine. Then, after being run over the dump, the empties are in line ready for the return trip. Since it has been put into use the dump pictured has been handling up to 100 cars of slate per day.

# In Ohio Sixty-Nine Industries Pay Higher Compensation Rates than Coal Mining

## Yet Mining in Ohio Is More Hazardous than the Average for the Whole Nation—Window Cleaning Rate Eight Times that of Mining—Wrecking and Painting Bridges Five Times

**By R. Dawson Hall**
Engineering Editor, *Coal Age*

IS MINING the most hazardous industry? That appears to be a belief common among the general public, but the compensation figures do not seem to substantiate this notion. An analysis of the figures for Ohio, has been compiled from "The Ohio State Insurance Manual" for July 1, 1924, with the figures corrected according to the 1925 schedule, excluding all occupations that were omitted in that later table. In this book can be found 723 classifications. In 69 cases the scheduled rates are higher than for coal mining taken as a whole but omitting the groups engaged in culm, slack and coal-refuse washing, strip-pit mining, taking care of idle mines and acting as coal-mine committeemen. All of these are occupations rated less hazardous than coal mining.

Window cleaning has a rate eight times as high as coal mining and wrecking and painting steel structures and bridges over five times as high. The construction industry has a large number of counts higher than coal mining and, it should be added, a few lower. In the table none but the rates given for coal mining have been considered. In fact disregarding the five coal-mine classifications there are 649 occupations less risky than the mining of coal, none of which has been tabulated. They have been omitted from this article solely for lack of space. Perhaps attention should be drawn to the fact that shaft sinking (56), a common operation in the starting of coal mines, is more hazardous than coal mining and is classified here perhaps inadvisedly as an industry not incident to the mining of coal. The workers often do not belong to the United Mine Workers of America.

If coal mining were not treated as a composite hazard but as one broken up into several distinct hazards, many of these risks would exceed the risk of coal mining taken as a whole, but many would be far lower.

### Disease Hazard Is Low

It should be remarked that the disease hazard, which has recently been added and which has been taken in this computation without change from the 1924 manual, is not as yet scientifically computed on the five-year experience. It is added to the accident rate to make the total rate. In all cases, however, it is so small that, though it does put some of the hazards out of the order they would otherwise occupy, it does not raise any of them to a level above that of coal mining in general. Thus if they were omitted in the calculation they would not reduce the number of hazards which are estimated as greater than coal mining.

It will be noted that the lowest figure set by the Industrial Commission of Ohio—namely, one mill per $100 of payroll—has been apportioned to coal mining. The rate for the lead-using industries, including painting, is 400 times as large, and for the rubber industry 100 times as large, which shows how the commission rates the disease hazard in the State of Ohio. Whatever the disease rate may be in Great Britain and in Europe in general, in the United States it is so low as to be practically negligible.

It may be said that mining in Ohio is perhaps a relatively safe occupation as compared with other states. But that is not so. The number of fatalities is early obtained but we are longer in getting the number of employees. It is therefore necessary to go back to 1923. The record shows that in that year the number of fatalities per one thousand 2,000-hour workers was 3.96 whereas for the Pennsylvania anthracite field it was only 3.01 and for bituminous mines in general 3.84.

### Dangers in Ohio Above Average

The fatality rate in Ohio from 1919 to 1923 inclusive per one thousand 2,000-hour workers was 3.99, for the anthracite region 3.27 and for the whole of the United States 3.53. Thus it is obvious that the dangers of coal mining in Ohio are certainly not the lowest in the country and that Ohio therefore is not a state to be chosen by a propagandist who might try to prove coal mining less dangerous than some say it is. The Ohio facts speak for themselves. Mining is more hazardous there than in the United States in general, yet among industries it is rated only seventieth in point of risk to the workers.

It must be remembered that the compensation rates are not so much indexes of the operating hazards as of the amounts paid as a result of the hazards. Were the sums paid for injury or death proportional in every case to the wage earned before death by the injured or accidently killed, the compensation rate would be almost a perfect indication of the hazard, but as the law of Ohio in 1921 stood, and probably still stands, the payment at death is 66⅔ per cent of the weekly wage and not over $15 per week. Thus the comparison of compensation rates is only entirely reliable when the wage is below $15 per week or is the same as the wage in the industry with which it is compared.

Furthermore, the law requires that the compensation for death be paid for eight years but that the aggregate shall not be less than $2,000 nor more than $5,000. As $15 per week is the amount paid when the wage is $22.50 per week it is evident that quite a few of the dependents of higher wage men do not get two-thirds of the salary of the deceased, and as $6,240, which is $15 per week for eight years, is more than $5,000 it is clear that the dependents of the day worker are likely to get their $15 for less than eight years. This will lower the compensation rate for a high-wage industry. However, with these considerations duly digested and properly allowed the tabular information is of great interest.

## Workmen's Compensation Rates of Industries More Hazardous than Coal Mining in Ohio, Effective July 1

| Description of Industry | Accident Rate | Disease Rate | Total Rate |
|---|---|---|---|
| | Per $100 of Payroll | | |
| 1—Window cleaning | 25.00 | 0.002 | 25.002 |
| 2—Wreckers (not marine) | 17.00 | 0.002 | 17.002 |
| 3—Painting (steel structures and bridges) | 16.50 | 0.40 | 16.90 |
| 4—Powder M'f'rs (gun or blasting) | 15.00 | 0.002 | 15.002 |
| 5—Blasting (Payroll to include the whole compensation of all employees engaged in the storage, handling or use of explosives and all men employed wholly or in part in work preparatory to blasting, such as loading, capping, connecting and firing | 15.00 | 0.002 | 15.002 |
| 6—Aeroplane operation (demonstrating, testing, instructing, public exhibition, trick or stunt flying) | 15.00 | 0.002 | 15.002 |
| 7—Draying and hauling of heavy machinery, etc. | 13.00 | 0.002 | 13.002 |
| 8—Dynamite magazine helpers | 10.00 | 0.002 | 10.002 |
| 9—Erecting on corrugated iron buildings or covering buildings with corrugated iron (building already constructed, no structural steel work) | 10.00 | 0.001 | 10.001 |
| 10—Caisson work for building and bridge foundations (payroll to include all employees working under air pressure only) | 10.00 | 0.001 | 10.001 |
| 11—Tunneling, including all work to completion | 10.00 | 0.001 | 10.001 |
| 12—Bridge building (metal) | 9.00 | 0.001 | 9.001 |
| 13—Pile drivers | 9.00 | 0.001 | 9.001 |
| 14—Bridge building (not otherwise classified) | 8.00 | 0.001 | 8.001 |
| 15—Scrap-iron and junk dealers, away from shop | 8.00 | 0.001 | 8.001 |
| 16—Building movers (wooden) | 7.50 | 0.001 | 7.501 |
| 17—Torpedo manufacturers | 7.00 | 0.002 | 7.002 |
| 18—Riggers (not ship or boat) | 6.50 | 0.001 | 6.501 |
| 19—Subway construction | 6.50 | 0.001 | 6.501 |
| 20—Trees, pruning, spraying, repairing, trimming and fumigating | 6.30 | 0.001 | 6.301 |
| 21—Conveyors and hoisting apparatus (coal and ore, installation of, in connection with docks) | 6.00 | 0.001 | 6.001 |
| 22—Iron work (structural-erecting—building construction) | 6.00 | 0.001 | 6.001 |
| 23—Building movers, other than wooden (including shoring of buildings) | 6.00 | 0.001 | 6.001 |
| 24—Sewer building (depending on depth, highest rate) | 6.00 | 0.001 | 6.001 |
| 25—Metal-stamping works | 5.50 | 0.02 | 5.520 |
| 26—Saw mills including all employees whose duties require their presence in or about the mill and the hauling of cut lumber | 5.50 | 0.02 | 5.520 |
| 27—Sandstone quarries (for building, sawed or grindstones) | 5.50 | 0.001 | 5.501 |
| 28—Tuck pointers (cleaning exterior of buildings) | 5.50 | 0.001 | 5.501 |
| 29—Threshing machines, shellers and haybalers, operation of | 5.40 | 0.001 | 5.401 |
| 30—Cornices and sky lights (repairing and erecting). | 5.25 | 0.001 | 5.251 |
| 31—Logging and lumbering operations with transportation of logs to mill | 5.00 | 0.20 | 5.020 |
| 32—Scrap-iron dealers | 5.00 | 0.002 | 5.002 |
| 33—Lime quarries with or without blasting (no crusher) | 5.00 | 0.001 | 5.001 |
| 34—Smokestack and chimney erecting (metal) | 5.00 | 0.001 | 5.001 |
| 35—Vaults, fire and burglar proof (construction and installation) | 4.50 | 0.001 | 4.501 |
| 36—Autogenous welding, oxyacetylene | 4.50 | 0.001 | 4.501 |
| 37—Railroad construction (grade crossing work) involving all work incidental thereto (excluding iron and steel erection or the laying of new sewers) | 4.50 | 0.001 | 4.501 |
| 38—Electric light and power companies, construction of transmission lines not intended for local distribution | 4.50 | 0.001 | 4.501 |
| 39—Oxygen and hydrogen mfrs. (electrolytic processes) | 4.25 | 0.03 | 4.280 |
| 40—Bridge works | 4.00 | 0.02 | 4.020 |
| 41—Stone crushers (not limestone), including quarrying with or without blasting (not otherwise classified) | 4.00 | 0.001 | 4.001 |
| 42—Masonry work, building chimneys only (no structural iron or steel) | 4.00 | 0.001 | 4.001 |
| 43—Garbage works, reduction and incineration of garbage or offal | 4.00 | 0.001 | 4.001 |
| 44—Dredging by floating dredges | 3.75 | 0.001 | 3.751 |
| 45—Boat builders, iron, concrete, steel or wood, not otherwise classified, where staging or scaffold is used, including shop and yard work | 3.75 | 0.001 | 3.751 |
| 46—Railroad signal, erecting or installation (not including operation of railroads) | 3.60 | 0.001 | 3.601 |
| 47—Railroad construction, electric, horse or cable or installation of electric equipment or pole lines connected therewith, including culverts, not more than 10 ft. span, urban lines entirely within the corporate limits of one city (no tunneling or bridge building) | 3.60 | 0.001 | 3.601 |
| 48—Tar manufacturers | 3.50 | 0.030 | 3.530 |
| 49—Wood-tank builders (shop only) | 3.50 | 0.020 | 3.520 |
| 50—Stone crushers (no quarrying) | 3.50 | 0.001 | 3.501 |
| 51—Iron work, erecting balconies, fire escapes, railways, staircases, coal chutes, iron shutters (outside of building) | 3.50 | 0.001 | 3.501 |
| 52—Concrete bridge work, building, piers, abutments and foundations (no caisson work) | 3.50 | 0.001 | 3.501 |
| 53—Concrete work—Buildings, including foundation —Reinforced or concrete construction with self-bearing floors or other horizontal floors or surfaces or parts constructed by means of reinforced concrete. Payroll to include those engaged in making, setting up and taking down frames, scaffolds and falsework | 3.50 | 0.001 | 3.501 |
| 54—Stone crushers | 3.50 | 0.001 | 3.501 |
| 55—Roofers (not otherwise classified) | 3.50 | 0.001 | 3.501 |
| 56—Shaft sinking (must include all wages expended in the sinking of shafts and installation of lining, footways, machinery or hoist equipment therein) | 3.50 | 0.001 | 3.501 |
| 57—Railroad hazard (operating contractor's risk) | 3.50 | 0.001 | 3.501 |
| 58—Railroad operating, freight only | 3.50 | 0.001 | 3.501 |
| 59—Sign painting or lettering (over 20 ft. from ground) | 3.50 | 0.001 | 3.501 |
| 60—Badge (metal) manufacturers | 3.30 | 0.020 | 3.320 |
| 61—Telegraph and telephone lines (construction only) | 3.30 | 0.001 | 3.301 |
| 62—Quarries (not lime or cement) with or without blasting (not otherwise classified) | 3.25 | 0.001 | 3.251 |
| 63—Lime quarries, with or without blasting, including stone crushing | 3.25 | 0.001 | 3.251 |
| 64—Quarries, with or without blasting, bluestone, graphite or marble for monument or building purposes (no quarrying for dam or bridge work) | 3.25 | 0.001 | 3.251 |
| 65—Sand and gravel diggers including washing and screening operations (no stone crushing or canal, sewer or cellar excavation or grading) | 3.25 | 0.001 | 3.251 |
| 66—Tank or gasholder erection (metal) | 3.25 | 0.001 | 3.251 |
| 67—Electric light and power companies (operation, maintenance, extension of lines and making service connections) | 3.25 | 0.001 | 3.251 |
| 68—Telegraph and telephone companies (operation, maintenance, extension of lines and making service connections) | 3.25 | 0.001 | 3.251 |
| 69—Refrigerator cars (refrigeration and caring for freight in cars during transit, including loading and unloading) | 3.20 | 0.001 | 3.201 |
| 70—Coal mining | 3.10 | 0.001 | 3.101 |
| Culm, slack or coal-refuse washing | 2.50 | 0.001 | 2.501 |
| Care of idle mine | 1.25 | 0.001 | 1.251 |
| Coal mining (surface) | 1.00 | 0.001 | 1.001 |
| Coal-mine committeemen | 0.60 | 0.002 | 0.602 |

### "Thar's Coal in Them Air Hills"

Two of the Blue Diamond Coal Co. operations at Blue Diamond, Ky., viewed from under the cables of an aerial tramway which conveys the picking-table refuse to a dump on the other side of the mountain. At the left is the new side of the Blue Diamond mine. The scraper-type retarding conveyor from this mine together with that from the old mine discharge into a common tipple. At the right of the picture is the Sapphire mine, of the Blue Diamond company. This formerly was a Jewett, Bigelow & Brooks mine and was bought from the receivers last winter.

# Coal May Capture Alcohol Market from Wood

### German Water-Gas Process Produces Methanol With Such Success That This Wood Alcohol Substitute Interests U. S.

COAL MAY some day win the alcohol market now held by wood. Methanol, a product distinctly competitive to wood alcohol, is now being made from coal by the water-gas method with such success by the Germans that there is some perturbation felt among wood distillers of this country. By the German process, methanol or methyl alcohol ($CH_3OH$) is produced and sold to meet the demands of industry now filled by wood alcohol, which is methyl alcohol with certain impurities. The importation of this coal synthetic methanol by the United States increased from 40 gal., or almost nothing, in January of this year, to 70,000 gal. in March.

Before the war Germany purchased about two-thirds of the total exports of wood alcohol from the United States. Today we are rapidly losing our foreign and even our domestic market. As it is difficult to ascertain the German costs of production and even to determine the American costs, because the distillation of wood also produces calcium acetate, tar and charcoal, it will be no easy matter for the Tariff Commission acting with the President to adjust the tariff on wood alcohol above the present rate which is 12c. per gallon.

American distillers of wood alcohol are going into battle with the German producers of this synthetic methanol, Dr. Charles H. Herty, president of the Synthetic Organic Chemical Manufacturers' Association, said June 18 at the semi-annual meeting of the association at Bellport, Long Island. He said:

"We seem to have recovered somewhat from the first demoralizing shock of imports of large quantities of synthetic methanol. The American industry is now stripping itself for the fight. It is good to know that Government agencies which may be able to aid in the protection of the wood alcohol industry are investigating the whole situation carefully, and we may confidently hope that all possible aid will be given.

"The Synthetic Organic Chemical Manufacturers' Association has a very direct interest in this situation. Methyl alcohol is used in large quantities by our industry, and whatever may be the outcome of a future contest between domestic manufacturers of methyl alcohol by either destructive distillation or synthetic processes, nevertheless the synthetic process has not yet begun in this country and we must use our efforts to see that we are not dependent upon a foreign source of supply for this important material.

"So far as I can see, the very serious danger which at one time threatened our industry from loans made by bankers here to the German chemical industry has passed. The present financial shake-up in Germany, due to the troubles of the Stinnes and possibly other groups is making our bankers wary of further industrial loans to Germany."

Two German chemists, Alwin Mittasch and Christian Schneider, residing at Ludwigshafen-on-the Rhine, Germany, on Oct. 17, 1916, patented a method of treatment of carbon monoxide and hydrogen—which gases, by the way, are the main constituents of water gas. The two gases either alone or in admixture with other gases are passed over a heated catalytic agent under a pressure exceeding that of five atmospheres.

According to the nature of the catalytic agent employed and the conditions of working, different compounds or mixtures are obtained, for instance, liquid hydrocarbons, either saturated or unsaturated, and alcohols, aldehydes, ketones and acids. In order to obtain larger quantities of liquid compounds, it is often advantageous to employ gas mixtures in which the percentage of hydrogen contained is comparatively small. As instances of catalytic agents which can be employed may be mentioned cerium, chromium, cobalt, manganese, molybdenum, osmium, palladium, titanium, zinc, and also oxides or other compounds of these metals, and, if desired, mixtures of two or more of these catalytic agents can be employed. It is often advantageous to add a basic compound.

In one test pure asbestos was impregnated with pure cobalt oxide or osmium oxide and placed with a little caustic soda in a coppered iron vessel with steel jacket. A mixture containing one part of pure hydrogen and two or more parts of carbon monoxide were passed over the catalyst under a pressure of 100 atmospheres and temperatures from 300 to 400 deg. C. During the reaction some carbon was deposited, and some water and carbon dioxide produced, but methane and higher hydrocarbons as well as oxygen derivatives of the hydrocarbons were formed. These could be at once condensed or absorbed in a cold receiver. Generally an aqueous solution of aldehydes ($C_NH_{N+1}COH$) and the like was obtained in addition to a light, oily liquid consisting chiefly of saturated and unsaturated hydrocarbons, which boil up to 250 deg. C. or even higher.

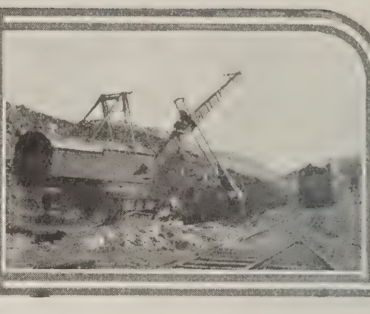
It is preferable practice to maintain the receiver under the same pressure as the reaction space and effect the condensation by cooling. If desired, a fractionated cooling can be effected either with or without releasing the pressure. In a similar way carbon dioxide can be used instead of, or in addition to, carbon monoxide, more oxygen-containing compounds and less hydrocarbons being then obtained.

## RESULTS OF OTHER TESTS

In other tests a suitable carrier, such as calcined magnesia, pumice or diatomite, was impregnated with potassium-carbonate solution. The mass was then dried and introduced into a concentrated solution of zinc nitrate, the liquid was poured off and the contact mass was then dried and heated in a suitable apparatus and placed in a vessel through which was passed a gas mixture at a pressure of 120 atmospheres and a temperature of from 360 to 420 deg. C. This gas mixture contained 62 per cent of carbon monoxide, 28 per cent of hydrogen, 4 per cent of carbon dioxide, 2 per cent of methane and 4 per cent of nitrogen. The products consisted chiefly of higher hydrocarbons and derivatives therefrom.

In this case carbon was not deposited, or, at the most, only to a slight extent. The greater part of the products capable of liquefaction or absorption could be separated at ordinary temperatures. The remaining gas generally contained olefines, such as ethylene and propylene and, further, paraffins such as methane and ethane. Analysis of the products obtained showed that the oily layer consisted chiefly of hydrocarbons of boiling points from 20 deg. to well above 200 deg. C. For instance, about two-thirds are saturated and the rest olefinic, but this proportion may vary considerably.

# News Of the Industry



## Lewis Spurns Olive Branch Offered By Anthracite Operators; No Move Yet Either by Washington or Harrisburg

No relief for the anthracite impasse was in sight early this week. Samuel D. Warriner, chairman of the Anthracite Operators' Conference, last week sent a conciliatory letter to President Lewis of the miners suggesting a resumption of the negotiations broken off so abruptly by the miners at Atlantic City, Aug. 4, but on Aug. 9 Mr. Lewis made a reply characteristically positive, characteristically ironic and one that seemed to bear out the impression that the miners are determined there shall be a strike Sept. 1.

The miners' position is that the operators will not grant either an increase in wages or the check-off and therefore further negotiations of any sort are useless. They are proceeding with their plans for a suspension. No move has yet been made either by Washington or Harrisburg to indicate that the federal government or Governor Pinchot of Pennsylvania will try to take a hand. President Coolidge is reported to be disappointed at the failure of the two scale committees to resume negotiations and he may cut short his vacation because of it.

In the operators' effort to heal up the break at Atlantic City Mr. Warriner's letter to Mr. Lewis said:

"It is, of course, untrue that the operators' negotiating committee is under instructions to continue to refuse any concessions regardless of the logic or merit of any of the mine workers' wage demands. The operators' committee is no more bound by instructions than your committee is bound by the demands adopted by the Scranton convention.

"You have now taken the grave responsibility of abruptly terminating the negotiations because of our opposition to your demands as adopted by the Scranton convention. In short, you take the position that 'negotiation' means instant agreement with your demands.

"There is only one really important matter to which I must refer, and that is your statement that you possess knowledge of the anthracite operators' well known policy of keeping close to an arbitrator. I cannot believe you seriously make such an accusation. It condemns itself.

"On this false premise you attack not merely a suggestion applying to this case. You attack a principle that is universally approved by right-thinking men as the best means yet devised to arrive at justice between contending parties. The only alternative is industrial strife with its attendant waste and loss to the industry.

"In spite of the terms of your letter and the breaking off of negotiations, I am hopeful that means will be found to compose the differences between us and avoid a suspension of production. Every consideration demands that this be done."

Mr. Lewis' reply contained these phrases:

"I do not desire to quibble over the fine shades of meaning affecting words and involved phrases. It remains that your Atlantic City conferees informed the mine workers' representatives, including myself, that they would reject any demand that would disturb the factor of mine costs. In addition, they rejected the request for full recognition of the union for some other mysterious reason. Your letter confirms the position of your committee. Be it so. We do not have any inclination to further argue when judgment has been given. I will be glad to hear from you when you abandon this position.

"I note your reference to my previous comments upon arbitration. I can well understand you natural irritation in the premises. I referred, of course, to the arbitration proceedings of some years ago when the final decision of the arbitrator was changed between twilight and dawn.

"We really do not care to arbitrate. Thanks for the offer."

## Another Big Merger Of Non-Union Mines Is Under Discussion

**John Laing**
President of the Kanawha Coal Operators' Association

John Laing, president of the Kanawha Coal Operators Association, stated last week that there is on foot another of the many coal mine merger plans that have been discussed in southern West Virginia. He said there had been a meeting in New York July 30 at which was presented the possibility of consolidating a majority of the producers in the Kanawha, Williamson, Tug River, New River, Winding Gulf and Pocahontas fields of West Virginia and in the Big Sandy field of Kentucky and Tennessee. An attorney in New York, whose name was linked with the proposal, said the suggestion was still merely a suggestion and that a great many bridges still remained to be crossed.

The tentative plans, as outlined by Mr. Laing, are to raise a fund of $250,000,000 with the aid of strong New York and Philadelphia banking houses in order to pay the owners of the properties 25 per cent of the determined value. An additional $100,000,000 would be desired for working capital. Bonds to cover the remainder of the property value would be distributed among the present owners of the mines. A huge corporation would operate the merged mines, with a board of ten men three of whom would be bankers and seven coal men. It was currently reported among coal men interested that the bankers who have discussed the merger will agree to finance it only if a controlling tonnage in each field is brought in. A questionnaire is now circulating among mine owners to determine what definite interest there is in the proposal.

At a special meeting of the stockholders of the Glen Alden Coal Co. held in Scranton, Pa., Aug. 10 it was voted to cancel the company's sales contract with the Delaware, Lackawanna & Western Coal Sales Co., and to effect a stock transfer plan, whereby holders of the sales company securities will receive share for share in Glen Alden securities.

# Government Subsidy Defers Crisis Confronting British Coal Industry Is Belief of Washington Observers

### By Paul Wooton

Washington Correspondent of *Coal Age*

Granting of a government subsidy to the business on which the entire British industrial structure rests is regarded in Washington as a makeshift intended only to postpone a general strike until the country is in a better position to withstand such a shock. If the coal industry in Great Britain cannot stand alone what must be the state of many other activities in that country, it is asked.

It is generally recognized in this country that the mine workers in the United Kingdom are not receiving enough pay even when judged by European standards of living, but it is hard to understand how any part of a private concern's payroll can be saddled on the taxpayer without precipitating a political crisis. It is certain that were any additional funds raised here for such a purpose they would have to come out of the industry if forthcoming at all.

The British coal industry is in a position where it cannot pay profits to owners and wages at the present rate to the men. Some one has to get along with less. The government has not been strong enough to require either the miners or the operators to get along with less. It also has been unable to influence the low-cost producers to agree to contribute their surplus profits to a wage pool.

It is recognized that the conservative leaders in Great Britain know just how unsound is the settlement which they have effected. That they were forced to such an expedient to postpone the crisis is taken as evidence that British business is in worse straits than had been realized here. In this we have much concern. Our own prosperity is dependent to an extent on the prosperity of our best customer. There are in addition reasons of state and of sentiment why the people of this country want to see the British overcome their difficulties promptly.

#### Inopportune Time for Showdown

Those who follow British affairs closely point out that nearly any time other than the present would be better for the inevitable showdown which must come in Great Britain. The policy of the party in power has been to concentrate on efforts to stimulate trade rather than to consume all its energies in pursuing such a will o' the wisp as German indemnities. Their efforts, along with the bettering of world trade, have brought about an improvement in the British situation. The subsidy evidently was granted in the hope that the improvement would continue with sufficient rapidity to make the task easier some months hence.

Profits at British coal mines are peculiarly dependent on volume of output. The kingdom is more dependent on foreign trade than any other country. Most of its industries must be operated near capacity before satisfactory earnings are possible. If the buying power of the tropics, of Germany and of Russia should increase in marked fashion there would be a chance for some settlement of the coal controversy.

The chances, however, seem to be very much against a sufficient recovery of business to pull Great Britain out of its depression. The more general prediction is that there must be a general readjustment of British trade with much less reliance placed on coal. This change, however, must be spread over a long period. It involves the mechanization of the mines and the development of a superpower system. Most important of all is the working out of some plan that will induce the mine worker to do his best.

#### Reduced Wages Inevitable

The British coal industry is in no position now to await gradual improvement. Something has to be done promptly to reduce costs. Since labor represents three-fourths of all costs, a reduced wage offers the more immediate way of meeting the situation. The expectation here is that it will have to be resorted to sooner or later. This doubtless will mean a general strike and a finish fight with organized labor. British labor in all lines has adopted a policy of discouraging productivity on the part of the individual worker. Nothing less than the weakening of the unions can supplant this policy with one which encourages maximum individual productivity, many think.

Under the readjustment which is expected Great Britain will withdraw to a centain extent from the world coal trade and try to use larger quantities at home. No country, it is declared, has a better oportunity to utilize superpower to advantage. Plenty of condensing water is available for power plants in the coal fields. Electric power could be made available throughout the country at a cost which would give British manufacturers some advantage. Then by specializing in the manufacture of products which require large amounts of power and by concentrating in addition on the production of goods of high quality, British industry could be put on a basis which would employ the nation's resources, manpower and brains to greater advantage than at present. One effect on this country probably would be the export of more coal.

While this readjustment is being brought about it is believed that the British will be able to get along fairly well on the business that they will be able to do with the slowly recuperating world and their income from foreign investments. This later source of income is considerable.

## Bell Lost $10,932,000 In Five Years

John A. Bell, one of the largest coal operators in western Pennsylvania, whose affairs have been public concern for months through the failure of three banks with which he was connected, went into voluntary bankruptcy Aug. 7 in Pittsburgh, listing his assets at $1,628,535.73 and liabilities of $8,669,097.81.

The day before the bankruptcy petition was filed a committee of three, known as the John A. Bell Creditors' Committee, which had been working for months to conserve the assets of the coal man, filed a preliminary report on its work, showing that Bell had lost through various operations, nearly all coal, a total of $10,932,000 in five years. Included in these losses were $6,500,000, or his entire investment, in the Carnegie Coal Co.; $389,000 in the Tasa Coal Co., $300,000 in the Harmon Creek Coal Co. and $297,000 in the Salkeld Coal Co. A total of $400,000 was lost in minor corporations, including other coal companies.

The bankruptcy petition was filed hurriedly, to forestall an involuntary petition by creditors.

Bell, who was almost as well known as a banker, declared in his petition that his occupation was a coal operator. He cited that between 1915 and 1925 he contracted debts representing both cash borrowed and property purchased by him personally totaling $4,797,331, of which $1,277,323 is secured and $3,520,007 is unsecured.

All his assets, including obligations due him, personal property, his home—everything except $175 in clothing—have been turned over to his creditors.

## Winifrede Coal Co. Closes Cincinnati Office

A landmark of the Cincinnati coal trade passed July 30 when the Winifrede Coal Co., of which Frank B. Stewart is president, closed the office that has been maintained in the First National Bank Building and shipped all books of record to the mine office at Winifrede, W. Va. The company owns 15,000 acres of land in West Virginia, including five mines at Winifrede, about fifteen miles from Charleston, and one mine at Belmont, Ohio. These mines are capable of producing 600,000 tons of coal annually. Two years ago the company bought a $100,000 washer for the mines. It also owns a short railroad which carried the coal from the mines to the Kanawha River.

It has been months since a ton of coal has been mined at the big mine at Belmont, and since the first of the year the five mines at Winifrede have worked only in fits and starts.

The Pittsburgh Coal Co. has placed a contract for the construction of a new tipple at Montour Mine No. 9, near McDonald, Pa., which was destroyed recently by lightning. The loss was estimated at that time at $100,000. The contract has been given to a Bethlehem concern. There will be no hurry in its construction, as the mine is idle.

## Mine Accidents in June Caused 145 Deaths

Accidents at coal mines in the United States in June, 1925, resulted in 145 deaths among the employees, according to information received from state mine inspectors by the U. S. Bureau of Mines. The fatality rate, based on the month's production of 44,971,000 tons of coal, was 3.22 per million tons, as compared with 4.15 in the preceding month and 4.16 in June, 1924. Seventeen of the 145 fatalities were due to a mine explosion at Sturgis, Ky., on June 8. In June last year 14 lives were lost in an explosion at Wilkes-Barre, Pa.

Reports covering bituminous mines throughout the country showed 95 fatal accidents in June. As the output of bituminous coal in June was 37,167,000 tons, the fatality rate was 2.56 per million tons. The rate for June a year ago was 3.44 while the average rate for June over a 10-year period, 1915-1924, was 3.58, thus indicating a marked improvement in June of the present year. The reports for anthracite mines in Pennsylvania showed 50 fatalities in June, which, based on a production of 7,804,000 tons, represents a per-million-ton fatality rate of 6.41 as compared with 7.14 for June last year and 7.23 for the month of June during the ten years 1915-1924.

Accident records covering the first half of 1925 show a loss of 1,089 lives in the coal-mining industry, which is 239 less than during the first six months of 1924. The fatality rate for January-June, 1925, based on an output of 279,949,000 tons, was 3.89 per million tons, as compared with 4.73 for the corresponding period last year. The six-month rate for bituminous mines alone was 3.45 in 1925 and 4.56 in 1924, while for anthracite mines alone it was 6.19 as compared with 5.60. Production records show an output of 234,886,000 tons of bituminous coal and 45,063,000 tons of anthracite during the first half of the present year.

An examination of the causes of the 1.089 deaths in the coal industry in the first half of 1925 and a comparison thereof with the accident record for the corresponding period last year shows a reduction of nearly 50 per cent in the per-million-ton fatality rate from explosions of gas or coal dust and a small reduction in the death rate from falls of roof and coal. The rate for accidents due to haulage, explosives and electricity increased slightly. The comparative rates for the main causes of accidents were:

| | Jan.-June 1924 | Jan.-June 1925 |
|---|---|---|
| All causes | 4.736 | 3.889 |
| Falls of roof and coal | 1.858 | 1.711 |
| Haulage | .601 | .647 |
| Gas or dust explosions | 1.541 | .797 |
| Explosives | .153 | .179 |
| Electricity | .117 | .121 |

### Stored Anthracite

Here are a few tons of anthracite stove and nut stored near the mines by one of the large producers which will help keep the home fires burning this winter. This yard is about an eighth of a mile long and holds more coal now than perhaps ever before. No doubt the reason for this is the possibility of a strike in the anthracite region.

John G. Callahan, a former member of the Morrow-Callahan Coal Co., has been selected to succeed Louis Stone as general sales manager of the Southern Coal & Coke Co., which operates seventeen mines in southeastern Kentucky and with sales offices in Cincinnati. Mr. Stone plans to return to the Wallins Creek Coal Co., in which he still retains a heavy interest. Mr. Callahan was traffic manager of the National Coal Association when J. D. A. Morrow held the secretaryship of that organization. For the past couple of years he has been connected with a trade directory published in Pittsburgh.

## Coal-Mine Fatalities During June, 1925, by Causes and States

(Compiled by Bureau of Mines and Published by *Coal Age*)

| State | Underground | | | | | | | | | | | | Shaft | | | | | Surface | | | | | | | Total by States | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Falls of roof (coal, rock, etc.). | Falls of face or pillar coal. | Mine cars and locomotives. | Explosions of gas or coal dust. | Explosives. | Suffocation from mine gases. | Electricity. | Animals. | Mining machines. | Mine fires (burned, suffocated, etc.). | Other causes. | Total. | Falling down shafts or slopes. | Objects falling down shafts or slopes. | Cage, skip or bucket. | Other causes. | Total. | Mine cars and mine locomotives. | Electricity. | Machinery. | Boiler explosions or bursting steam pipes | Railway cars and locomotives. | Other causes. | Total. | 1925 | 1924 |
| Alabama | 2 | | 2 | | | | | | | | | 4 | | | | | | | | | | | | | 4 | 5 |
| Alaska | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Arkansas | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Colorado | 2 | | 1 | 3 | | | | | | | 1 | 7 | | | | | | | | | | | | | 7 | 3 |
| Illinois | 2 | | | | | | 2 | | | | | 4 | | | | | | | | | | | | | 4 | 7 |
| Indiana | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 6 |
| Iowa | 2 | | | | | | | | | | | 2 | | | | | | | | | | | | | 2 | 2 |
| Kansas | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Kentucky | 4 | | 3 | 17 | | | | | | | | 24 | | | | | | | | | | | | | 24 | 8 |
| Maryland | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Michigan | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Missouri | | | 1 | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 0 |
| Montana | | 1 | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 0 |
| New Mexico | | | 1 | | | | | | | | | 1 | | | | 1 | 1 | | | | | | | | 2 | 2 |
| North Dakota | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Ohio | 2 | | 1 | | | | | | | | | 3 | | | | | | | | | | | | | 3 | 2 |
| Oklahoma | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Pennsylvania (bituminous) | 3 | | 4 | | 1 | | | | | | | 8 | | | | | | | | | | 1 | | 1 | 9 | 21 |
| South Dakota | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Tennessee | 2 | | | | | | | | | | | 2 | | | | | | | | | | | | | 2 | 2 |
| Texas | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Utah | | 1 | | | | | | | | | | 1 | | | | | | | | | | | 1 | 1 | 2 | 0 |
| Virginia | 3 | | 1 | | | | | | | | | 4 | | | | | | | | | | | | | 4 | 1 |
| Washington | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 3 |
| West Virginia | 12 | 2 | 4 | | | | 2 | | | | 1 | 21 | 1 | | | | 1 | | 1 | | | | 2 | 3 | 25 | 38 |
| Wyoming | 2 | | 1 | | | | | | | | | 3 | | | | | | | | | | | | | 3 | 5 |
| Total (bituminous) | 38 | 4 | 19 | 20 | 1 | | 4 | | | | 2 | 88 | 1 | | | 1 | 2 | | 1 | | | 1 | 3 | 5 | 95 | 108 |
| Pennsylvania (anthracite) | 15 | 2 | 10 | 6 | 6 | | | | | | 2 | 41 | 1 | | | | 1 | 2 | 2 | | | | 4 | 8 | 50 | 55 |
| Total, June, 1925 | 53 | 6 | 29 | 26 | 7 | | 4 | | | | 4 | 129 | 2 | | | 1 | 3 | 2 | 3 | | | 1 | 7 | 13 | 145 | |
| Total, June, 1924 | 79 | 11 | 24 | 20 | 8 | 2 | 7 | | | 2 | 4 | 157 | 2 | | | | 2 | 2 | 1 | | | | 1 | 4 | | 163 |

# Probe of Contract-Breaking Bruited as Sabotage Again Breaks Out Openly In Upper West Virginia Strike Zone

Government investigation of the West Virginia coal fields looms up again, observers predicting that when the U. S. Senate meets again certain representatives of that body will be prevailed upon to probe the charges of alleged contract-breaking. This time it will involve the northern West Virginia fields, if it comes at all, because some of the largest companies are alleged to have resorted to breach of faith in the Fairmont field.

It is generally known that Senator M. M. Neely, who hails from the heart of the Fairmont region, probably will take no part in the proceeding, as he has assumed a neutral position in the struggle and has avoided connection with either side, but labor is banking on him.

With the return of Van A. Bittner, chief international representative of the United Mine Workers, early last week the miners have taken on a new lease of life. Energetic picketing was resumed at the Monongah opening of the New England Mine, the big Federal Mine No. 1 of the New England Fuel & Transportation Co., in Grant Town, which was the storm center in months gone by, as well as at Parker Run mine of the Fairmont & Cleveland Coal Co., the Morgan Mine of the Virginia & Pittsburgh Coal Co., Jamison No. 9, the Rachel Mine of the Bertha-Consumers Co., at Downs, and others.

Announcement was made Aug. 6, that the United Mine Workers had called off the strike at the Graselli Chemical Co. mine at Zeizing near Clarksburg and that the union men were back at work.

Commenting on the hands-off policy of the government, Bittner said in part: "The position of President Coolidge and other high government officials apparently is to allow the coal miners and operators to settle the problems of the industry. They have taken the position that the strike is the only weapon of defense left for the miners to prevent abrogation of present wage agreements by the coal operators, and the position of the United Mine Workers is that if the strike is the only weapon of defense left to enforce existing wage agreements, then they will use it most effectively by calling out every union and non-union coal miner in the United States in both anthracite and bituminous coal fields. And unless something suddenly happens to alter conditions and compel coal operators to comply with their wages agreements, the American people can expect this program to be made effective."

Sabotage has broken out openly in the region. Charles Brown and Albert Gibson, employed at mine No. 2 (Two-lick) of the Fairmont Big Vein Coal Co., were arrested last week, charged with causing $3,000 damage at the plant. Daniel Howard, president of the company, alleges that the men threw bolts in the machinery for the purpose of putting the mechanism out of commission. It was necessary to close the plant for twenty-four hours, but the mine was again working in mid-week and according to Mr. Howard ("Uncle Dan"), all of the loss was covered by insurance.

Coal operators declare that they are getting all of the tonnage that they desire. This is true especially at non-union and company contract plan operations. The Consolidation Coal Co. probably is getting one-third of its capacity, but this seems to be about all the coal that is needed for immediate shipments.

John L. Lewis, international president of the United Mine Workers, is being prevailed upon to address a large union miners' mass meeting in Fairmont on Labor Day. Mr. Lewis, it is reported, has expressed his willingness to address the gathering if he is able to leave the pressure of business incident to a general strike, which is expected to envelope him at that time.

### Leaders Discuss Conditions

Van A. Bittner, John L. Lewis, international president of the union miners, and John H. Jones, of Pittsburgh, president of the Bertha-Consumers Co., held a conference at the Ambassador Hotel in Atlantic City Aug. 7 to discuss conditions at Rachel Mine of the company at Downs, near Fairmont. The miners alleged the company has abrogated its contract and evicted miners and expected to evict more. The miners have threatened to strike the Jones plants in the Pittsburgh and Ohio districts unless the Rachel plant operates union.

In the first two days of last week the non-union mines produced 2,848 cars of coal. The output on Aug. 3 was 1,472 cars, which was within striking distance of the daily peak attained July 28, when 1,524 cars were loaded. Union mines in two days loaded 472 cars of coal. The union production Aug. 4,—237 cars—was the largest reached since the strike began April 1.

Mine No. 1 of the Cleveland & Morgantown Coal Co., located in Scott's Run, resumed operation on a union basis last week. Officials of the United Mine Workers asserted last week that they had organized a number of non-union miners at the Parker Run Mine of the Fairmont & Cleveland Coal Co., at Fairmont.

Everything is quiet in the Panhandle section of northern West Virginia, there having been no recent developments.

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The Davis Coal & Coke Co., operating in West Virginia, Maryland and Pennsylvania, has been following a progressive safety program for the past eight years which has resulted in a steady decrease in accidents. At present every employee holds a Bureau of Mines first-aid certificate. It is the only company boasting of such a record in Maryland and Pennsylvania and is one of three in West Virginia.

### *When a Feller Needs One*

The most difficult problem of administration which T. T. Read, Chief of the Division of Safety of the U. S. Bureau of Mines, has to face concerns colored cooks on the ten mine-rescue cars. "The difficulty," says Mr. Read, "is to provide a source of amusement for the cook while he is alone on the car, which is a large part of every day. We have only two cooks who appear to be satisfied, one who has grown fat in the service and the other who has subscribed to a correspondence course in voice culture."

## Seek Peace Between Races in Southern Coal Fields

The program of the Commission on Inter-Racial Co-operation has been introduced into the coal fields of southwest Virginia, field secretaries of the commission addressing hundreds of colored miners in public meetings and holding conferences with white leaders of the communities. Dr. C. B. Bowyer, surgeon for the Stonega Coal & Coke Co., Stonega, Va., is a member of the district committee. Dr. J. P. McConnell, East Radford, Va. is district chairman.

The aim of the commission, which is made up of representative white and colored leaders of the South, is to help to a better understanding and to a truer and wider conception of one of the most important factors in industrial relations today — a program whereby the two races can live side by side in peace without doing violence to customs and traditions.

The full program includes health, housing, sanitation, education, crime prevention, justice in the courts, economic improvement and the promotion of good will between the races. The work is non-political and non-sectarian.

James D. Burton, of Oakdale, Tenn., is traveling secretary for the commission in southwest Virginia, Tennessee and Alabama.

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## Prizes for Coal-Saving Ideas

The Pennsylvania R.R. is seeking to obtain widespread expression from firemen, enginemen, hostlers, coal chute operators and other employees immediately concerned, of new ideas and helpful suggestions on the problem of saving coal. Prizes of $50, $25 and $10 in the Eastern, Central and Western regions for the best three original articles written by firemen and enginemen on the general subject of saving coal are offered. Locomotives on the Pennsylvania consumed approximately 15,000,000 tons of coal in 1924. The railroads of the country in 1923 bought 159,918,000 tons of coal at a cost of $537,202,000. The cost of coal represents 31 per cent of the total purchases by railroads, and 10 per cent of the total cost of transportation, being the largest item of expense, next to labor, that a railroad is called upon to meet.

## *Persuasion by Prayer Now Enjoined*

Two miners were arrested at Henryetta, Okla., Aug. 8 charged with disturbing the peace. Their arrest followed an order by Sheriff John Russell forbidding "further outdoor prayer meetings," and other gatherings in the mining fields. "Prayer meetings" have been a recent feature of a strike which started last spring when a number of operators attempted to reduce wages to the 1917 scale.

Miners and their wives have gathered daily at the mine gates and as workers departed have prayed for their safety and invoked divine help in persuading them to abandon their labors. Hymns have been sung.

In a conference with Governor M. E. Trapp, Okmulgee County authorities declared that the working miners found it unpleasant to have the men they have dispossessed praying daily for their physical safety. They said that the meetings carry a veiled threat against the peace of the mining field and for that reason have been barred.

Sixty-two National Guardsmen and Okmulgee County deputy sheriffs were on duty in the Henryetta mining district Aug. 8 and operations continued quietly. A habeas corpus hearing on that day for the two miners charged with disturbing the peace was continued until Monday.

## Judge Gray Dies

George Gray, once a leader in the U. S. Senate, an ex-Judge of the Circuit Court of Appeals and the last survivor of the commission which negotiated the Treaty of Paris in 1898, died at his home in Wilmington, Del., Aug. 7. He was 85 years old and had been ill since last December.

Besides his many other activities, Judge Gray had been a member of the Permanent Tribunal of International Arbitration at The Hague. He came into prominence as an international figure in 1898 when President McKinley appointed him one of the commissioners to Paris to negotiate the treaty of peace with Spain upon the conclusion of the Spanish-American War.

In the anthracite strike of 1902, when both sides seemed hopelessly deadlocked after five months of controversy, the operators called upon President Roosevelt to name a commission to arbitrate. He designated Judge Gray, chairman; Brig.-Gen. John M. Wilson, Bishop Spalding of Illinois, Edward W. Parker, Thomas H. Watkins, Edgar E. Clark and Carroll D. Wright. The commission's efforts at conciliation were successful; both sides made concessions and the miners went back to work. Three years later Judge Gray as arbitrator brought peace to Alabama coal fields after months of strife.

## Hoover Committee Studies Organization and Policy Of U. S. Bureau of Mines

Initial sessions of Secretary Hoover's advisory committee on the activities of the Commerce Department affecting the mining industry were devoted entirely to the presentation of organization questions raised by the transfer of the Bureau of Mines. The committee sat Aug. 6 and 7. Most of the time was devoted to hearing the views of the directors of the Bureau of Standards, of the Bureau of Mines and of their division chiefs. The Bureau of Foreign and Domestic Commerce submitted a written statement.

The committee acted formally in electing as its president J. V. W. Reynders, who is president of the American Institute of Mining and Metallurgical Engineers, and as its secretary C. P. White, chief of the Coal Division, Department of Commerce.

Secretary Hoover explained at the opening meeting that he is anxious to know what value the mining industry attaches to the work which the Bureau of Mines has done and what suggestions it has for the future conduct of the Bureau, now that it is associated more closely with the agencies in the Department of Commerce which have been serving the mining industry.

The committee learned that fundamental issues are involved. Apparently the form of organization of the Bureau of Mines will be analyzed and other forms of organization considered.

The committee will hold its next meeting in Salt Lake City in September, where contact will be established with numerous representatives of the industry. It is planned to discuss the matter with those actively engaged in mining enterprises.

L. S. Cates, president of the American Mining Congress, was unable to attend the meeting in Washington. He was represented, however, by James F. Callbreath, secretary of the Mining Congress. Philip Murray, of the United Mine Workers, also was prevented from coming and sent F. P. Hanaway, his assistant, to represent him. D. M. Folsom, the representative of the American Petroleum Institute, could not attend, but the other members of the committee — Chairman Reynders, Secretary White, J. G. Bradley, of the National Coal Association, and H. Foster Bain, former director of the Bureau of Mines—were in attendance.

One of the important points which the committee will consider is the correlation of the work of the division of mineral technology and the division of mineral resources in the Bureau of Mines and the relation of that work to the Bureau of Foreign and Domestic Commerce.

## *Nova Scotia Strike Ended; Men Return to Work*

Coal miners of Nova Scotia employed by the British Empire Steel Corporation, who had been on strike for more than five months, agreed by a majority of 1,133 in a referendum Aug. 5 to return to work under the proposals of the Provincial Government. There were 6,693 votes polled, many of the miners not voting.

The terms of settlement were accepted on the next day by the British Empire Steel Corporation and the men were to return to work on Monday, Aug. 10, at most of the mines. Two of the collieries, however, are closed down indefinitely on account of flooding. Premier Rhodes of Nova Scotia announces that as speedily as possible the government will appoint a commission to make an exhaustive inquiry into the coal trade of the province.

Resumption of work is under an interim six months' contract pending a thorough investigation of the industry. Wages paid will be those of 1922, or a reduction of 6 to 8 per cent from the 1924 rates, and working conditions will be those of 1924. The government will rebate one-fifth of its coal royalties. The controversial check-off system of union dues being collected by the company will be submitted to a referendum held by the government.

*Wide World Photos.*

**Hoover and Advisory Committee Discuss Policy of Bureau of Mines**

The advisory committee appointed by Secretary Hoover of the Department of Commerce to consider questions of policy and reorganization in connection with the transfer of the Bureau of Mines from the Department of the Interior to the Department of Commerce, held their first meeting Aug. 6. Left to right: C. P. White, chief of the Coal Division of the Bureau of Foreign and Domestic Commerce; F. P. Hanaway, of the United Mine Workers, Pittsburgh; J. V. W. Reynders, president American Institute of Mining and Metallurgical Engineers, New York; Chairman, Secretary of Commerce Herbert Hoover; J. G. Bradley, ex-president, National Coal Association, Dundon, W. Va.; J. F. Callbreath, secretary of the American Mining Congress, and H. Foster Bain, former director of the Bureau of Mines.

# Viewpoints of Our Readers

## Out West They Laugh (Yes They Do!)

I operate a small coal mine in the great West in competition with southern California fuel oil, so you might think that I never laugh; but anyway, every time I pick up a *Coal Age* and read about the operators in the effete East I get a good laugh. Every time a southern California real estate man's helper drives a fence post into a new subdivision of Los Angeles and something squirts up into his eye and he says: "This must be oil," and and it *is* oil and he sells stock to some retired coal magnate, we laugh some more. When a string of oil tankers comes through the mine yard, then we say that it must be hell to mine coal close to West Virginia with union labor.

But, like the operators close to West Virginia, we never kick. Sometimes when I read in *Coal Age* about some operator in the effete East who wants the other stiff to hold up prices, I get a big idea and decide to go down to Los Angeles and call a convention of real estate and oil men and ask them not to open up any more subdivisions and to hold the price of oil up so that we can sell coal at a profit.

The birds that work in this mine are funny. They have to have pancakes for breakfast every morning and sometimes ham and eggs, so I say to them: "You can't have enough pay to buy pancakes and ham and eggs unless you can go down in the mine and dig coal like a gopher digs dirt and throw it clear up on the tipple like oil out of a gusher, and it's got to be mostly big lumps at that."

Then they say: "We can't spout coal like a gusher does oil, so we better go to logging or building concrete highways," and I think that this is a good idea, especially the concrete highways, because the oil men in southern California are buying plenty of tax-exempt securities so that we can have lots of concrete highways, and they never have any money left over to lend to coal operators.

So we just sell coal to people who don't burn oil *yet*, and charge them a good price so that the guys can have their pancakes and sometimes ham and eggs and we can eat regular too. There aren't very many of us and there may be *less* because oil is like a non-union operator, only worse. Whenever I see in *Coal Age* that some operator in the effete East has fixed it so that the operators in West Virginia will sell only pancake- and maybe ham-and-egg-coal I am going to write him and ask him to come out here because I want him to go down to California with me and talk to the oil operators. A WESTERNER.

Renton, Wash.

## Oil Burners Grieve in Silence

There must be many cases in which the purchasers of oil-burning equipment are discovering to their sorrow that they have been "stuck." Unfortunately, few ever hear about them because the unfortunate purchaser does not want his friends "to have the laugh on him."

A personal friend of mine told me his oil burner was working fine, but that it was more expensive to use oil than coal. This is what his next-door neighbor, also an intimate friend of us both, told me "on the side": It is impossible to tell how much oil is in the tank without measuring it with a stick, and the stick is almost worn out poking it down into that tank. When the last of the oil is pumped up into the secondary tank in the cellar it holds only a day's supply, and the oil man must get there immediately. Consequently, the first question he asks his wife at night is: "Has the oil man come today?" They have to be calling up once every ten days for oil. The truck delivers between 300 and 450 gal. at 10c. a gallon at a time, making his heating cost about $125 a month, whereas, this householder used to burn no more than five tons of coal in that time. During the winter and heavy snows it was difficult to find the intake of the outside oil tank for it was continually getting frozen over. The man on the oil truck put the pipe hose into the mouth of an old drain in the backyard by mistake and delivered untold gallons into the sewer before he discovered his error.

If one would find out just how the plant of an oil burner is working, ask his neighbors. They will know, and they seem to enjoy the other fellow's difficulties. It is only the fact that many oil users are afraid of getting the "big laugh," that prevents a lot of adverse information coming to our ears.

H. V. BLAUVELT,
Vice-president.
Comfort Coal-Lumber Co.,
Hackensack, N. J.

## "Candlepower" Is Passing

The advent of modern research and the results obtained have altered many of our old-time standards, and in the subject of lighting some of our everyday terms have proved to be illusory. The old conception of candlepower is being exploded, for we now have lamps the illumination of which bears no relation to their so-called candlepower.

I recently submitted to test various types of lamps from the old Davy to the modern electric cap lamp. The method of comparison was a new one, the experiments being conducted in an underground gallery, in roadways with both black and grey walls, representing the coal face and roadways respectively.

The suitability of the lamp was determined by the distance at which ordinary objects could be seen readily and picked up, also by the distance the lamps could be placed back from the black wall representing the coal face and still adequately illuminate certain operations, such as undercutting either by hand or machine. A further point considered was the area of wall illuminated by the hand lamp so as to determine how often the lamp must be moved to obtain adequate lighting.

This method of measuring illumination had the advantage of simplicity and, undoubtedly, would appeal more readily to the imagination of the ordinary mine worker than any elaborate photometric test.

During the discussion of the paper describing these tests,* a well-known lamp maker and voluminous writer on the subject frankly gave as his opinion that "candlepower" as applied to safety-lamps was meaningless, but at the same time he made no suggestion of a term to take its place.

Dr. Llewellyn, a well-known authority on underground illumination, uses the foot-candle as a standard.

JAMES COOPER.
Heriot-Watt College,
Edinburgh, Scotland.

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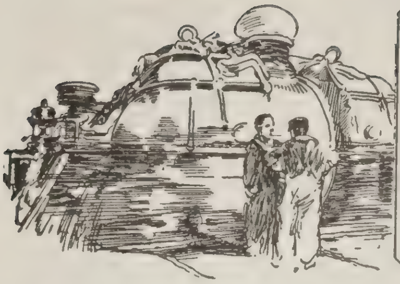
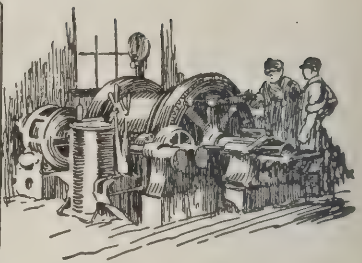
*Transactions, Institute of Mining Engineers, Vol. LXVIII, Part 2.



# Practical Pointers For Electrical And Mechanical Men



## Automatic Switch Thrower Aids Motors In Moving Trips to Tipple

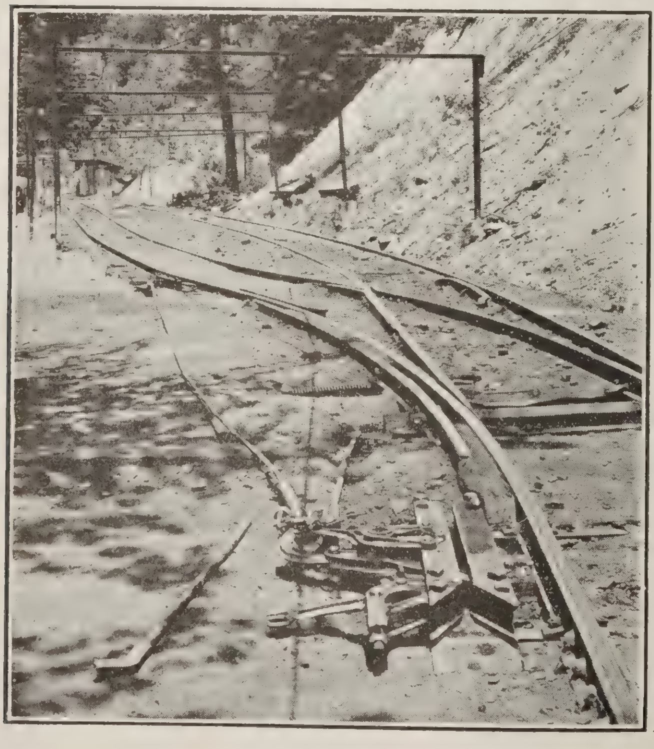
The Gay Coal & Coke Co., near Logan, W. Va., alert to increase the efficiency and lessen the accident risk of every part of its operation, has installed an automatic switch thrower at the turnout to a by-pass track on the main outside tram road leading to the tipple. By means of the thrower the motormen are able to control the movements of their locomotives over, into or out of the switch, and in this respect the switch is made selective.

But it is in the changing of positions by the locomotives from the front to the rear end of a trip so as to simplify the movements in backing the cars to the tipple that this device serves its greatest usefulness in this installation. This shifting operation is performed by the motorman without any aid from the trip rider who thus avoids the danger of jumping from a moving locomotive—a customary practice where a hand-operated switch is employed.

In the accompanying illustration are seen the essential details of the switch thrower. These are designated as the "tripping device" and the "switch thrower." In addition, bolted to one side of each tram locomotive is a lever mechanism called the "traveler."

A locomotive moving on the right-hand or main track on its way to the tipple with a trip of coal cuts loose from the cars in the clear of the frog, and alone crosses over the frog and switch. In doing so the traveler on the locomotive is depressed by the motorman to pass through the guides and engage a finger-like lever on the switch thrower which opens the switch behind the locomotive.

The locomotive being in the clear of the switch which is now open reverses its direction, passing through the switch and onto the by-pass track. A short distance beyond the frog on the by-pass track is the tripping device which likewise is engaged by the depressed traveler, closing the switch. The locomotive continues in motion, passes the standing trip on the main track, goes through a spring latch at the far end of the by-pass track and pulls up at the rear of the trip which it then backs to the tipple.



**Switch Needs No Hands**

When a loaded trip comes up on the right-hand track, the locomotive cuts off and proceeds forward through the switch, lowering a "traveler" bar into the slot in the switch thrower (foreground). This throws the switch-point so the motor can back into the by-pass track. When the "traveler" engages the tripping device beside the rail in the middle background, the switch is closed. The motor then runs around the trip and pushes it to the tipple.

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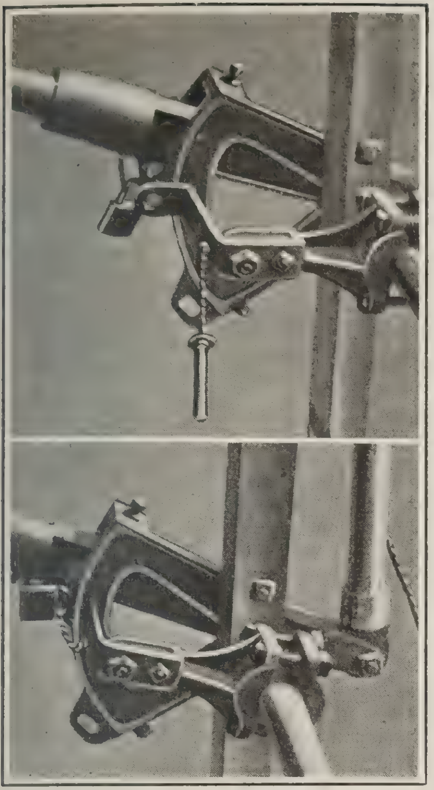
### Interlock Protects Mine Electrical Service

Constant co-operation between power and coal company men leads more and more to the use of devices that make continuity of service a reality today whereas a few yeras ago uninterrupted service was scarcely to be hoped for.

Annoying interruptions have been eliminated in some instances by the power company supplying service over two sets of lines, either of which may be used through double-throw switches. However, in such cases it is frequently necessary for the central station to request that the colliery workmen change over from "No. 1 line to No. 2 line" to permit change of insulators, repairs to switches, or other manipulation of line No. 1. Often this affects more than one colliery and involves not only the delay of tripping off all the load at the main oil switch, with consequent loss of tonnage, etc., but also necessitates phoning instructions to the more remote operations affected by the change. Sometimes, interruptions of as long as 20 min. are experienced before pumping and other operations can all be normally resumed.

At one of our mines two sets of air-break switches were installed to replace two double-throw switches. An agreement was reached with the power company to parallel the two lines in the process of changing from one line to the other. There then remained only the difficulty of determining what to use for a satisfactory interlock to insure the opening of the first line after the second line had been placed in service. The interlock to be described was designed to meet the conditions imposed. It



Interlocking Device Prevents Use of Lines in Parallel

The upper illustration shows the switch handle coming into position. The lower picture shows the switch in place and locked by means of a pin and padlock. The switch handles are arranged so that they cannot be locked unless one switch is open and the other closed.

was necessary that there be: (1) Insurance against accidental paralleling of the lines. (2) Simplicity of operation with rugged construction. (3) Positive interlocking that would make it impossible for an operator to walk away from the tower leaving both switches in.

To accomplish the desired results the two switches were mounted on top of a tower side by side. The operating rods were reversed so that when both operating handles were in the down position one switch would be open and one closed. The open switch could then be closed by pulling the handle into the up position. In this manner the lines were paralleled. Pulling the other switch handle up opened the first line. When both handles were up, as before, one switch was open and one closed. The switches lock in this position so that this last condition always exists when the switches are left in.

As the system works now, both handles can also be locked in the up position or in the down position. This is arranged as follows: A 1¼-in. galvanized pipe is run across the tower, on the right-hand end of this pipe is riveted one handle so that when it is moved the pipe turns. In effect, it is a long shaft operated by the handle and rotated in rough bearings. This handle then performs two functions, namely, operating its own switch and rotating the shaft. On the left-hand end of the pipe shaft the other operating handle pivots loosely, operating only its own switch. On the pipe shaft near this handle is clamped a short arm having a hole at the end of it.

When both handles are up, or both down, the hole in this short arm comes opposite the hole in the handle and the stationary hole in the quadrant in which the handle moves. A pin is provided to enter these three holes and a padlock hangs ready to snap through an opening in the end of the pin. The pin is attached to the short arm by a length of chain; the padlock is similarly chained to the operating handle. These chains are so short that it is impossible to use the pin and padlock unless the three holes are lined up either in the up position or in the down position; so one switch must be in, and one out before the final operation of locking the switches can be accomplished.

It is a simple matter, when lines are to be changed, to unlock the padlock, remove the pin, put in the switch that was open, thus paralleling the lines, and finally pull out the first switch in order to line up the three holes again to insert the pin and lock.

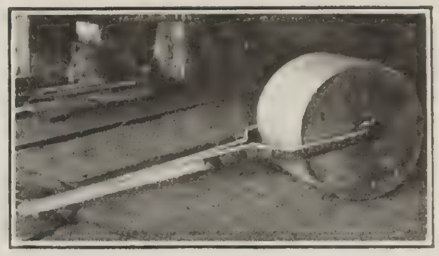
To further avoid confusion a large lettered sign concisely stating the whole procedure to be followed is hung on the structure facing the operator.

Electrical Engineer.

## Old Belt Pulley Now Serves as Hand Lawn Roller

Particularly during recent years, commendable pride has been exhibited in the appearance of mines and mining plants throughout the country. Lawns, flower beds and the like have taken the place of many an unsightly scrap heap. Lawns, however, cannot be properly cared for without suitable tools. The accompanying photograph shows a hand roller recently built in the shops of the Kingston Coal Co., Kingston, Pa., for use on company lawns.

This roller was once a large belt pulley driving a coal crusher. The openings in the end of this pulley were, however, filled with heads made of boards. In the center of each head a trunnion was fastened.



Ready for Use

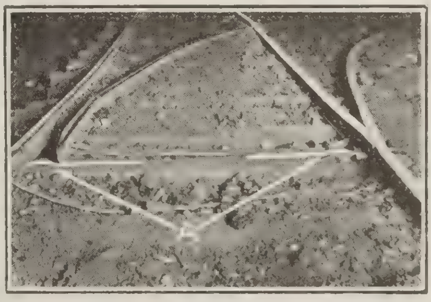
This roller, the main portion or member of which was once a belt wheel, is here shown in the shop where it was built. An eye-bolt has been placed upon either side of the bail. These may form the attachment for two ropes so that in case the ground is so soft and yielding that one man is unable to handle this roller, three or more can pull it along.

The rest of the construction—a two-piece bail and a tongue or handle—was easy. By making this roller, not only was an old, practically scrapped article turned to a useful end, but a far more serviceable and durable machine was obtained than ordinarily could be purchased in the open market.

## "Humped" Strap Reduces Mine Car Wrecks

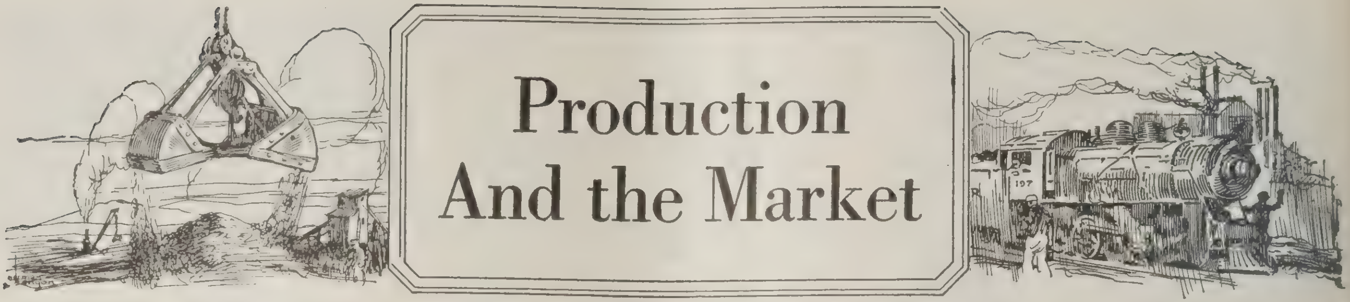
Many mine car derailments occur at room turnouts because latches do not stay in the position in which they are set. In fact so serious is this aggravation that many mining men believe it would pay to employ switch throws on room switches in spite of the cost. The Island Creek Coal Co. overcomes much of the trouble without the use of switch throws by spiking a humped iron strap on the tie under the points of the latches.

The hump lies inside of the latch point when the latter is set against the rail as shown on the right side of the switch in the accompanying illustration, and on the outside when the latch point is set away from the rail as shown on the left side of this illustration. The humped bearing bar holds the points to the position in which they have been set.



Holds Switch Points Tight

The iron strap with the hump in each end ("A") will not let latch points joggle out of position. This lessens derailments at room turnouts.



# Production And the Market

## Upturn in Soft-Coal Market Continues; Anthracite Trade Lively

Demand and inquiry for soft coal continue to improve and a gradual betterment in prices also is in evidence; as production is keeping pace pretty closely with the increased movement of tonnage to consumers' prices advances on the whole have not been especially marked. There is every reason to believe, however, that the upturn will continue to gain headway, particularly if there is suspension of operation at the anthracite mines, as seems almost certain.

There was a letdown in buying of Illinois and Indiana coals in Midwest markets last week, most consumers having got under cover the week before in anticipation of a price advance Aug. 1. The experiment in mail-order coal selling, incidentally, is said to be falling behind the expectations of its sponsors, though an improvement is looked for this month. Steam coals continue to be weak and erratic. Demand is improving in Kentucky and the general outlook is better. Prices are gradually advancing in eastern Kentucky, being unchanged in the western fields. The situation at the head of the lakes is coming around satisfactorily, better bookings and inquiry being noted. Mines in Kansas and the Southwest are reopening in anticipation of better business, which has not appeared as yet. A slight improvement in demand in Colorado has caused a small increase in operation, but the Utah market continues to drag.

Shippers at Cincinnati are sitting tight, letting the buyers come to them, and prices have stiffened right down the line. Coal movement through the Cincinnati gateway from West Virginia and southeastern Kentucky broke all records during the week ended Aug. 1. Domestic demand is slightly stronger in southern Ohio. Week to week changes are slight at Pittsburgh but a slight gain has been made in the last month. A weakening tendency has appeared in New England, the market having been somewhat overplayed. Gradual improvement is in evidence at New York and Philadelphia but Baltimore and Birmingham are practically as dull as ever, except for some increase in export activity at the former port.

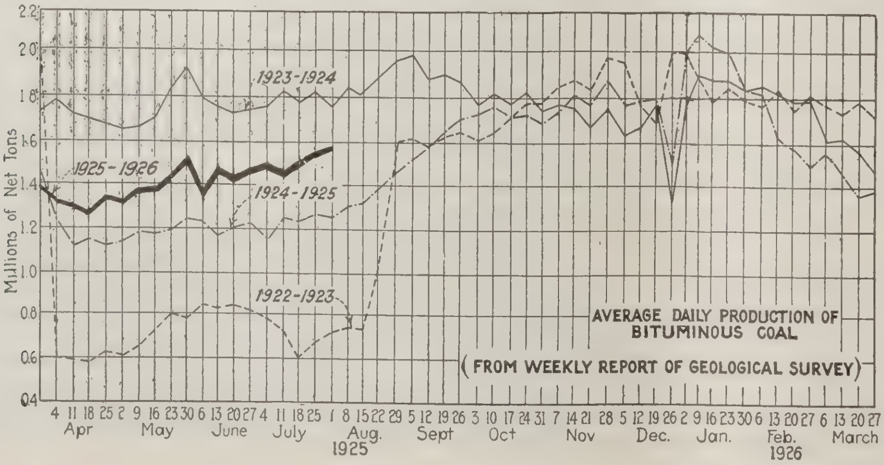
### Hard-Coal Trade Brisk

Business is lively in hard coal as the likelihood of a suspension of operation increases. The companies are nearly sold out on all sizes. Stove is in strong demand, closely followed by egg. Chestnut is moving well too and pea is coming from storage piles to meet the call. Steam sizes have picked up strongly and the independents are getting full prices for their product without any difficulty.

Bituminous coal output in the week ended Aug. 1 is estimated by the Geological Survey at 9,482,000 net tons, compared with 9,343,000 tons in the previous week, as shown by revised figures. Anthracite production in the week ended Aug. 1 totaled 2,087,000 net tons, compared with 2,049,000 tons in the preceding week.

*Coal Age* Index of spot prices of bituminous coal advanced three points during the last week, standing on Aug. 10 at 166, the corresponding price being $2.01.

Dumpings at Lake Erie ports during the week ended Aug. 9 were: Cargo, 901,800 net tons; steamship fuel, 40,189 tons—a total of 941,989 net tons, compared with 987,996 tons in the previous week. Hampton Roads dumpings in the week ended Aug. 6 totaled 461,260 net tons, compared with 445,793 tons in the preceding week.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| July 18 (*a*) | 7,644,000 | 8,965,000 |
| July 25 (*b*) | 7,785,000 | 9,343,000 |
| August 1 (*b*) | 7,723,000 | 9,482,000 |
| Daily average | 1,287,000 | 1,580,000 |
| Cal. yr. to date | (*a*) 266,579,000 | 275,562,000 |
| | 1,482,000 | 1,529,000 |
| **ANTHRACITE** | | |
| July 18 | 1,840,000 | 1,985,000 |
| July 25 | 1,837,000 | 2,049,000 |
| August 1 | 1,720,000 | 2,087,000 |
| Cal. yr. to date | (*c*) 53,709,000 | 53,924,000 |
| **COKE** | | |
| July 25 (*a*) | 99,000 | 251,000 |
| August 1 (*b*) | 95,000 | 117,000 |
| Cal. yr. to date | (*c*) 6,502,000 | 5,848,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Market Has a Lull in Buying

Following the price advance in the Middle West on Illinois and Indiana domestic coals as of Aug. 1 there was, as was expected, a little lull in buying and orders dropped off, as practically everyone who was in the market had placed orders before the increase. The publicity being given to the anthracite wage negotiations and until recently to the British situation led to active buying, and it is reported that several of the larger corporations operating mines in Illinois have made definite arrangements to reopen their mines permanently for the season. Most of the mines being reopened are in Franklin, Williamson and Saline counties, although activities are reported in other fields.

The mail order coal experiment, it is said, is not meeting with the enthusiasm from the public that had been anticipated. It is thought that the mail order people will do a great deal better in August owing to the unusual situation in the anthracite fields and the usual seasonal demand.

Steam coals are week and erratic, as has been the case for some months. There has been no real buying yet and Western Kentucky operators are selling strip screenings in some cases as low as 75c. a ton.

Anthracite sales agencies in three or four instances have withdrawn all prices from the Chicago market, asserting that they are sold up until Sept. 1 and, owing to the uncertainty of the labor situation as of that date, do not care to take on further obligations. Some of the smokeless producers have quoted $3.50, f.o.b. mines, for prepared sizes to the trade and say they are getting more business than they can comfortably handle on this basis. They also are asking $2.25 @ $2.50 for smokeless mine run for late August shipment.

Domestic business in southern Illinois is coming along unusually well judging from the way the mines in Williamson, Franklin and Saline counties are working. An unusual amount of the smaller sizes is unbilled, however, and this means that some mines are considering storing a good tonnage of this coal if they hope to move the larger sizes. Some mines are working practically full time and others are down to two days a week, but conditions show considerable improvement and railroad tonnage from the shaft mines is good. Steam is slow. The strip mines are all showing good working time although a lot of coal is going out at unusually low prices. Here and there in the field a few crushers are operating on contract coal. All over these fields preparations are under way for reopening mines that have been idle for many months.

In the Duquoin field there is some increased activity, but not to the same extent as in Franklin County. Working time is three days a week for the mines that are working and strip mines are getting practically full time. In the Mt. Olive district very little is moving as yet. Steam sizes are still being crushed at some mines and railroad tonnage

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Aug. 11 1924 | July 27 1925 | Aug. 3 1925 | Aug. 10 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.60 | $2.85 | $2.85 | $2.75@$3.00 |
| Smokeless mine run | Columbus | 2.10 | 1.85 | 1.85 | 1.75@ 2.00 |
| Smokeless screenings | Columbus | 1.20 | 1.35 | 1.35 | 1.25@ 1.50 |
| Smokeless lump | Chicago | 3.85 | 3.10 | 3.25 | 3.25 |
| Smokeless mine run | Chicago | 1.85 | 2.00 | 2.00 | 1.90@ 2.10 |
| Smokeless lump | Cincinnati | 3.85 | 2.85 | 3.00 | **3.00@ 3.25** |
| Smokeless mine run | Cincinnati | 1.85 | 2.00 | 2.00 | **2.00@ 2.15** |
| Smokeless screenings | Cincinnati | 1.30 | 1.30 | 1.30 | **1.35@ 1.50** |
| *Smokeless mine run | Boston | 4.20 | 4.35 | 4.40 | *4.25@ 4.35* |
| Clearfield mine run | Boston | 1.90 | 1.80 | 1.75 | 1.65@ 1.90 |
| Cambria mine run | Boston | 2.25 | 1.95 | 1.95 | **1.85@ 2.10** |
| Somerset mine run | Boston | 2.05 | 1.85 | 1.85 | 1.75@ 2.00 |
| Pool 1 (Navy Standard) | New York | 2.30 | 2.55 | 2.55 | 2.35@ 2.75 |
| Pool 1 (Navy Standard) | Philadelphia | 2.80 | 2.60 | 2.60 | 2.45@ 2.75 |
| Pool 1 (Navy Standard) | Baltimore | .... | 1.85 | 1.85 | 1.80@ 1.95 |
| Pool 9 (Super. Low Vol.) | New York | 2.05 | 1.95 | 1.95 | 1.80@ 2.10 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.00 | 2.00 | 1.85@ 2.20 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.95 | 1.75 | 1.75 | 1.65@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.95 | 1.80 | 1.75 | 1.65@ 1.90 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.70 | 1.70 | 1.60@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.70 | 1.60 | 1.60 | 1.55@ 1.65 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.55 | 1.60 | 1.50@ 1.75 |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.40 | 1.40 | 1.35@ 1.45 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.50 | 1.60 | *1.45@ 1.70* |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.50 | 1.50 | 1.45@ 1.60 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.35 | 1.35 | 1.30@ 1.45 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.40 | 2.40 | 2.30@ 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.30 | 1.50 | 1.50 | 1.40@ 1.60 |
| Kanawha lump | Columbus | 2.10 | 2.00 | 2.00 | 1.90@ 2.15 |
| Kanawha mine run | Columbus | 1.40 | 1.40 | 1.40 | 1.35@ 1.50 |
| Kanawha screenings | Columbus | 1.05 | 1.15 | 1.15 | 1.10@ 1.25 |
| W. Va. lump | Cincinnati | 2.25 | 2.25 | 2.35 | 2.25@ 2.50 |
| W. Va. gas mine run | Cincinnati | 1.45 | 1.40 | 1.45 | **1.50@ 1.65** |
| W. Va. steam mine run | Cincinnati | 1.45 | 1.30 | 1.30 | **1.40@ 1.50** |
| W. Va. screenings | Cincinnati | .85 | 1.15 | 1.15 | **1.25@ 1.35** |
| Hocking lump | Columbus | 2.45 | 2.15 | 2.15 | 2.00@ 2.30 |
| Hocking mine run | Columbus | 1.55 | 1.55 | 1.55 | 1.45@ 1.70 |
| Hocking screenings | Columbus | 1.05 | 1.35 | 1.35 | 1.25@ 1.45 |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.25 | 2.25 | 1.90@ 2.60 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.90 | 1.90 | 1.85@ 1.95 |
| Pitts. No. 8 screenings | Cleveland | 1.20 | 1.40 | 1.45 | 1.40@ 1.50 |

| Midwest | Market Quoted | Aug. 11 1924 | July 27 1925 | Aug. 3 1925 | Aug. 10 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $2.85 | $2.60 | $2.85 | $2.75@$3.00 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.70 | 2.00 | 2.00 | 1.75@ 2.25 |
| Central Ill. lump | Chicago | 2.50 | 2.35 | 2.60 | 2.50@ 2.75 |
| Central Ill. mine run | Chicago | 2.10 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central Ill. screenings | Chicago | 1.60 | 1.70 | 1.70 | 1.50@ 1.90 |
| Ind. 4th Vein lump | Chicago | 2.60 | 2.60 | 2.85 | 2.75@ 3.00 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.70 | 1.80 | 1.80 | 1.65@ 2.00 |
| Ind. 5th Vein lump | Chicago | 2.35 | 2.25 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.55 | 1.50 | 1.50 | 1.40@ 1.60 |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.25 | 2.25 | 2.25 |
| Mt. Olive screenings | St. Louis | 2.00 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.15 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.20 | 1.30 | 1.25 | **1.25@ 1.40** |
| West Ky. block‡ | Louisville | 2.10 | 1.65 | 1.80 | 1.75@ 1.85 |
| West Ky. mine run | Louisville | 1.60 | 1.15 | 1.15 | 1.10@ 1.25 |
| West Ky. screenings | Louisville | 1.15 | .85 | .90 | *.80@ .95* |
| West Ky. block‡ | Chicago | 2.05 | 1.90 | 1.90 | **1.75@ 2.25** |
| West Ky. mine run | Chicago | 1.60 | 1.35 | 1.35 | 1.15@ 1.60 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.40 | 2.00 | 2.00 | 1.75@ 2.25 |
| Big Seam mine run | Birmingham | 1.75 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.00 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block‡ | Chicago | 2.10 | 2.55 | 2.55 | 2.40@ 2.75 |
| S. E. Ky. mine run | Chicago | 1.50 | 1.70 | 1.70 | 1.60@ 1.85 |
| S. E. Ky. block‡ | Louisville | 2.10 | 2.25 | 2.25 | **2.25@ 2.75** |
| S. E. Ky. mine run | Louisville | 1.55 | 1.55 | 1.55 | 1.35@ 1.75 |
| S. E. Ky. screenings | Louisville | .95 | 1.10 | 1.10 | **1.10@ 1.25** |
| S. E. Ky. block‡ | Cincinnati | 2.35 | 2.35 | 2.35 | **2.40@ 2.75** |
| S. E. Ky. mine run | Cincinnati | 1.45 | 1.45 | 1.45 | **1.40@ 1.65** |
| S. E. Ky. screenings | Cincinnati | .95 | 1.15 | 1.20 | **1.25@ 1.35** |
| Kansas lump | Kansas City | 4.50 | 4.00 | 4.25 | *4.00@ 4.25* |
| Kansas mine run | Kansas City | 3.50 | 3.00 | 3.10 | 3.00@ 3.25 |
| Kansas screenings | Kansas City | 2.50 | 2.50 | 2.50 | 2.50 |

* Gross tons, f.o.b. vessel, Hampton Roads.

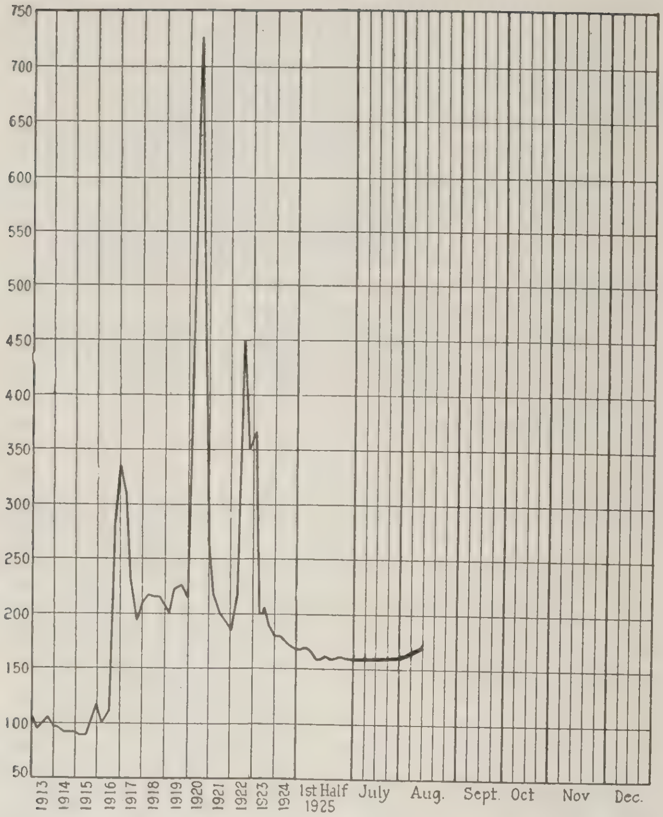
† Advances over previous week shown in **heavy type**; declines in *italics*.

‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | August 11, 1924 | | August 3, 1925 | | August 10, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ............ | $8.00@$9.10 | ............ | $8.20@$8.90 | ............ | $8.20@$8.90 |
| Broken | Philadelphia | 2.39 | ............ | 8.90@ 9.05 | ............ | 8.25@ 8.90 | ............ | 8.25@ 8.90 |
| Egg | New York | 2.34 | $8.50@$8.75 | 8.65@ 9.10 | $9.25@$9.50 | 8.65@ 8.90 | $9.25@$9.50 | 8.65@ 8.90 |
| Egg | Philadelphia | 2.39 | 9.00@ 9.70 | 9.00@ 9.05 | 8.80@ 9.40 | 8.70@ 8.85 | **8.90@ 9.70** | 8.70@ 8.85 |
| Egg | Chicago* | 5.06 | 8.10@ 8.25 | 8.02@ 8.12 | 7.86@ 8.60 | 7.54@ 8.28 | **8.17@ 8.60** | **8.03@ 8.28** |
| Stove | New York | 2.34 | 9.25@ 9.60 | 8.65@ 9.45 | 9.75@10.00 | 9.15@ 9.40 | **9.75@10.50** | 9.15@ 9.40 |
| Stove | Philadelphia | 2.39 | 9.35@10.00 | 9.05@ 9.10 | 9.40@ 9.75 | 9.15@ 9.30 | **9.15@10.75** | 9.15@ 9.30 |
| Stove | Chicago* | 5.06 | 8.40@ 8.60 | 8.30@ 8.45 | 8.22@ 8.70 | 8.32@ 8.80 | **8.71@ 8.90** | **8.40@ 8.80** |
| Chestnut | New York | 2.34 | 8.25@ 8.75 | 8.65@ 9.15 | 9.25@ 9.50 | 8.65@ 8.90 | 9.25@ 9.50 | 8.65@ 8.90 |
| Chestnut | Philadelphia | 2.39 | 8.85@ 9.80 | 9.00@ 9.05 | 8.80@ 9.65 | 8.85@ 8.90 | **9.15@10.15** | 8.85@ 8.90 |
| Chestnut | Chicago* | 5.06 | 8.20@ 8.32 | 8.24@ 8.38 | 8.24@ 8.45 | 7.79@ 8.10 | 8.24@ 8.45 | **8.10@ 8.28** |
| Pea | New York | 2.22 | 4.50@ 5.25 | 5.50@ 6.00 | 5.25@ 5.75 | 5.00@ 5.55 | 5.00@ 6.00 | 5.00@ 5.55 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | 5.50@ 5.75 | 5.00@ 5.50 | **5.50@ 5.90** | 5.00@ 5.50 |
| Pea | Chicago* | 4.79 | 5.15@ 5.60 | 5.36@ 5.91 | 4.91@ 5.36 | 4.91@ 5.36 | 4.91@ 5.36 | 4.91@ 5.36 |
| Buckwheat No. 1 | New York | 2.22 | 2.00@ 2.25 | 3.00@ 3.15 | 2.25@ 2.50 | 2.50 | *2.15@ 2.60* | 2.50 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | 2.15@ 2.75 | 2.50 | **2.50@ 2.75** | 2.50 |
| Rice | New York | 2.22 | 1.70@ 2.00 | 2.00@ 2.25 | 2.00@ 2.25 | 2.00 | 2.00@ 2.25 | 2.00 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | 1.85@ 2.00 | 2.00 | **2.00@ 2.25** | 2.00 |
| Barley | New York | 2.22 | 1.15@ 1.40 | 1.50 | 1.50@ 1.75 | 1.50@ 1.60 | 1.50@ 1.75 | 1.50@ 1.60 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | 1.40@ 1.50 | 1.50 | **1.50@ 1.75** | 1.50 |
| Birdseye | New York | 2.22 | ............ | 1.60 | ............ | 1.60 | ............ | ............ |

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Aug. 10 | Aug. 3 | July 27 | Aug. 11 |
| Index .......................... | 166 | 163 | 160 | 163 |
| Weighted average price .... | $2.01 | $1.97 | $1.94 | $1.98 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

is light. Working time is poor, too. In the Standard field coal is going at about cost, with working time low and demand light. Steam sizes are beginning to worry the operators, but if steam is worrying them now, what will it be when business gets good on domestic? Railroad tonnage is easing with mines getting from two to three days and exceptionally four days a week. All have "no bills" and coal is selling at about cost. Prices are unchanged.

In St. Louis there is considerable activity in a retail way for the better grades of Illinois coal. Anthracite, smokeless and coke are a little slow, principally because the people who have bought this fuel in the past are now using oil. Southern Illinois high grade is moving well but Mt. Olive is not active and Standard is delivered only to cheap storage apartments. Local wagonload steam is slow and carload is easy, with no unusual demand. Country domestic is beginning to show up much better—for the better grades principally. Several sections carry no west Kentucky rates and this is making business good for Illinois. West Kentucky continues to move in volume to Illinois and Iowa points and the demand for anthracite has eased off. Country steam is light. There has been an increase in the price of domestic coals in St. Louis of about 25c. a ton.

### General Situation Better in Kentucky

Coal demand in the Kentucky fields is better than it has been and the general situation has improved. With the active season at hand prices in eastern Kentucky are gradually being advanced, the prepared sizes being about 25c. a ton higher than they were a short time back. Block has gone to $2.25 @ $2.75, with some specialty coals at $3. Lump and egg have advanced to $2 @ $2.25. Such little nut as is produced in the Hazard field is $1.75 @ $2. Mine-run is unchanged at $1.35 @ $1.75; but screenings are up to $1.10 @ $1.25.

In western Kentucky prices are unchanged over the week. A few screenings orders have been taken at 75c., but the market is 80 @ 90c. Mine-run is still weak at $1.10 @ $1.25. Nut is $1.45 @ $1.60; lump and egg, $1.50 @ $1.75; 6-in. block, $1.75 @ $1.85.

Domestic consumers are starting to stock, and retailers, noting a steady advance in prices, are stocking their yards. Industrial consumers are playing safe and ordering steam coal in quantities.

Steam buyers have been fooled this year. They had anticipated 50c. screenings out of eastern Kentucky, but the market has remained at $1 and over. It has been an unusual year in that respect. Part of this has been due to the smaller production of prepared in the union districts, throwing a heavier industrial demand for screenings on the non-union fields. The operators also have shown greater firmness in maintaining markets. Ninety cents has been the lowest price reported for some time, and that occurred only over short periods when embargoes prevented immediate movement north of the Ohio River, which meant unloading in Kentucky. Some good contract business has been placed of late.

### Northwest Trade Perks Up

Dock operators say the situation at Duluth is straightening out satisfactorily. Inquiry is better from dealers in the agricultural districts of Minnesota and North Dakota and they are placing orders for fair tonnages of both bituminous and anthracite. Slightly better bookings are reported also from iron mining companies on the Minnesota ranges in preparation for heavier operations, and better bookings from that quarter are expected in the near future. Ordering of steam coal by industrial concerns over Minnesota is said to be improving.

Demand for anthracite remains slow, due to the high cost of hard coal and an increasing disposition to use Pocahontas and other smokeless substitutes for heating private houses. The trade is no longer able to make use of the scarcity bogey as a rallying cry in soliciting orders, for anthracite customers know that about 575,000 tons of that coal is on the docks. It is to be noted that the movement of anthracite this way from the mines has fallen off during the last few weeks as the mining companies have been shipping to points where that coal was needed to a greater extent.

Forty-one cargoes of coal, including only two of anthracite, were unloaded at the docks last week and nine cargoes of anthracite were reported en route. No delays were experienced in unloading cargoes as they arrived, space having been made through outgoing shipments. Quotations of both hard and soft coal are unchanged but firmer.

Interest in Milwaukee's coal trade is focused upon the anthracite wage imbroglio. Dealers would like to see the anthracite moving from their docks to make room for further receipts, but householders have been slower than usual this year in ordering winter supplies. Better demand is reported, however, and dealers are urging consumers to order without further delay. The receipts of hard coal by cargo thus far this season are about the same as they were at this time last year—nearly 400,000 tons. Dealers advanced anthracite prices 10c. a ton Aug. 1, and raised the price of coke 50c.

### More Mines Open in Southwest

More mines are being opened in Kansas each week, more in anticipation of a heavy fall demand than on present market justification. A slight improvement is noticeable in the domestic market as dealers prepare for the early home demand, but householders are not yet buying. Some activity has begun in Arkansas, some under the 1917 wage scale as well as under the 1924 scale but with modifications of the 1924 contract, while some operators declare they will not reopen their Arkansas mines until they are assured they can be operated uninterruptedly at a lower cost than last year.

In the Colorado market there is a slight improvement in the demand for domestic lump and nut coal, which has resulted in a slight increase in mine operations, which are now averaging about three days a week. From now on a substantial increase in orders for immediate delivery is expected. The price on Dawson (N. M.) domestic lump and fancy egg is $4; fancy nut, $3.75; fancy pea, $3.25; base burner coke, nut size, $6.

The coal market in Utah continues draggy. Winter storage orders are increasing slightly, but they are far behind what they should be for the time of year. There is considerable talk of increasing prices and it is likely that an advance will take place at an early date. Industrial demand for coal is largely confined to the mines and smelters, cement plants and the railroads, but no industry is taking much coal at the present time. The sugar companies should be storing coal on a larger scale right away.

### Record Movement Via Cincinnati Gateway

The rapidly changing front to the Cincinnati market is best shown by the scarcity of offers of tonnage by the wholesalers who had been busiest in putting their coals before buyers for four or five months. And prices have stiffened all along the line.

In the week ending Aug. 1 no less than 14,793 cars of coal passed through the Ohio River gateways, 1,500 more than the peak record made before, or 5,164 cars more than in the corresponding week of last year. Of the grand total 5,164 cars went to the lake, making another record for a week's movement.

The West and Northwest are the best sales spots. Southern and Southeastern points that buy off this market are in a slump. Domestic lump is much firmer in price. While West Virginia prices indicate the same range, more coal is selling around $2.50 than at the low. Southeastern Kentucky producers are making $2.75 the price on their block where they have better grades to offer, though some can still be had at the $2.40 low. Mine-run has stiffened and is in demand while slack and screenings have moved up from 10c. to 20c. Egg sizings are beginning to show a seasonal lack of demand though lake buyers are after 2-in. to the point that it has advanced to a $1.75 low.

Smokeless business has had a refreshing upturn with all lump and egg now firmly held at $3 and most of the direct selling agents asking $3.25. Mine-run is $2 and a shade better where it can be had, and steel and iron plants that did not cover themselves before the leap in demand have to pay from $1.35 to $1.50 for screenings that can be booked. Here and there on this market the report comes that companies are booked up to capacity for the month except for free tonnage held for spot selling.

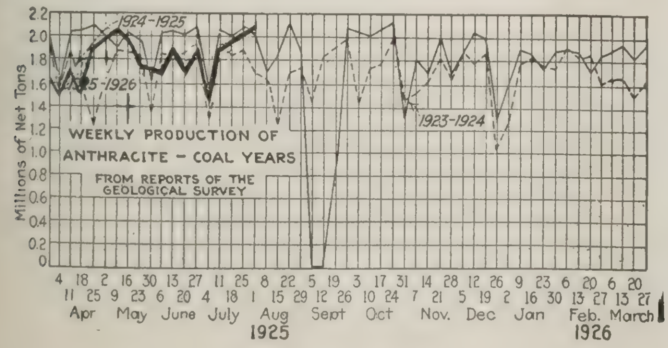
There has been no change in retail prices and river business plugs along as usual.

At Columbus there is a better demand for domestic sizes, retailers buying to replenish low stocks. A majority of orders are for immediate delivery. Householders also are coming into the market with the threat of an anthracite strike. Prices have stiffened materially, especially on the better grades from West Virginia and Kentucky. Ohio mined coals are selling better, although there is no particular increase in price. Smokeless is in good demand and retails at $8 @ $8.50; splints at $7 @ $7.50 and Kentucky block coals at about the same levels. Ohio coals both from the Hocking Valley proper and Pomeroy Bend fields are selling at $6 @ $6.50 delivered.

Little change has taken place in the steam trade, where buying is from hand to mouth. Reserves are only fair, but none of the larger users is showing concern. Contracting is somewhat better, although the larger number of users are buying on the spot market. Distress coal is not being offered to any extent and the regular prices are prevailing on spot shipments.

### Demand Gains Slightly at Pittsburgh

There is practically no change in the Pittsburgh coal market in the last week, but over the past thirty days there probably has been a slight progressive increase in demand —hardly enough to be noticed from one week to the next. It would take a great deal to move prices, there being so many mines operating part time which would be glad to sell more, but prices are as low as they can go without an actual loss to operators.



Predictions are more widespread that demand will increase substantially near future, as demand for domestic usually opens up at about this time of year, though none of consequence has yet been seen. Industrial consumers also are expected to replenish stocks, as they are unusually low.

Save for interest in the possibility of a hard-coal strike the situation at Buffalo has not changed. There is some stiffness on slack, especially the gas slack variety, and the price has gone up a few cents, but that does not indicate any increase of demand. The mines that turn out this coal are shut down largely, they say.

Some of the bituminous interests here are in line for establishing new process coke and briquet processes, but they are all in just the stage when it is forbidden to say anything about them in print.

No direct report of coal consumption is to be had, but it does not appear that there is much, if any, falling off. Factories have kept up well during the summer.

Supplies of coal in the hands of Toronto dealers are larger than usual at this time of the year and coke also is exceptionally plentiful, large stocks having been laid in in anticipation of a strike. Dealers are now finding it increasingly difficult to get orders filled at the mines. The usual fall increase in the price of anthracite went into effect on Aug. 1, several weeks earlier than in recent seasons. Quotations were advanced from $15 to $15.50 and for coke from $12 to $12.50. While a shortage of anthracite when present stocks are exhausted is not unlikely, dealers state that they do not anticipate any difficulty in supplying consumers with coke.

### New England Trade Sags Again

Once again there are indications of weakness in the New England market for steam coal. The settlement or, rather, the postponement of labor troubles in the British coal fields together with increased production in the smokeless districts of West Virginia have forced a few shippers to shade spot prices enough to move coal that was threatening to accumulate. In other words, the pressure of slightly higher prices ten days to a fortnight ago was more than certain operating interests could withstand and now the carefully built structure, the work of many weeks, is likely to fall to the ground. The top level for high-grade Pocahontas and New River mine-run on board vessels at Hampton Roads is understood to be $4.25@$4.35 and it would not be surprising to see quotations back on the May and June basis.

On cars Boston for inland delivery spot figures have slumped from $5.65@$5.75 to $5.40@$5.50, and apparently they will go lower. There is no buying of sufficient volume to support the higher prices that were asked, and in the face of expected arrivals there was bound to be a rectification from a basis that is now seen to have been artificial.

The retail situation in Boston also is affected, and dealers are finding it hard work to preserve their present price of $7.50 per net ton delivered. The impending supervision of mining in the anthracite region is causing reaction here thus far in the bituminous situation.

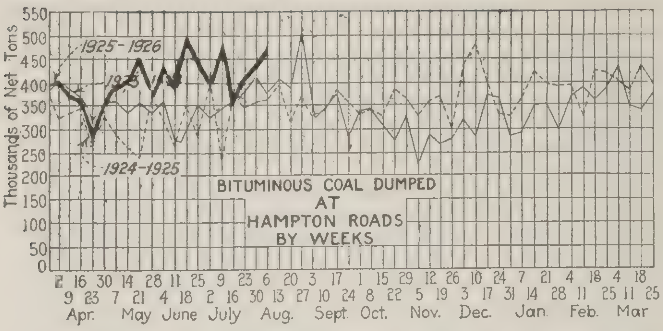
The Pennsylvania coals, both all-rail and by water, are floundering along on the same minimum price basis that has been the case for several months. Only small tonnages are anywhere in request.

### Interest Growing in New York

While there is no rush of orders the bituminous coal market at New York is in fair shape. Buying has picked up and consumers are showing more interest. This is probably due to the prospective suspension of anthracite mining although most producers believe the stoppage will have to continue for more than thirty days to affect the soft-coal industry.

Screened bituminous coal showed a little more activity the latter part of the week, but the orders were not heavy. Some operators and shippers report inquiries regarding short-term contracts, buyers showing a desire to protect themselves in the event of prolonged trouble.

There is a feeling of strength in the Philadelphia soft-coal market, as consumers are coming along with requests for quotations more freely than for some time. A good many of these inquiries are being translated into orders, but without any evidence of a rush. Some fairly good rail-



road business has been closed and the utilities also are ordering better.

The better demand has affected prices only to the extent that everyone is convinced that the present schedule cannot stand much longer. Contract customers also are calling for a better supply on their agreements, and this is helping the market.

While not much tidewater business has turned up of late, the Southern ports are shipping more heavily to Northern points on account of the possibility of anthracite trouble, and it should not be long before this market is affected favorably.

The outstanding feature of the Baltimore bituminous trade is the increased activity in export trade, more than a dozen charters having been made for August loadings from this port. The delivery points for the most part are those which have been taking British coal. The home market continues unexcited and there is not much optimism over the immediate outlook, although some of the dealers expect a considerable increase in the use of soft coal in homes as a result of present prices of anthracite, even should there be no strike of hard-coal workers to further accelerate this demand. Production continues in excess of immediate demands and competition is overkeen. There is somewhat of an increase in demand for industrial storage also and purchasing agents generally are making more inquiries than for some time past.

## Domestic Trade Dull at Birmingham

Conditions at Birmingham have changed very little in the last week. Domestic is as dull as ever, inquiry being exceedingly light in the open market and restrictions on contract deliveries have not been lifted as yet. Current production is hard to dispose of, making it difficult for the mines to handle steam business as promptly as desired, and in some instances barring the taking of additional orders. In view of the fact that there has really been no buying movement in the retail domestic trade so far and the stocking of household fuel is far behind normal at this season, improvement is confidently expected by dealers during this month. Until such relief comes activity in the wholesale market is not expected.

The steam market possibly gained a little more strength during the past week, the number of spot sales having been slightly greater as reported in some quarters. The opening of the ginning season affords a market for some additional tonnage, but otherwise the sources of consumption have not been augmented materially. Inability to dispose of domestic sizes, which hampers operations, is causing activity to be accentuated in the steam trade in a measure not justified by any material increase in requirements. Some of the well-established operations, however, have sufficient business in hand to maintain practically full-time schedules.

Production is running about 350,000 tons per week. Labor supply is in excess of needs and ample to produce the potential capacity of the field if required. Quotations are unchanged.

## Hard Coal Market Lively

Increased demand and a lively market for stove coal continue in New York. The breaking off of wage conferences and the urging by officials to consumers to fill their bins served to stimulate interest and dealers report much more activity with a desire by householders to put in coal. Independent coals are active and the larger companies have sufficient orders ahead to keep their tonnage on the move.

Egg and chestnut are in good demand, the first named following closely after stove in demand. Pea coal also is in good call, the demand showing more strength inland than in the metropolitan area. The steam coals are moving well, barley being out of the market with some producers and sales agents.

At Philadelphia the boom in anthracite is on and most of the shipping companies are nearly sold up on all sizes, with the possible exception of pea, and the local retail trade is not able to fill up its bins as promptly as earlier in the season.

All the producers advanced prices Aug. 1, the companies for the most part making the usual 10c. increase, although independent shippers added from 25 to 50c. a ton. Some of the smaller shippers are asking even more than that, but are not getting it in this market.

Stove is the wanted size, although the stage has not been reached where the local dealer is willing to pay a premium to get it. Egg also is difficult to get, and nut is moving in fairly well. Company shippers have no trouble in disposing of pea, and are even drawing on storage stocks for some of it. The independents still have a little trouble in moving this size promptly. The trade now expects a long suspension of mining.

Steam coals have picked up strongly, with all company shippers taking coal from storage yards to meet the demand. The market has gained such strength that independents are able to get full prices for their output, and before long may be able to get a premium.

Baltimore retailers are urging customers to make sure of protection during the early winter by ordering fuel at once, but the response to date has not been energetic. A number of consumers have found that they can use the better grades of soft coal in emergencies and the introduction of oil burners as a factor in the sitation also is not to be ignored. A hard-coal strike, with a shortage in supply or any further material advance in hard-coal prices at retail will undoubtedly cause the installation of many more oil burners, with a considerable permanent loss of business to both retail dealers and anthracite operators.

At Buffalo the demand for anthracite is good. Consumers have come forward with orders just about fast enough to make it possible to meet them without distress. If demand continues at its present gait the output of coal can be taken up right along and the winter-cellar stocks be pretty well replenished by Sept. 1. Independent coal is doing well and some schedule companies have sold all their small sizes.

At the same time the sale of coke does not improve much. It is hard to get people to believe in it. One shipper says that it will take either a recommendation from a friend who has used it or a shortage of anthracite. The curb price is still $9@$9.50.

Lake shipments of anthracite for the week were only 30,800 tons, being 18,000 to Duluth and Superior, 6,800 tons to Chicago and 6,000 tons to Milwaukee.

## Connellsville Coke Market Dull

Prices are unchanged in the Connellsville coke market and there is no discernible change in the volume of demand. The market is very dull indeed. Hopes are widespread but by no means universal that the coke trade is going to improve, due to a suspension at the anthracite mines. It seems somewhat curious that this is talked of as the hopeful thing, when there is merely a chance, while improvement in the iron and steel industry, which is almost universally predicted, is rarely mentioned as representing a favorable prospect. The explanation probably is that anthracite is a much bigger thing in a tonnage way.

The spot furnace coke market continues to be confined to small lots bought by miscellaneous consumers, who seem to have made up their minds that $2.90 is the price, and no more can be obtained, though many operators talk of having $3 as their asking price. Blast furnaces are not buying at all. The few in operation are covered by contracts.

Spot foundry coke remains at $3.75 to $4.25, buying being light.

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## Freight Car Loadings

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended July 25, 1925 | 1,029,603 | 178,030 |
| Previous week | 1,010,970 | 170,742 |
| Week ended July 26, 1924 | 926,309 | 146,652 |

# Foreign Market And Export News

## British Coal Market Unsettled by Recent Strike Threat

Business in the Welsh coal trade of late has been very unsettled due to the strike of miners threatening for so long. Practically all available supplies have been taken up by contractors, and the collieries have been left with only small parcels at their disposal. There has been no reopening of the pits closed down as unremunerative some time ago. Buyers abroad have sought to anticipate August requirements, and shipments are being made as rapidly as possible. There is a firmer tendency.

In the Newcastle market buyers have been showing anxiety to obtain prompt supplies, the result being that loading turns are filled to the end of the week and prices have risen accordingly, now standing at higher figures all round. Although this is the position for prompt delivery, there is a complete dearth of later business. Contract business is hardly in evidence.

Output by British collieries in the week ended July 25, a cable to *Coal Age* states, totaled 4,525,000 tons, compared with 4,890,000 tons in the preceding week.

## Domestic Calls More Active In French Market

The situation in the French coal market has not essentially changed. Industrial demand continues extremely low but with regard to household fuels, things are certainly looking up.

The North and Pas-de-Calais coal companies have decided to continue until Sept. 15, the allowance for the high cost of living at the rate of 20 per cent. Labor unrest has arisen in the Sarre basin, due partly to the diminished buying power of the franc in the face of the high cost of living in Germany and partly to the waning of France's prestige in the Sarre territory with the evacuation of the Ruhr by the army. This agitation has caused a decrease in output which has obliged the management of the domanial collieries to close a number of pits for several days. The miners have asked an increase in wages and the government has offered 5 per cent, which has been deemed insufficient. Therefore a strike is not unlikely.

During the first eleven days of July the Office des Houillères Sinistrées received 206,300 tons of reparation fuels including 102,900 tons of coal, 95,700 tons of coke and 7,700 tons of lignite briquets, a daily average of about 18,755 tons. Receipts for June were 505,600 tons, including 256,000 tons of coal, 224,400 tons of coke and 24,400 tons of lignite briquets. During the first twenty-one days of July the O.R.C.A. received from the Ruhr 151,411 tons of coke, a daily average of around 7,200 tons.

## Hampton Roads Market Firmer In All Directions

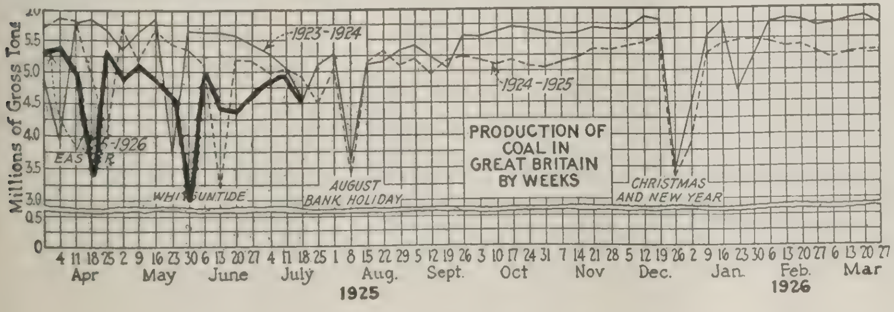
The Hampton Roads market was given some impetus last week by the impending hard-coal strike, and prices were strengthened, although it was largely to the benefit of the operator rather than the shipper. Numerous inquiries were reported and some rather heavy buying was in prospect, although no long contracts were being offered.

Movement of coal to Canadian ports, with scattered shipments to Europe and South America, featured the export trade. August began with great activity at the terminals, and the trade awaits with anxiety the outcome of miners' wage negotiations in the next few weeks. The tone of the market was strong.

## Belgian Market Hampered by Metallurgical Strike

The Belgian coal market, on the whole, shows no improvement. The strike of the metallurgical and structural industries has had an unfavorable effect and the extension of the conflict to the Liége Basin, up till now unaffected, is sure to be prejudicial to the collieries of that district. Of course, industrial grades are hit the hardest and in the Borinage the most men are out of work. In spite of restriction of output stocks amount to around two and a half million tons.

Demand for smalls for brick and cement making is fairly satisfactory, but it is weaker for lime-kiln fuels. There are no stocks of dry duffs in the Charleroi Basin. Household grades are quite firm, particularly dry and anthracitic grades.



### Export Clearances, Week Ended Aug. 8, 1925

| FROM HAMPTON ROADS | Tons |
|---|---|
| For Virgin Islands: | |
| Nor. Str. Wascana, for St. Thomas. | 7,695 |
| For Canada: | |
| Br. Str. Twickenham, for Quebec.. | 7,325 |
| Ital. Str. Severitas, for Montreal.. | 7,292 |
| Ger. Str. Hanna Kimme, for Montreal | 3,470 |
| Br. Str. Cento, for Quebec | 2,468 |
| Nor. Str. Marstenea, for Quebec | 2,684 |
| Amer. Schr. Georgette, for St. Stephens | 672 |
| Br. Str. Blackheath, for Quebec. | 7,474 |
| Br. Str. Manchester Spinner, for Quebec | 7,380 |
| For Newfoundland: | |
| Nor. Str. Thorgerd | 3,644 |
| For Nova Scotia: | |
| Br. Str. Hochelaga, for Sydney | 7,201 |
| For Argentina: | |
| Ital. Str. Maria Adele, for Buenos Aires | 8,953 |
| For Brazil: | |
| Br. Str. Sandsend, for Rio de Janeiro | 4,566 |
| For British West Indies: | |
| Dan. Str. Norlys, for Port of Spain | 5.025 |
| For Cuba: | |
| Dan. Str. Orkild, for Ensenada de Mora | 3,268 |
| Br. Str. Berwindmoor, for Havana. | 9,774 |
| Dan. Str. Nordhavet, for Guayabal. | 4,045 |
| Nor. Str. Lisbeth, for Havana | 2,997 |
| For Italy: | |
| Ital. Str. Maria Enrica, for Porto Ferrajo | 11,012 |
| For Spain: | |
| Ital. Str. Enrichetta, for Gibraltar. | 6,962 |
| For Algeria: | |
| Nor. Str. Fotinia, for Algiers | 7,206 |
| FROM PHILADELPHIA | |
| For Porto Rico: | |
| Br. Str. Isabella, for San Juan | —— |
| FROM BALTIMORE | |
| For Italy: | |
| Ital. Str. Campania, for Genoa | 6,800 |

### Hampton Roads Pier Situation

| N. & W. Piers, Lamberts, Pt.: | July 30 | Aug. 6 |
|---|---|---|
| Cars on hand | 1,613 | 1,579 |
| Tons on hand | 100,449 | 98,707 |
| Tons dumped for week | 158,651 | 155,645 |
| Tonnage waiting | 6,000 | 16,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 859 | 886 |
| Tons on hand | 64,150 | 69,900 |
| Tons dumped for week | 78,400 | 80,070 |
| Tonnage waiting | 7,395 | 40,969 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,789 | 2,565 |
| Tons on hand | 137,485 | 131,730 |
| Tons dumped for week | 160,979 | 176,124 |
| Tonnage waiting | 19,745 | 11,700 |

### Pier and Bunker Prices, Gross Tons

| PIERS | Aug. 1 | Aug. 8† |
|---|---|---|
| Pool 1, New York | $5.25@$5.50 | **$5.25@$5.55** |
| Pool 9, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 10, New York | 4.50@ 4.65 | 4.50@ 4.65 |
| Pool 11, New York | 4.25@ 4.50 | 4.25@ 4.50 |
| Pool 9, Philadelphia | 4.65@ 4.90 | 4.65@ 4.90 |
| Pool 10, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 11, Philadelphia | 4.25@ 4.30 | 4.25@ 4.30 |
| Pool 1, Hamp. Roads. | 4.30 | **4.40** |
| Pool 2, Hamp. Roads. | 4.20 | **4.25** |
| Pools 5-6-7, Hamp. Rds. | 4.10 | **4.15** |
| BUNKERS | | |
| Pool 1, New York | $5.35@$5.65 | **$5.45@$5.75** |
| Pool 9, New York | 4.80@ 5.00 | **4.95@ 5.20** |
| Pool 10, New York | 4.50@ 4.65 | **4.70@ 4.85** |
| Pool 11, New York | 4.25@ 4.50 | **4.45@ 4.70** |
| Pool 9, Philadelphia | 4.80@ 5.05 | 4.80@ 5.05 |
| Pool 10, Philadelphia | 4.60@ 4.80 | 4.60@ 4.80 |
| Pool 11, Philadelphia | 4.45@ 4.65 | 4.45@ 4.65 |
| Pool 1, Hamp. Roads. | 4.40 | **4.50** |
| Pool 2, Hamp. Roads. | 4.25 | **4.35** |
| Pools 5-6-7, Hamp. Rds. | 4.15 | **4.25** |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Aug. 1 | Aug. 8† |
|---|---|---|
| Admiralty, large | 30s. | 30s. |
| Steam smalls | 17s.6d. | 17s.6d. |
| Newcastle: | | |
| Best steams | 18s. | *16s.6d.@17s.* |
| Best gas | 16s. | **25s.** |
| Best bunkers | 18s.6d. | *16s.@18s.6d.* |

†Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

The DeBardeleben Coal Co.'s mine No. 1 at Towley, one of the largest coal mines in Walker County, which was operated but little for some months, is now operating on full time. Many of the coal mines in the Birmingham district are operating from two to four and five days per week, while some are closed down entirely.

The first-aid meet at Birmingham, Oct. 6, will be featured by a demonstration of the explosibility of coal dust. The explosion test will be confined to carbide lamp ignition, it having been decided inadvisable to use the electric arc. At a later date a similar test will be given at Pittsburg, Kan., under the direction of J. J. Forbes, who is the head of the Safety Extension Service, U. S. Bureau of Mines.

## ARKANSAS

C. L. Melton, operator of one of the four open-shop coal mines at Alix, leased the Western Coal & Mining Co. mine No. 6, at Denning, last week and operations under the 1917 scale of wages will be attempted, according to reports. Melton began operations of his mine at Alix with non-union labor in January, 1924. About 35 men are employed and production will total more than 100 tons daily. Melton was the first operator in Arkansas to adopt the open-shop policy. Union miners are preparing to hold a demonstration in protest against opening the mine under non-union conditions.

## COLORADO

The Colorado Fuel & Iron Co. has made a reduction in wages effective Aug. 1. The new scale represents a reduction of approximately 11 per cent from the present which went into effect March 16, 1925, and which was a 20 per cent reduction from the former scale. A company statement issued July 31 said that all company mines in the Walsenburg district had accepted the new reduction and that the Morley mine alone in the Trinidad district, had not. The new scale cuts underground coal diggers from 82c. a ton to 80c. and day men from $6.20 per day to $5.52 per day. The same statement says the Aug. 1 scale is 5 per cent higher than the 1917 scale, on which various competing companies are now operating.

## ILLINOIS

The Chicago, Wilmington & Franklin Coal Co.'s mine No. 1, at Orient, will resume operations Aug. 17 with a force of approximately 1,000 men. Mine No. 18 of the Industrial Coal Co., where operations stopped as a result of the tornado of March 18 last, plans to reopen on Sept. 1, This mine employs 600 men. This mine is at West Frankfort. Crews are now putting the underground plants in condition.

The Missouri Pacific R.R. has filed a petition with the Illinois Commerce Commission for permission to discontinue the regular weekly miners' train from Gorham to Benton. The train, which has been operated for several years, originally was intended for use of coal miners working at the New Bush mines. The increased use of automobiles since the development of hard roads in Illinois, however, has cut the patronage of the train to a point where it is continued at a large loss.

A campaign has been started by coal operators in southern Illinois to induce consumers in that general region, as well as all Illinois institutions supported by taxpayers, to buy Illinois coal. This campaign has been furthered by the Illinois Chamber of Commerce, co-operating with Rotary Clubs throughout the coal belt and with other organizations aiding. The movement was started when a southern Illinois coal operator obtained possession of a call for bids for state institutions in which it was specified that Indiana or Kentucky coal be used. A letter was immediately written to the institution calling attention to the unfairness of this discrimination against the mines of Illinois. which contribute their share to the support of the institutions. A copy also was sent to the Illinois Chamber of Commerce, which body responded stating that it would give co-operation.

The Minork mine resumed work July 24 after a shut down of four months.

A total of $10,727,361 in coal deals including deeds of trust and quit claim deeds, has been recorded at Marion since Jan. 1, 1925, according to Fred Simpson, Recorder of Deeds for Williamson County. Upon the death of Levi P. Zeigler, of Chicago, last year it became necessary for the trustee for his estate to make a quit claim deed for approximately half of the Zeigler Coal & Coke Co.'s holdings, totaling $2,038,612. The property was conveyed to the coal company, as was the remainder of the Leiter interests in the same company, the latter deal involving $2,038,749. Later the Zeigler company made a deed of trust to the Continental and Commercial Trust and Savings Bank of Chicago for $4,000,000. A few weeks ago the Cosgrove-Meehan Coal Co. issued a deed of trust to the Seaboard National Bank of New York for $2,500,000. Recently a deed of trust for $150,000 was recorded in favor of O. W. Lyerle, cashier of the Herrin State Savings Bank by the Sincerity Coal Co. Another recent deal was the sale of the West Virginia Mine and adjacent coal lands to Charles Gent, of Chicago, who represents large Eastern coal interests.

The Cosgrove-Meehan Coal Co. is expending $125,000 on property north of its mine at Panama, in Montgomery County, for a plant to generate all electricity used in the operation of its mine at Panama, which employs 650 men. Thirty acres of ground will be turned into a large lake which will hold 50,000,000 gallons of water, to be supplied by the creek. This will furnish condensing water for the turbines. Exhaust steam, which is now wasted, will be utilized to operate the turbines. A dam 400 ft. long, 150 ft. wide at the base, 16 ft. wide at the top, and 27 ft. high is being constructed.

## INDIANA

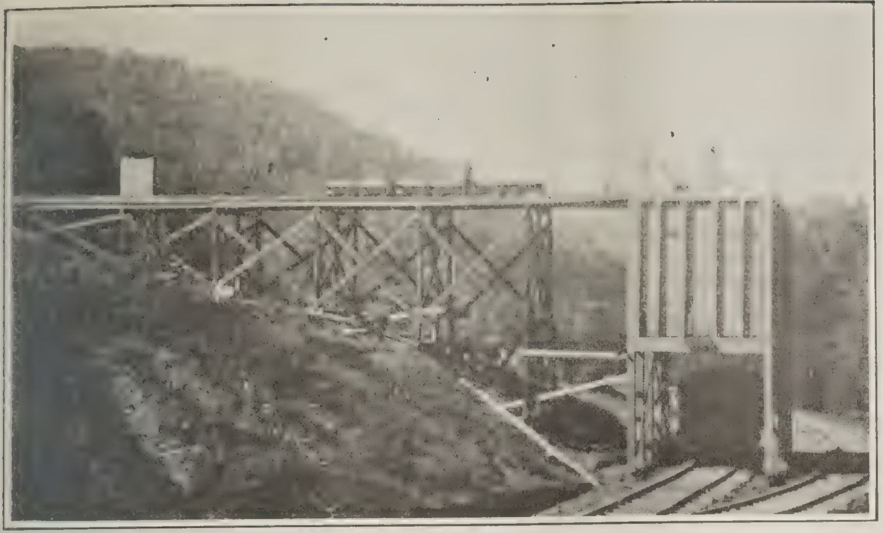
Officials of District No. 11, United Mine Workers, at Terre Haute, have received notice that Judge Claude Smith of the Circuit Court at Princeton, has found the Princeton Coal Co. guilty of violating the state mining law. The suit was filed by the state mine inspection department and the specific charge was that of firing shots while all of the miners were in the mine.

The Radiant Coal Company at Terre Haute, Ind., has filed a preliminary certificate of dissolution with the Secretary of State.

A new tipple and engine room, to take the place of the buildings destroyed by fire several months ago, are being erected by the Bosse Coal Co. and the work is almost completed. The Bosse mine, managed by Walter Korff, is located on the traction line a short distance below Boonville. With the modern improvements made, including an electric hoist, the Bosse Coal Co. is getting ready to start operations on a large scale.

## KANSAS

A demand by attorneys of Kansas coal operators for a trial by jury to determine the facts of compensation cases before their submission to an arbitrator under the Kansas workmen's compensation law was denied by Judge D. H. Woolley, in District Court at Pittsburg, Aug. 3. The judge announced that he



**Tipple and Storage Bin, St. Mihiel Coal Co.**

This simple equipment for run-of-mine coal is located at St. Mihiel, Ky., on the line of the Kentucky & Tennessee Ry. The heavy bin serves to steady the trestle and to make rapid loading possible.

would name arbitrators in the eight cases on which the defense objections were made, and thus complete the record for appeal to the State Supreme Court, where a ruling may be made on the defendants' demand. This action of Judge Woolley followed objections by defense attorneys two weeks before to the submission of compensation cases to arbitrators before the establishment of facts before a jury.

The Hamilton Coal & Mercantile Co. announced Aug. 3 that it proposed on Aug. 10 to reopen its mine No. 10, near Cherokee, in the southeastern Kansas district, which has been closed since April 6. The mine will employ 200 men. James Hamilton, Pittsburg, president of the company, also announced that five mines owned and operated by his company in Arkansas will be reopened this month.

After having been closed down soon after the shaft was sunk in the spring of 1918, No. 3 mine of the Domestic Fuel Co., near Gross, in the southeastern Kansas field, is being electrified in preparation for reopening soon. Officials of the company announced that it will be operated under lease as soon as substitution of electric for steam equipment is completed. The shaft was sunk just as the demand for men for war service began to be felt in labor districts and the difficulty of obtaining workmen was the reason given for closing it before it had begun to produce. It will start with fifty men, the number to be doubled or tripled as underground workings are developed. The mine is on 280 acres of land owned by the Domestic Fuel Co.

The first arbitration through a federal arbitrator of a miner's damage suit in Kansas began July 20, in Pittsburg, before W. P. Dillard, a Fort Scott lawyer, appointed by Judge John C. Pollock in federal court to hear the claim of Charles Warlop against the Western Coal & Mining Co. Warlop asks compensation of $15 a week for eight years for injuries said to have been received in a Western mine. The case was removed from district court to federal court by defense attorneys on the ground that the sum sought exceeded $3,000.

The Pittsburg & Midway Coal Co., which recently assembled a large acreage of coal land in Labette County for the Missouri, Kansas & Texas R.R., has bought ten acres of land near Valeda and Angola for a tipple and other buildings, but denies that work will start soon in the new field.

The Atchison, Topeka & Santa Fe R.R. is said to be obtaining leases on coal land in the vicinity of Coffeyville, through the Cherokee & Pittsburg Coal & Mining Co. Blocking work by the Cherokee & Pittsburg company is south of the tract recently blocked by the Pittsburg & Midway Coal & Mining Co. for the Missouri, Kansas & Texas R.R.

## KENTUCKY

It is reported that in the Democratic primary in Kentucky on Aug. 3 candidates opposing horse racing and favoring a tonnage tax on coal, two issues which have been linked in politics, were defeated all over the state, which today has a Democratic Governor, who is in control of that party. Feeling is that the 1926 legislative session will not be anything like as dangerous from the operators' viewpoint as it was considered a few weeks ago.

The Kentucky Board of Charities and Corrections, operating the various state institutions, which received bids on coal supplies on June 5 placed orders Aug. 4. Buying prices ranged from 90c. to $1 a ton for western Kentucky 1¼-in. screenings, f.o.b., mines, and eastern Kentucky prices were $1 to $1.14 a ton for screenings. The West Kentucky Coal Co., Paducah and Sturgis, received a 100-car order for the Hopkinsville institutions; the Coil Coal Co., Madisonville, got a 75-car order for the Eddyville penitentiary; the former at $1 and the latter at 90c. Ayers & Son, Detroit, for the Liberty Coal & Coke Co., Pineville, obtained contracts for supplying institutions at Frankfort, Lexington, and Lakeland, the price being $1.14 a ton for nut and slack; the Stearns Coal & Lumber Co., Stearns, obtained the Greendale contract, at $1.

The Morganfield Coal & Coke Co. is completing the installation of two new boilers, which will be in operation soon. The company is making other extensive improvements, having erected a new 300-ton coal bin for local trade, and installed two additional pumps. These improvements, which will cost approximately $10,000, are being made preparatory to increasing the production of the mine.

Petition was filed recently in Judge Ruby Lafoon's court at Madisonville by the Hart Coal Co. asking that the Sherwin Coal & Coke Co. be declared bankrupt. Among the creditors of the defendant company are the Curtin Coal Co., the Mineters Coal Co. and Geo. E. Hutchinson & Co. The defendant company owns a mine at Madisonville but has not operated it for some time.

A large acreage of coal land in Bell County has been acquired by the Wallsend Coal Co. of Delaware. The company purchased the property of the old Wallsend Coal Co., and will spend about $60,000 immediately on improvements. Additional acreage was acquired from Judge Louis Apperson, of Mt. Sterling, taking in the coal lands up Dorton's Branch. Other acreage was purchased from Charles Conant and in the Logan estate, in what is known as the Mt. Vincent property.

## MASSACHUSETTS

The Rochester & Pittsburgh Coal & Iron Co. has taken over the Boston office of M. L. Cobb, 10 Post Office Square, who formerly represented the company in that territory. Clarence Cobb, who succeeded his father when the latter died, about ten years ago, has retired. F. E. Clark, who represented the Rochester & Pittsburgh company in Albany for two years, is now in charge of the Boston office. William D. Scofield has taken Mr. Clark's place in Albany. These changes became effective Aug. 1.

## MINNESOTA

The Woodhead Motor Co., of Brainerd, a Ford dealer, is erecting coal sheds for the purpose of handling coal from the Ford mines in Kentucky. This company handled thirty cars of Ford coal last season.

W. H. Godwin, vice-president in charge of sales of the Carnegie Dock & Fuel Co., who was in Duluth last week, predicted that shipments from the docks would show good increases within the next month.

Officials of the Zenith Furnace Co., at Duluth, are counting upon greatly increased sales of domestic coke during the fall and winter months. Substantial stocks of coke are being accumulated to take care of the early trade. The use of coke and buckwheat mixture came into use to some extent in Duluth last winter as a substitute for prepared sizes of anthracite.

**Sawmill and Power House, Stearns Coal & Lumber Co., Stearns, Ky.**

Stearns is the point of junction of the Cincinnati, New Orleans & Texas Pacific (now part of the Southern Ry. system) and the Kentucky & Tennessee R.R. The mines of the Stearns Coal & Lumber Co. are west of Stearns, along the South Fork of the Cumberland River and Rock Creek.

The announcement that W. H. Warner & Co., of Cleveland, had purchased the interest of the Maher Collieries Co. in the Pittsburgh & Ashland Coal & Dock Co., operating a modern dock at Duluth, was noted with interest in trade circles here. The deal is said to have been prompted by the increased movement of West Virginia and Kentucky coals to Duluth.

## MISSOURI

Miners who have been employed in Mine No. 11 at Higbee held a meeting with the operators last week relative to operating the mine on a co-operative plan. The mine was recently purchased by John Italiana. One hundred and seventeen men have been employed in the shaft, but it is understood that conditions have not been good and several men have been laid off on account of lack of demand for the product. The mine's contract with the Missouri, Kansas & Texas R.R. has expired. Although the outlook is discouraging it is thought that arrangements can be made whereby the mine can be operated on a co-operative basis.

## MONTANA

An appeal to the labor men of Missoula and the Missoula public to use Montana-mined coal was the theme of a recent address before the Missoula Trades and Labor council by Stephen Ely, president of the Montana State Federation of Labor. Mr. Ely said that approximately 700,000 tons of coal is shipped into Montana each year for consumption by the Montana public from other states, principally from Utah. Montana coal fields can employ 4,000 or more men when operating on full time. At present half of that number are idle while the remaining 2,000 are forced to work on reduced time because Montana people are burning foreign mined coal.

## NEW YORK

Roy Heyser, general coal purchasing agent for the Semet-Solvay Co., has changed his headquarters from the company's plant in Syracuse to New York City.

## NORTH DAKOTA

A discovery of deeper coal beds has been made at the mines of the Washburn Lignite Coal Co. at Wilton. While sinking a well, a 9-ft. bed was found at a depth of 90 ft. and a 6-ft. bed at 140 ft. The present workings are 11 to 14 ft. thick at 65 ft. depth. Test pits will be sunk to ascertain if the new beds exist in any spread of area.

The Washburn Lignite Coal Co., of Wilton, has gone into court to prevent the state from completing contracts for furnishing fuel to state institutions, with concerns whose bids were higher than the figures of the Washburn company. The policy of the state has been to distribute the business among several firms as a guard against tie-ups of various kinds. The plaintiff company seeks to have all business awarded to it upon which it was the lowest bidder. State officials will resist the case, holding that other factors besides price enter into the matter.

## OHIO

Two eastern Ohio mines of the Clarkson Coal Co., Cleveland, with a daily capacity of 4,500 tons, were to suspend operations last week, it was announced Aug. 6 by A. C. J. Allsain, commissioner for the Pittsburgh Coal Operators' Association. The mines are St. Clairsville and Dillonville. Failure of Ohio and Pennsylvania operators to obtain lower freight rates to compete with southern West Virginia coal is largely responsible for the suspension, Mr. Allsain said. He pointed out that this action would leave but 11 of the 131 eastern Ohio mines operating at capacity.

K. M. Pinaire resigned as assistant secretary of the Pittsburgh Vein Operators Association of Ohio on Aug. 1 to engage in the practice of law.

J. P. Brennan, state purchasing agent, has received requisitions and will open bids soon for about 300,000 tons of nut, pea and slack or run of mine coal for 26 institutions in the state. This will be a winter's supply, and the coal will be all Ohio mined.

About one-half of the miners in the Pomeroy Bend field, which numbered 1,800 in normal times, are now employed. Of the 900 working about 360 are employed by the Pittsburgh Coal Co. and 160 at the Stalter Essex Coal Co. mines, all working on the 1917 scale. In addition co-operative mining at the two operations of the old Maynard Coal Co. and other small mines makes up the balance. No further trouble with union officials has been experienced in the field and miners are seeking employment every day.

## PENNSYLVANIA

Six men were killed and thirteen injured in a gas explosion Aug. 3 at the Dorrance Colliery of the Lehigh Valley Coal Co. It was two hours before the dead and injured could be removed from the scene of the blast. The cause of the explosion has not been ascertained, although it was suggested that blasting operations might have ignited gas collected in that portion of the mine. Reports that a fire followed the explosion were denied by company officials. The shaft was badly damaged.

Eight hundred mine workers at the Greenwood colliery of the Lehigh Coal & Navigation Co., who struck Aug. 1 in protest against the introduction of a time registering system returned to work Aug. 4. The men agreed to place the matter in the hands of the higher officials of the United Mine Workers. No wages are involved in the controversy.

The 600 miners who struck several days ago at the Drifton Colliery of the Lehigh Valley Coal Co. on the claim that grievances were not being adjusted as had been promised, returned to work Aug. 6. The mine committee has been instructed to again take up the matters in dispute with company officials.

The Oliver & Snyder Steel Co. has started to ship coal to the new byproduct plant of that company and affiliated interests in Troy, N. Y., which will be placed in operation as soon as the first shipments arrive there. Approximately 1,250 tons is being shipped daily to the new ovens from the Connellsville district. It is understood the new outlet has permitted the Oliver & Snyder interests to start up an idle mine.

## UTAH

Efforts are being made to have the Bureau of Mines stage its coal-dust explosion demonstration during the three-day meeting of the Rocky Mountain Coal Mining Institute, Aug. 26, 27 and 28, at Price, Carbon County. The dust from the Carbon County field is said to be the most highly explosive in the United States, and its treatment is of special interest. The committee arranging the affair consists of W. J. Reid, of Wattis; Dave Brown, of Spring Canyon, and John M. Jennings, of Hiawatha.

Practically all of the school lands in Uintah Basin are claimed by the government on the ground that the lands were of known mineral character at the time they were acquired. The state is to be sued for their title.

The John Farr Coal Co. and the Williams Coal Co., of Ogden, will supply that city's municipal government with its coal during the coming winter. The Farr company will supply screened slack at $3.90 per ton, and the Williams company, lump coal at $7.

### WEST VIRGINIA

In the recent semi-annual statement of the finances of the United Mine Workers, according to the *United Mine Workers' Journal*, $411,475 was spent in the Kanawha and $124,000 spent in the Fairmont field for relief in the six months ended June 31. W. C. Thompson, secretary of District No. 17, received $22,849.05 as administrative expenses. Attorney T. C. Townsend, chief counsel of the miners in the state, received $8,606.57. A donation of $500 to the Barrackville Disaster Relief Fund also was included.

H. E. Peters, formerly president of Sub District No. 4, District No. 17, United Mine Workers, is ill with tuberculosis at the state sanitarium at Terra Alta. Peters, who came here from Charleston in 1918 with the entrance of the union, was impeached from office.

### WYOMING

Leasing of two tracts of public coal lands in Wyoming has been authorized by the Secretary of the Interior. One of the tracts, located in Carbon County, contains 471 acres. It will be offered for leasing on the petition of Fred D. McMillen, who holds a coal permit on the land. Terms of the lease provide for the payment of a royalty of 10c. per ton, mine-run, on all coal produced, an investment of $50,000 during the first 3 years of the lease and a minimum production of 36,000 tons a year commencing with the fourth year. The other tract in Sheridan County, contains 40 acres and will be offered on the petition of the Sheridan-Wyoming Coal Co. Terms of the lease include the payment of a royalty of 10c. per ton, mine-run, on all coal produced, an investment of $10,000 during the first year of the lease and a minimum output of 4,000 tons a year beginning with the fourth year. The leases will be offered at the local land offices located at Cheyenne and Buffalo, Wyo., respectively.

### ALASKA

E. Schinck, who recently returned to Dawson from a trip to St. Paul, where he attended a meeting of the directors of the Five Fingers Coal Co., reports that plans were made for the future operation of the property. Practically all of the coal used in Dawson comes from the Five Fingers Mine.

### CANADA

Alberta coal has arrived in Toronto under the agreement with the Canadian National Railways for the experimental shipment of 25,000 tons at a special rate of $7 per ton. Owing to strike conditions at the Alberta mines considerable difficulty was encountered in making the first shipments, but it is stated that these obstacles have been overcome, and Charles McCrea, provincial Minister of Mines, who is handling the matter for the province, states that he expects that the full amount of the order will be shipped.

Canadian consumers may be burning coal mined in Australia before the end of the coming winter if the present labor difficulties both in the United States and England cause a shortage, in the opinion of C. D. Patterson, of Sydney. Australian mine owners are already making plans, he told *Coal Age*, to enter the world market in the event of a rise in coal prices. Mr. Patterson will make a survey of the Canadian market and will report to his firm as to the advisability of opening branches in the larger Canadian cities. Coal shipped across the Pacific, he believes, could be laid down in Canada at prices which would enable it to compete with that from the Pennsylvania fields and from England. Such a course, however, is likely to be followed only in the event of a shortage being caused by disputes between operators and miners on this continent.

## Traffic

### Commerce Commission Decisions and Recommendations

Division 4 of the Interstate Commerce Commission released a decision Aug. 1 in Docket 14856, Tioga Coal Co. vs. B. & O. R.R. It finds that the Strouds Creek & Muddlety R.R. is a common carrier. It also finds that rates on coal from mines on that line to interstate destinations are not unreasonable, but are unduly prejudicial to the extent they exceed the rates contemporaneously maintained on like traffic by the defendant to the same destinations from Allingdale, W. Va. The Commission also orders that through routes and joint rates on coal in carloads must be established and maintained by the B. & O. in connection with the Strouds Creek & Muddlety R.R.

This decision has the result of placing the mines on the Strouds Creek R.R. in the Gauley District. The complainants also ask that the B. & O. be required to establish just, reasonable and adequate daily car rating for complainants' mines.

The Commission finds that paragraph 12 of Section 1 of the Interstate Commerce Act requires the trunk line on whom such railroads as the Strouds Creek customarily gets its car supply to maintain reasonable distribution of cars for the transportation of coal. Therefore, the B. & O. is ordered to treat this line as any other line dependent upon it for a car supply. No order is issued in this respect, but it is stated that the B. & O. will be expected to give the same treatment in the matter of car service to this railroad as it does to its own Richwood Branch.

In Docket 15228, Board of Railroad Commissioners of the State of Iowa vs. Alton & Southern, Examiner Wm. A. Disque has recommended that the complaint be dismissed. This docket also embraces 15266, Lehigh Portland Cement Co. vs. A. T. & S. F.; 15299, Hannibal Shippers' Association vs. A. T. & S. F.; 15629, Atlas Portland Cement Co. vs. Burlington; 15860, Dolese Bros. vs. Rock Island.

There was under attack rates on bituminous coal from producing points in Illinois, Indiana and western Kentucky to points in Iowa and to Hannibal, Mo. The examiner finds the rates not unreasonable, unjustly discriminatory nor unduly prejudicial and not in violation of Section 4 of the act. Differentials as among origin groups were not directly involved in any of the cases. Many traffic and commercial organizations and receivers of coal intervened to support the complaints, while coal dock operators at the west bank of Lake Michigan and mine operators in Iowa intervened to oppose the rate reduction sought.

The report of the examiner covers the rate situation in Illinois, Indiana and west Kentucky territory at great length. After carefully reviewing all of the rates he recommends that the Commission dismiss the complaint.

In Docket 15228, Sub. No. 1—Fifth & Ninth Districts Coal Traffic Bureau vs. Santa Fe R.R., Examiner Wm. A. Disque has recommended dismissal. There was involved in this complaint the rates for the transportation of coal from points in the Belleville Group in Illinois to points in Iowa and to Hannibal, Mo.

The examiner finds the rates under attack to be not unreasonable or unduly prejudicial. It was alleged by the complainants that the rates on coal from points in the Belleville Group to points in Iowa in general are unreasonable and unduly prejudicial as compared with the rates from the Springfield Group and other groups in Illinois and western Kentucky to the same destinations. It was also alleged that defendants in many instances restrict the application of joint rates to certain circuitous routes and refuse to establish such rates over certain direct routes from and to the points embraced in the proceedings. This report also embraces Docket 15299, Sub. No. 1, the same complainant versus the B. & O. R.R.

After reviewing this rate structure at length the Examiner concludes by recommending dismissal.

### Indian Creek Case Dismissed

The Interstate Commerce Commission has dismissed complaint in Docket 15742, Indian Creek Coal & Coke Co. vs. Atlantic City Railroad Co. et al., finding that the rates on coal from points on the Indian Creek Valley Ry. to Eastern and New England destinations are not unduly prejudicial. Complaints attacked the rates on the ground that they should not exceed those maintained from the Meyersdale region.

## Obituary

**Joseph F. Dierdorff,** manager of works and chief engineer for the Jeffrey Manufacturing Co., of Columbus, Ohio, died at French Lick recently from Bright's disease superinduced by an operation for appendicitis. He was 49 years of age and had been connected with the Jeffrey Manufacturing Co. for more than 35 years, of which the last 14 years was manager of works. He was one of the best known authorities on mining machinery and conveying equipment in the country. He leaves a wife, two daughters and two brothers.

**Elmer E. McConnoughy,** a former operator in the Jackson (Ohio) district was buried in Dayton, Ohio, late in July. He had put in his life in the coal trade and was well known in southern Ohio and eastern Indiana. For the past five years he represented the Kearns Coal Co., of Cincinnati, in central Ohio. Mr. McConnoughy had been ailing for years and was afflicted with heart trouble.

## Trade Literature

The Truscon Laboratories, Detroit, Mich., recently issued new and revised specifications on all their waterproofings in a 36-page book, size 8½ x 11 in. Each specification is complete with information how to use, quantity required and illustrations. Book A is one in a series of six books.

The Federal Electric Co., Chicago, Ill., has issued a booklet illustrating and describing its **Type A Siren.** Information as to weight, prices and voltage is included.

S. Flory Mfg. Co., Bangor, Pa., has issued catalog No. 39, devoted exclusively to **gasoline hoists**, covering their general specifications and containing lists of standard sizes from 5 to 60 hp.

**Modern Methods in Diesel Engine Building.** Fairbanks, Morse & Co., Chicago, Ill. Bulletin No. 1040. Pp. 32; 8½ x 11 in.; illustrated.

The Lunkenheimer Co., Cincinnati, Ohio, has issued an 8½ x 11 in. catalog describing and illustrating its new line of **Iron Body Bronze Mounted Gate Valves.**

## Coming Meetings

**Rocky Mountain Coal Mining Institute.** Summer meeting, Aug. 26-29 at Price, Utah. Secretary, Benedict Shubart, Denver, Colo.

**American Institute of Mining and Metallurgical Engineers.** 132d meeting, at Salt Lake City, Utah, Aug. 31 to Sept. 3. Secretary, H. Foster Bain, 29 West 39th St., New York City.

**Oklahoma Coal Operators' Association.** Annual meeting, Sept. 10 at McAlester, Okla. Secretary, A. C. Casey, McAlester, Okla.

**New York State Coal Merchants' Association.** Annual convention, Sept. 10-12, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**Association of Iron and Steel Electrical Engineers.** Annual meeting at Philadelphia, Pa., Sept. 14-19. Secretary, John F. Kelly, Empire Bldg., Pittsburgh, Pa.

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries,** Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

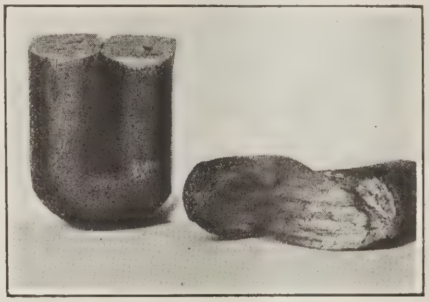
**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City

# New Equipment

## Special Iron Evolved for Mine Car Couplings

Appreciating the need at coal mines for a high grade of wrought iron which in pins, links, draw bars and hitchings on mine cars will withstand severe tension and bending forces, the American Car & Foundry Co., of Chicago, Ill., offers a special product known as "AF iron." This iron has been evolved by a special committee of company engineers after numerous conferences with operating men at the mines and various experiments and tests in mill and forging departments.

The iron has the following physical characteristics: Ultimate tensile strength of not over 59,000 lb. per square inch; yield point of 0.6 of tensile strength; an elongation in 8 in. of 0.28 and a reduction in area of 0.40. Samples of this iron will bend cold through 180 deg. without a sign of rupture. Furthermore, after being nicked, a sample when bent cold through 180 deg. must show a long silky fiber which is free from slag, dirt and coarse crystalline spots. A specimen meeting these specifications after being subjected to this second test is shown on the right of the accompanying illustration. It must meet a third test in which the sample is heated to a forging temperature and cooled; then it is subjected to the procedure outlined above for the second test and must possess the same fibrous structure.

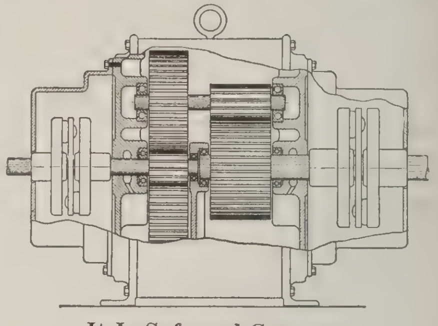


**Tough Iron**

This metal, intended especially for pins, links and drawbars for mine service, is expected to meet severest tests.

## Speed Reducer Is Equipped With Ball Bearings

A new type of spur-gear speed reducer, embodying several features and details of construction not heretofore available in machines of this kind, has recently been placed on the market by the Albaugh-Dover Manufacturing Co., 2100 Marshall Blvd., Chicago, Ill. As may be seen in the accompanying illustration, this machine consists of a train of any desired number of pairs of spur gears all totally inclosed, running in an oil bath and mounted on ball bearings. The flexible couplings attaching this device to the driving motor upon one end and to the shaft of the driven machine upon the other are also inclosed in an auxiliary housing making the complete unit unusually compact.



**It Is Safe and Compact**

This broken-away view illustrates the simplicity of this type of spur gear speed reducer inclosed in a housing which includes safety covers around the flexible couplings.

Gear ratios in this machine may be made as large as strength and good wearing qualities of the teeth will permit. Inasmuch also as any desired number of single reductions or gear pairs may be embodied, the total reduction between driving and driven shaft may be made as large or as small as desired. Carrying all shafts on ball bearings assures the least possible loss of power in useless friction.

Machine design and fabrication at present is undergoing a more or less radical change. A few years ago the exposed train of gears was the all but universal method by which power was transmitted from a high-speed driving to a low-speed driven shaft. Nowadays it is becoming more and more the common practice to supplant these bulky exposed gears with some form of inclosed speed reducer. These devices are far more compact, less noisy and more economical of power than the older gear trains.

## Recent Patents

**Weighing Apparatus for Powdered Fuel;** 1,538,115. Fritz Hoving, Chicago, Ill., assignor to Raymond Bros. Engineering Co., Chicago, Ill. May 19, 1925. Filed May 22, 1922; serial No. 562,854.

**Float - and - Sink Testing Apparatus;** 1,538,626. George R. Delamater, Lakewood, Ohio. May 19, 1925. Filed April 26, 1924; serial No. 709,286.

**Mining Machine;** 1,538,685. Frank Cartlidge, Cincinnati, Ohio, assignor to Sullivan Machinery Co., Chicago, Ill. May 19, 1925. Original application filed June 5, 1916; serial No. 101,687. Divided and this application filed June 25, 1924; serial No. 722,372.

**Apparatus for Localizing and Quenching Explosions in Mines;** 1,539,091. Arnold Krantz, Gelsenkirchen, Germany. May 26, 1925. Filed March 12, 1924; serial No. 698,814.

**Power Coal Shovel;** 1,539,130. Oswald Luschnig, Nokomis, Ill. May 26, 1925. Filed Feb. 28, 1925; serial No. 12,308.

**Continuous Rotary Dump;** 1,539,205. Erskine Ramsay, Birmingham, Ala. May 26, 1925. Filed Sept. 5, 1922; serial No. 586,163.

**Rock and Coal Dust Determining Cabinet;** 1,539,657. A. C. Fieldner, Pittsburgh, Pa. May 26, 1925. Filed July 18, 1924; serial No. 726,884.

COAL AGE

McGraw-Hill Company, Inc.
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## Industry Shifts Again

BY KEEPING UP the railroad rates on anthracite and by the prescription of joint rates on prepared sizes of low-volatile bituminous coal the Interstate Commerce Commission has greatly relieved the minds of those citizens who were perplexed as to what they would do in case of an anthracite strike. The hard-coal operators have reason to be alarmed. Fuels once established have a way of "staying put." It is the first step that counts in many cases.

Having learned how to handle a new fuel, having accustomed oneself to its disadvantages—all fuels have them—the consumer does not usually go back. It is not cheering to anthracite operators to read in the commissioners' report what they must well know that approximately eight hundred government buildings in or near Washington that were heated by the combustion of anthracite are now kept warm by the use of low-volatile bituminous coal. It appears as if the recent decision of the Interstate Commerce Commission might put a crimp in the anthracite business from which it will never recover.

As for the union it must look with distress at the possibility of more business going to the non-union regions and leaving the highly unionized anthracite field. It must dread the loss of the strike, for the public will now not be alarmed, and the panic on which the union counted will not occur. The operator may be compelled to fight the battle through, for the public will not care whether the anthracite mines work or remain idle. They will make shift either way.

So now the union will grow weak just where it is strongest, namely, in the anthracite region. It is a hard life that of union leader and union man these days, but one must say that both make a bold front in a losing cause.

Inflation of the industry will be the outcome of the decision, for some of the regions favored are not equal to meeting the needs of the new markets and most of them are insufficiently equipped to supply prepared sizes. New tipples and a revamping of old ones will be the natural result. All the many shifts in the coal industry cause inflation. Every newly developed field, every strike, every unfair wage contract, every revised freight rate does its part, and it seems likely that this new freight decision will with the Jacksonville agreement do much to build up West Virginia.

## Coaxing the Ovens Back to the Mines

WHEN THE OVENS were wasteful, black and smoky, they were always located at the mines. Now that they are efficient and make less smoke they have moved over to industrial centers and seem likely to stay there because it is expensive to pipe gas long distances and any process of coking or low-temperature distillation makes a large quantity of gas available.

But what is important is that we, who have seen the coking industry move rapidly from mining centers, realize that when conditions favor they may come back and perhaps be operated by the mining companies. The ovens at Béthune, France, point to that conclusion. The Companie des Mines de Béthune is making alcohol and ammonia out of the ethylene and hydrogen respectively found in coke-oven gas.

In making the first the ethylene is combined with sulphuric acid to form sulphovinic acid which is then treated with steam. As a result, alcohol and sulphuric acid are formed; by the use of which latter the process can be repeated indefinitely. That ethylene is found only in small quantity in the gas is a disadvantage but it can be concentrated to from 20 to 30 per cent so that it will act readily on the sulphuric acid which is further is activated by the admixture of sulphovinic-acid.

It is interesting to note that this company also manufactures synthetic ammonia by means of the hydrogen in its coke-oven gases using the Claude method. It is in the cooling process by which the hydrogen is concentrated that the ethylene is removed, benzol, ethylene, methane, carbon monoxide and many other hydrocarbons being extracted at the several stages.

From the coal mines will come in the future many of the most important of our industrial products, and at the coal mines will the process be elaborated. Apparently Europe, in *this* chemical development, as in others, is taking the lead.

## Who Has the Broken Leg?

READING the newspapers we learn that the coal industry has a harmful strike habit, which being interpreted in the light of facts means that the miners in the industry have made striking a biennial practice. A story goes that there were twins who shared all things in common and when one fell and fractured a limb, the other proudly announced "We-uns have a broken leg."

In like manner the coal industry, which is not one but two persons, operator and miner, is said to have aggregately the strike habit and to be grievously in need of a cure. But if in the study of disease we do not go so far as to study which of the twins is in need of treatment the curative action is not likely to make any progress. The public should ferret into this deep subject a little further and arrive at the conclusion, as to which person it is that has the broken leg. The formula in surgery runs: Find whose leg and which is broken and mend that. Quite simple and obvious, it is true, but important.

In the instance now before the country the anthracite operator wants arbitration, no suspension and a long contract with revisions made by some competent authority whenever occasion demands it, and it is the miner who wants a strike or, as he prefers to term it, a suspension. But the public groups them both together and treats them both alike with condemnation. They both have, to quote the public, "the strike habit," as both the twins in common possession had a broken leg.

In the early years of the past century, France had the war habit. Presumably our ancestors put it generally as we do and said that, to *Europe*, war was a second nature for we like ever to generalize, recognizing that it saves thought. The French won wars repeatedly; their legions invaded nearly every European land and with success until defeats in Russia and at Waterloo occurred, and the war habit for a while, at least, ended. A Waterloo would end the the strike habit for the miners. They have won so long that they expect their leaders to win more and more ground for them. The public has always given way to them, and they expect to consolidate their gains and press forward year by year. In time they will prove that a high order of skill is needed in the industry by the high rate of pay always conceded to them. They will prove also its risk by the fact that the work is well paid. But, as has been said, a setback or two will kill the strike habit, and the industry will be relieved of its broken leg.

As it has been the public which has granted the repeated increases and has given way every time there was a demand, therefore, the public must be blamed for the leg fracture and from the public should come the cure.

The wrong-headed are insisting that the operators and miners are in collusion to raise wages and to put up prices. After the Pinchot settlement increasing wages 10 per cent, company coal of domestic sizes rose from $8.18 to $9. There was no profit in such a small increase. No one can say the Pinchot award was used as an excuse for profiteering. Just the reverse, it was a heavy burden on coal-company finances.

But if the public desires still to believe in this collusion, and no one can argue satisfactorily with the skeptical, let it call on the miners for arbitration and no suspension. Then the operators, who they say have the strike habit and want a strike, will be fooled and everyone will be happy. Let the public take the anthracite operators at their word and give them arbitration. If they really want a strike and have shouted "Peace" just to mislead us, they will be truly unhappy when the public takes them at their word. And when the operators are unhappy every one rejoices. This is the way to tantalize them; give them what they ask.

## Is the Miner a Skilled Workman?

"HIGH WAGES for skilled men" is one of the slogans of the mine worker. It is true that there are men in the mines who justifiably may be termed skilled, but they have little use for their talent. The ordinary mechanic—carpenter, mason or machinist—can and does read plans and complicated drawings with ease and accuracy but the miner is under no such necessity. He may see a map hanging in the foreman's office as he goes to his work for the first time. He probably does not examine it, and in most cases would not understand it if he did.

If in any special plan provided there is any degree of complication such as the laying out of a curve or the hanging of a trolley wire many a foreman would look at the "picture" more or less askance and would wonder what it all meant. To the miner it would be even more of an enigma.

The man in the heading or room merely drives in the direction of the sights and sometimes has the incidence of these marked on the face for him by a man specially appointed. He makes the room so many "shovels" wide and he lays the track—if he does lay it—with a simple gage. He does not even attempt to make a smooth rib as the early, careful, but often wholly illiterate, miners from Great Britain used to do with such marvelous precision in the early days of our coal industry. Of art and science the ordinary miner of today has none.

Many a carpenter, mason or mechanic can handle his T-square, triangle and ruling pen, can design a building and then erect it. His ideas of architectural beauty may be feeble, but his building usually suits the needs and even the ideals of his clients. Too much has been written of the skill of the miner. All that can be said of many of them is that after much instruction they cannot even set a prop when it is needed, bring down the coal without creating an excess of slack, or load a hole in a safe and lawful manner. Many are not even desirous of being skillful.

## The Power of Sentiment

IT IS ALMOST amazing to what an extent the everyday life of most human beings is controlled, dominated and governed by sentiment and habit. Just as the honey-laden bee yearns for its hive, just as the carrier pigeon turns unerringly toward its beloved dovecote, just as the heart of the Scot longs for the heather covered hills of native Scotia, so the soul of the ordinary individual, consciously or unconsciously, delights in the environment of its accustomed habitat and the memories of the days that are gone. Every coal company opening a new mine in a new field suffers from this cause and for years the labor turnover is unusually high.

Not long ago a certain coal concern opened an isolated mine in the Middle West, drawing at least the nucleus of its labor force from some of its older operations. Everything looked propitious. Natural conditions were favorable; the housing and educational facilities provided, far exceeded those available at the older plant. After a year or two of operation, however, it was found that one by one the men had drifted back to the place from whence they came, in many, if not most, instances there accepting positions and wages materially inferior to those available at the newer development.

Reason for this exodus was carefully sought, but for a long time without avail. At length an old miner solved the mystery when he remarked—"You ain't got no cemetery here."

In the sense in which this man used it, the word "cemetery" means something more than merely a suitable place for the interment of the dead—he meant also the traditions and memories that hover around the locality where acquaintances and loved ones have been laid to rest and the prospect, dear to every human, that when his own time shall come, he also may be laid away "with the bones of his fathers."

From the business standpoint, this difficulty of the coal producer is hard to surmount. Any suitable piece of ground may be set apart, designated and dedicated as a burial place, but it takes more than this to make a cemetery. In the sense in which the old miner used the word, a real cemetery can only be attained when time and the memory of those there interred shall have cast a halo of sentiment about the entire locality.

# Edgewater Mine Produces Large Output of Washed Coal Under Adverse Conditions

## Local Faults Divide Workings Into Sections at Different Levels—Electrification Is Complete Except for Hoisting—Steam-Driven Stand-bys Are Kept Ready for Emergencies

**By Robert Hamilton**

Consulting Engineer, Tennessee Coal, Iron & R.R. Co.,
Birmingham, Ala.

NEAR THE LOWER end of the Warrior coal basin in Alabama lies the Edgewater mine of the Tennessee Coal, Iron & R.R. Co. This operation produces more than a million tons of washed coal annually from a single seam so faulted that coal is mined on three levels and hauled to one main shaft for skip hoisting. These natural conditions divide the mine into sections and contribute to the difficulty of getting out coal, but sound methods, good equipment and close supervision have combined to raise extraction to 95 per cent. The performance of the mine and the substantiality of construction on the property and about the Edgewater community make the operation one of Alabama's striking coal properties.

Edgewater is approximately 12 miles west of Birmingham and three from Ensley where the chief furnaces and mills of the company are located. An interworks railroad connects this and the various other mines of the company with its industrial works including the byproduct ovens where most of the mine product is made into coke.

At this mine the coal measure worked is the Pratt seam well known for its excellent coking qualities. An average section of this measure would be about as follows: Top, sandstone or slate, coal 6-in., slate 2-in., coal 44-in., slate 6-in., coal 11-in., bottom, hard clay. The total height of this bed is thus 69 in., of which 61 in. is clean coal with 8 in. of slate and parting.

Six thousand acres lie tributary to this mine in which after 13 years of operation there remains 36,000,000 tons yet to be recovered. This mine is divided into three sections, separated by faults, near one of which (the Camp Branch) the hoisting shaft is located. Here the dislocation amounts to 147 ft., a rock tunnel connecting the shaft to the workings on the upper level. On the main east entry another rock tunnel is driven to the lowest level, the dislocation at this point being 55 ft. A small, double-drum, motor-driven hoist hauls the coal through this tunnel to a side track on the main east lower level.

Dislocation in the fault passing near the shaft amounts to nothing at the southern barrier pillar. From this point in a distance of 6,000 ft., it gradually increases to 172 ft. In the next 8,000 ft. the average throw amounts to about 100 ft. At this point this fault subdivides into five separate dislocations and disappears entirely within the next 1,000 ft.

Such faults not only change the vertical location of the coal but in many instances alter the line of dip. Thus the first south entry on the upper level slopes ½ per cent to the southward, whereas the main south entry on the lower level rises 1 per cent to the south.

All workings are on the room-and-pillar plan with entries either singe or double as local conditions may dictate. Rooms are driven 35 ft. wide and double tracked. The width of pillars is determined by the depth of the coal; when this is not more than 350 ft. first working must not exceed 50 per cent of the total area. As greater depth is attained the size of the pillars is increased to carry the additional burden and permit removal of the pillars without loss. It is the general practice to draw both room and entry pillars retreating as soon as room work is completed.

Electric undercutters are employed on all room and

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The headpiece shows a general view of the upperworks at the Edgewater mine. The valley of the stream that runs past this plant is more or less subject to overflow so that all dwellings must be placed on higher ground. None of them, therefore, appears in this view.

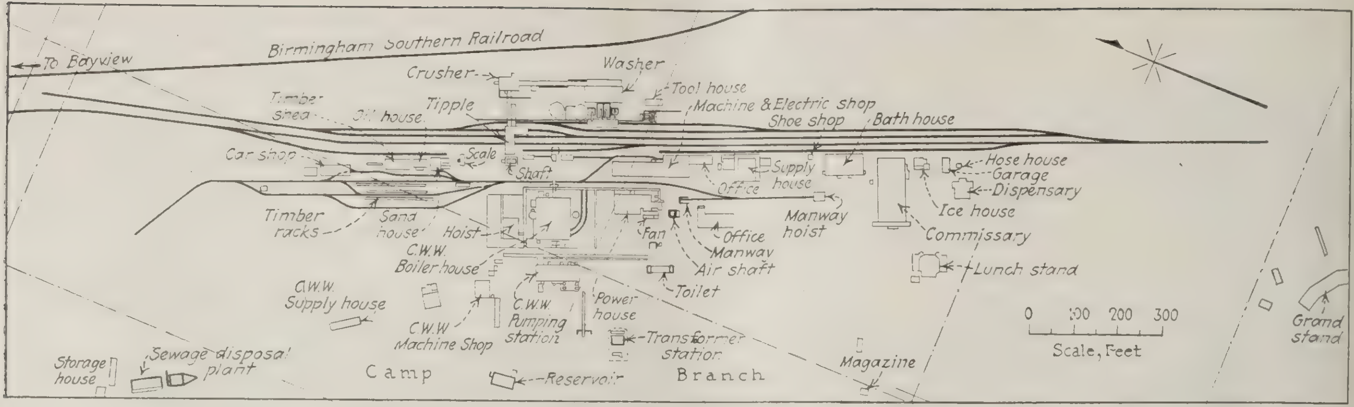


**Fig. 1—General Layout of Edgewater Surface Plant**

This shows the arrangement of buildings railroad tracks and the like. It will be noted that the shaft is on one side of the tracks and the washery on the other. While the boiler plant and pumping station are not considered as forming a part of the mine plant yet steam is furnished for operation of the main hoist.

entry work and, when roof conditions will permit, on pillar drawing as well. Timbers in rooms are set in rows 4 ft. apart each way and must be kept within 4 ft. of the working face. All mining machines are equipped with spraying heads and before the coal is shot the entire face is wet down with a garden hose by men employed for that purpose.

Inherent moisture in this coal normally amounts to 3.33 per cent. Samples taken daily for a month after the coal was crushed preparatory to washing showed that the spraying and wetting down of the face increased the moisture content of the entire output 1.84 per cent, making a total of 5.17 per cent.

Normally the coal is loaded and delivered on the entry by the miner. In many places, however, local grades against the loads are too steep for manual labor in which case the cars are moved to and from the face by company men who employ a small self-propelled electric crab car as shown in one of the accompanying illustrations. This machine moves along the entry and can either deliver the loads at the room necks or make them up into trips ready for the haulage locomotive.

In his work the mine foreman is assisted by a number of section foremen each of whom must hold a fire boss' certificate. Each such section foreman has about 50 men under his control. Particular care is exercised over miners who may be engaged in drawing room or entry pillars. This close supervision is responsible for a recovery amounting to fully 95 per cent. The mine foreman is provided with an underground office where he can meet the section foremen and fire bosses and from which he issues instructions. A first-aid room where, through periodic inspection, all necessary medical equipment is kept in first class condition, is also provided.

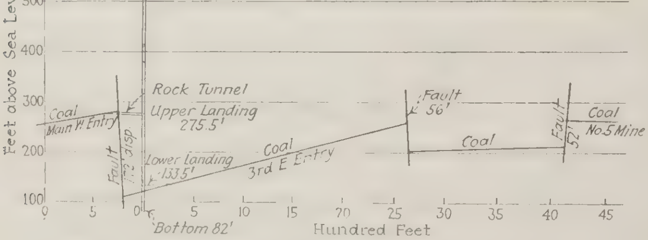


**Fig. 2—Cross-Section of Shaft and Coal Bed**

This shows how the mine is divided naturally into three sections by faults. Not only are underground operations thus cut up by nature but the pitch of the grades varies considerably because of these displacements of the measures.

Mine cars in service at this operation are of the solid body type equipped with 14-in. roller-bearing wheels. They are 8 ft. 9 in. long over all, 4 ft. 3 in. wide and weigh approximately 1,600 lb. The average load carried by these cars is 2,800 lb. and the number in service averages 1,050. The axles extend 2 in. beyond the wheel hubs and the cars are held in the revolving dump by these projecting axle ends instead of by gripping the top of the wheels as is common practice. The rings or hand holds on the ends of the cars are somewhat of an innovation. They were installed originally as a safety precaution in mines where there was but small clearance beyond car and roof. Where the miner delivers the loaded car at the entry, however, they have proven highly advantageous when crossing switches. Consequently they have been adopted generally throughout the mines of the Tennessee company.

On the lower level of this mine, eleven 8-ton electric locomotives are used, operating on 250-volt direct current at a speed of 6 m.p.h. They are equipped with 40-hp. motors. Partings are provided at suitable points from which the coal is hauled in "through" trips of 20 cars each to the side track at the shaft bottom. All loaded trips from both north and south main entries are delivered on the south side of the shaft, a runaround being provided.

On the upper level, loads are delivered to a side track on the main west entry at the second south entry. From here 20-car trips are hauled to the shaft bottom by a double-track endless-rope system. Twelve 8-ton mine locomotives are in use on this level.

At the shaft bottom all cars are uncoupled and weighed separately. Their contents are discharged in a three-compartment, gravity-operated revolving dump. Six cars may be and usually are in this dump at one time—two loads and four empties. One-third of a revolution is sufficient to dump a pair of loads. Coal from the dump enters an equalizing bin of approximately 40 tons capacity from which it moves by gravity to a measuring bin of 6 tons capacity or sufficient to fill one skip. Movement of the coal from bin to skip is controlled by two hydraulically-operated gates. These in turn are controlled by a 4-way valve which insures closure of the upper gate before the lower one can be opened. A small winch is provided for manipulating these gates by hand in case of emergency. This is rarely called into use, however. One man loads the skips and does all signaling to the hoist engineer.

Arrangements on the upper level are similar to those on the lower except that an additional kickback and car haul are necessary to control the movement of the empties. On Aug. 10, 1922, 6,200 tons were hoisted in two shifts. Of this total, 3,722 tons were produced on the day turn and 2,478 tons on the night shift. These are averages of 414 and 275 tons per hour, respectively.

All mine tracks are laid to 36-in. gage. All main entries are furnished with 60-lb. rails supported by steel tie plates and laid on 5 x 6-in. creosoted pine ties. No. 4 reinforced manganese steel frogs and weighted switches are employed generally on all turnouts except those in the vicinity of the shaft bottom where a few No. 6 frogs are used. Entry track is graded carefully and ample clearance provided on one side for the passage of employees.

Room entries are laid with 40-lb. steel rail on 5 x 6-in. untreated ties protected by steel tie plates. On room turnouts No. 2 plate frogs are used. Room entry track is only graded where local dips are encountered and natural grades are too heavy for economical operation. Rooms are double tracked with 16-lb. rail.

So far as possible this mine is ventilated on the split system. In extensive workings such as these, where the coal is produced at points a long distance from the shaft bottom, it is customary for the sake of safety to drive rock tunnels to the surface which serve as escapeways. As a rule these are 7 x 12 ft. in cross-section and are driven on a 30-deg. pitch.

Three such escapeways are available from the upper level of this mine. One is located at the third south entry off the main west entry, one is near the fifth north entry while the third is known as No. 8 escapeway and is located at the extreme southern end of the workings. An opening is also provided through the barrier pillar to the Bay View mine. This is located at the face of the second north entry and serves both operations. Under all conditions this opening is sealed.

To accomplish this seal two concrete partitions have been built, each 6 ft. thick. They are located 6 ft. apart. In each an opening 24-in. in diameter is left. A 3-in. shaft with four steel disks keyed to it, that is, one disk on each side of each partition, passes through both concrete walls. Two-foot circular openings are provided in each disk and the disks arranged in pairs, that is the openings in the two disks on opposite sides of each bulkhead are in line with each other but at an angle of 180 deg. with the openings in the other pair. As all disks are keyed rigidly to a common shaft they all turn together. This arrangement assures closure of the opening through the seal at all times yet permits the ready passage of men.

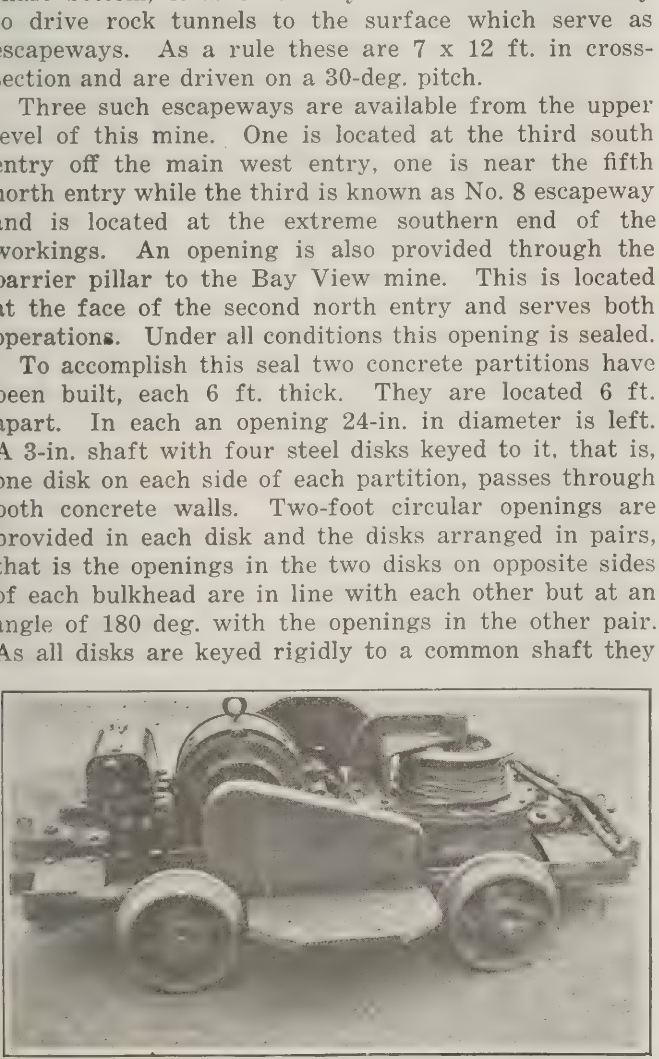


Fig. 3—Electrically Driven Crab Car

Were grades in the rooms are too steep for the cars to be moved by hand this crab is employed. The cable may either pull its load direct or it may be led around guide blocks or sheaves.

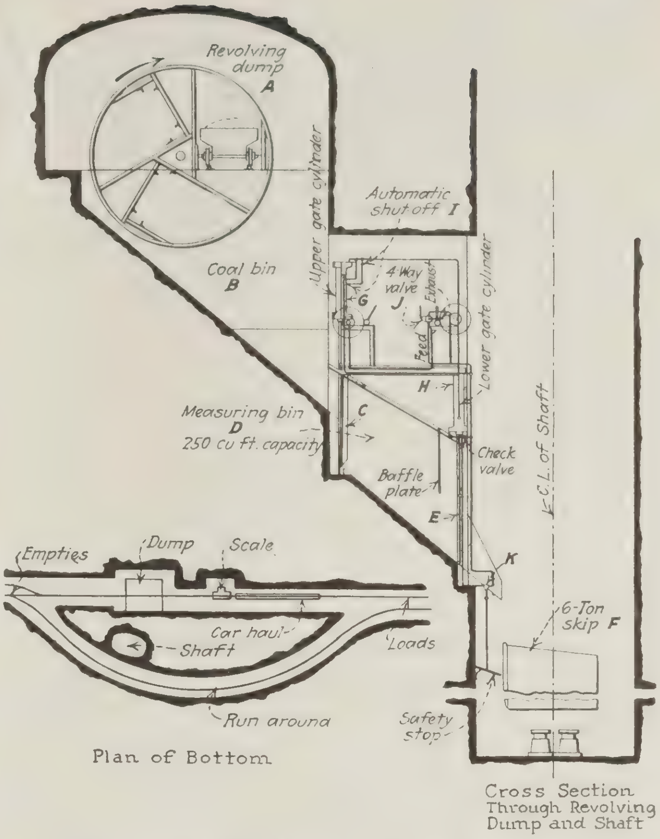


Fig. 4—Section Through Dump, Bin and Shaft

From the dump the coal slides into the measuring bin and thence into the skip. Inasmuch as all lump coal is crushed before going to the washery no particular pains are taken to prevent degradation.

The ventilating fan serving the upper level is located on the third south entry escapeway 4,500 ft. southwest of the shaft. It is of the half-casing, double-inlet, reversible type, 8 ft. in diameter and 3 ft. 6 in. wide. It now produces 120,000 cu.ft. of air per minute against a 4-in. water gage. This machine normally is belted to a 125-hp. motor. A second machine of like size but operated on direct current is held in reserve and may be started up at any time. As originally installed, both these machines were operated on alternating current—one motor on 60 and the other on 25 cycles. This arrangement did not prove entirely satisfactory inasmuch as during heavy electrical storms both lines would be disabled with the result that the mine would be closed down for days.

In order to forestall this contingency the size of the 250-volt main feeder line was somewhat increased and a direct current motor installed. A 400-kw., 250-volt, steam driven generator is kept under steam at all times ready for any emergency.

Intakes for the upper level are the escapeway near the fifth north and the manway near the main shaft.

An 18 x 7-ft. Guibal type of fan ventilates the lower level. This machine originally was driven by steam but is now belt-connected to two 150-hp. motors, one a 60-cycle a.c. and the other a 250-volt d.c. machine. It is installed at the air shaft, a short distance from the main hoisting shaft and now produces 110,000 cu.ft. of air per minute against a 3.4-in. water gage.

Fig. 5 shows the type of air crossing or overcast that has been adopted as standard by this company.

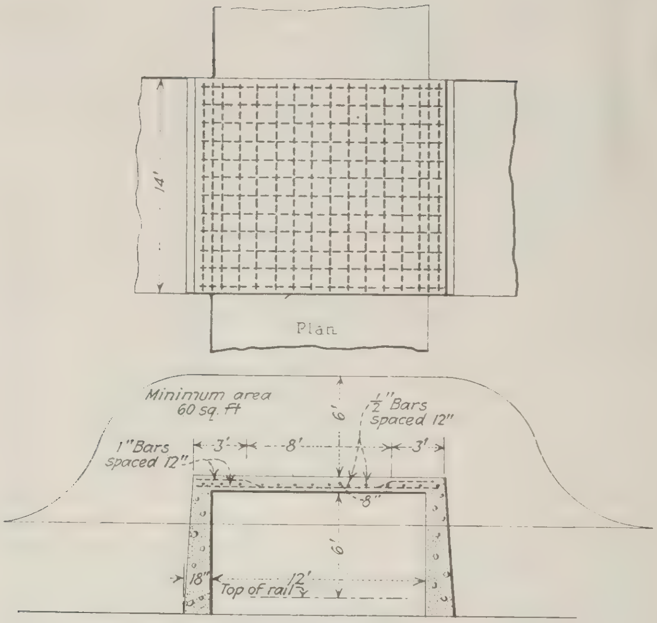


**Fig. 5—Plan and Section of an Overcast**

This design of overcast has been made standard in this company's mines. The sides or walls are of plain and the top of reinforced concrete. This makes a finished job that is both permanent and efficient.

All mine doors are built to standard size and installed in duplicate. All haulage roads are sprayed throughout their entire length at least every other day. Air samples are taken in each return at least weekly and tested for methane. Intakes for the lower level are the main shaft and the escapeway at the second north entry approximately one mile north of the main shaft.

The main pumping station is located on the lower level near the main shaft. The equipment consists of two centrifugal pumps of 2,500-gal. per minute capacity, direct connected to 400-hp., 2,300-volt, alternating-current motors operating at 1,200 r.p.m.; also two 6 x 18-in. triplex plunger pumps backgeared to 40-hp. direct-current motors. These latter machines supply the coal washery, the spray lines and the bin gate operating mechanism at the shaft bottom. Fifteen small gathering pumps are scattered throughout the mine at points where gravity drainage cannot be obtained.

During 1924, 445,000,000 gal. of water was pumped from this mine. This is equal to approximately 12 per cent of the total precipitation over the working area. It amounts to an average of 1.6 tons of water per ton of coal produced.

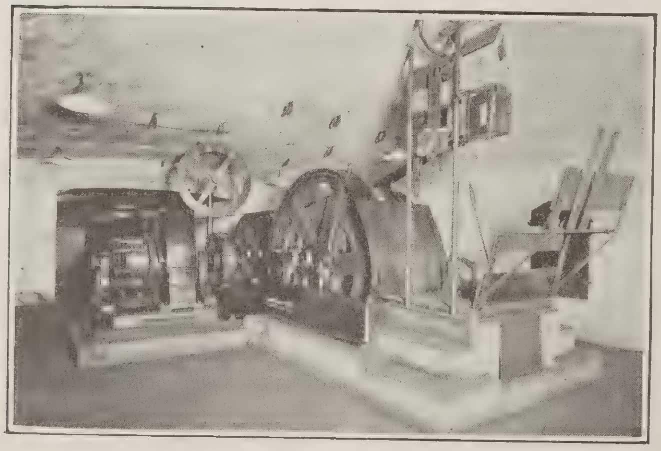


**Fig. 6—Endless Rope Hoist Underground**

This machine hauls the cars in trips up the pitch of the upper level to the shaft or to a point from which they will gravitate to the shaft.

The main shaft is of oval cross-section with major and minor diameters of 21 and 12 ft. respectively. It is concrete lined throughout and the buntons and guides are steel H-shapes. Its depth from the surface to the upper-level skip landing is 294 ft. while to the lower-level landing it is 427 ft. The dumping point on the headframe is 73 ft. above the surface, making total hoists from upper and lower levels of 367 and 500 ft. respectively.

The self-dumping skip has a capacity of 6 tons and, when empty, weighs approximately an equal amount. The headframe is of steel construction throughout and has a total height of 102 ft. From the supply bin of approximately 40 tons capacity, the coal is fed to the shaking screens by a reciprocating plate feeder.

The screens are arranged for a normal delivery of all coal to the washing plant. When necessary, however, run-of-mine, nut and slack and hand-picked lump can be loaded onto railroad cars. The upper deck of the screen is fitted with 3-in. perforations the undersize feeding direct to the belt conveyor leading to the washery; the oversize passes over a picking table and thence either by chute to railroad cars or by conveyor to the washery. In this latter case the larger coal is placed on top of the smaller material, only one conveyor extending to the washery.

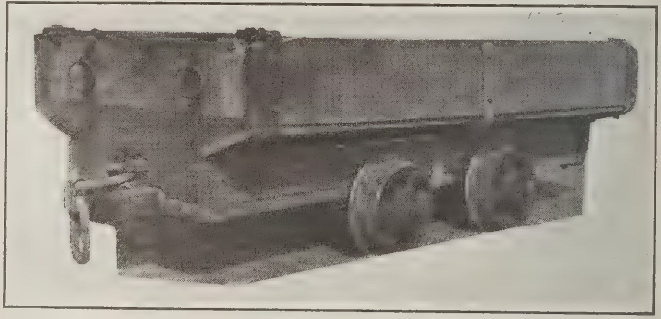


**Fig. 7—Mine Car Used at Edgewater**

Two details of this car are somewhat unusual. Two rings are attached to the solid end gates near the top. These serve as handholds and make it unnecessary for the miner to place his hands on top of the box when moving the car. The axles also project about 2 in. farther from the wheel hubs than they do in most cars. This projection furnishes a means of holding the car in the rotary dump.

The air shaft is 380 ft. south of the hoisting shaft and is sunk to the lower level with a short rock tunnel connecting it to the upper level. This shaft is circular and 11 ft. in diameter. It is concreted down to the solid rock, below which point it is devoid of all lining and all obstructions, being used for ventilation only. The concrete collar of this shaft is extended above the surface and provided with steel explosion doors. The air duct leading to the fan is below the surface and is concrete lined.

From a point near the air shaft a 7 x 12-ft. rock tunnel on a 30-deg. pitch is driven to the lower level. It is connected to the upper level by a short lateral tunnel and is used for lowering timber and other supplies. A concrete stairway separated from the track by an iron hand rail permits entrance and egress of employees. This slope is electrically lighted throughout.

At the entrance of this passage stands the checkhouse. Here record is kept of all employees entering or leaving the mine. Special checks are kept on hand ready for the use of company officials or visitors not on the mine register as no one is permitted to enter

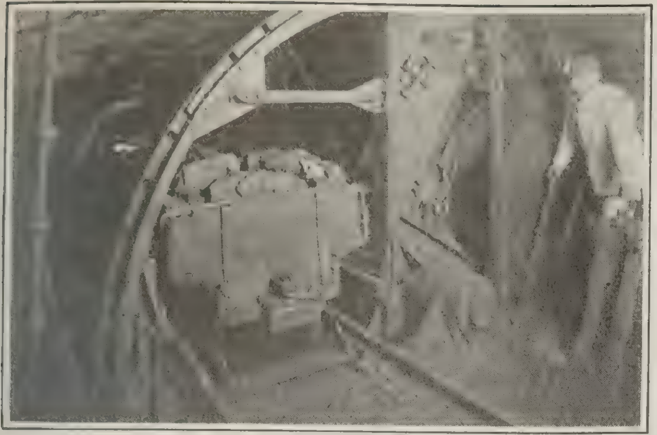


**Fig. 8—Rotary Dump in Action**

This is a three-compartment dump, a car or rather a pair of them, being accommodated in each compartment. This device is gravity-operated and always contains either four empties or four empties and two loads.

or leave the mine without a record being made of this fact.

Development of this mine was begun in 1912. In that year 115,606 tons of coal was produced. Since Jan. 1, 1913, it has been operated double-shift and the output has increased year by year until 1924, when 1,159,400 tons was brought to the surface.

At this operation the combined boiler plant and pumping station is not considered as forming a part of the mine equipment. This is because it constitutes the main water supply for all plants of the company. Steam for the main hoist, however, as well as for heating purposes, is furnished from this boiler plant.

The main hoist has 28 x 48-in. cylinders, these engines being direct-connected to the drum shaft. The drum serving the upper landing is cylindrical, 8 ft. in diameter and grooved for 1½-in. rope; that for the lower level is conical, increasing from 9 ft. 6 in. in diameter at the small end to 12 ft. 6 in. at the large end. It also is grooved for 1½-in. rope. This machine is equipped with steam reverse gear and steam brakes; it also has an automatic stop to prevent overwinding.

The hoist is housed in a suitable brick building which contains no other equipment as this might distract the hoistman's attention.

A well lighted and ventilated, slate-roofed brick power plant contains two 500-kw. motor generator sets supplying 250-volt direct current for mine use; also a 400-kw. 250-volt steam-driven direct-current generator for emergencies. This latter machine is kept under steam at all times and can be started in a few moments.

In order to reduce line losses another 500-kw. motor generator set has been installed at the second south escapeway. The underground transmission lines have sufficient capacity to permit operation of any two of these machines. Under normal conditions one of them is practically held in reserve ready for any emergency.

Fan drives occupy the southern end of the power house. Originally a steam engine drove the fan, but this has been replaced with motors and belts. The fan is now driven normally by a 150-hp., 60-cycle, alternating-current motor, with a 250-volt, direct-current machine of equal power in reserve. The repair shops are of brick with a slate roof carried on steel trusses. They include a machine shop, a blacksmith shop and an electrical repair shop. This latter is the central repair shop for all the coal mines of the company. It is well supplied with machinery for the repair of all the types of motors now in service. In the south end of this building an office is provided for the chief electrician and the superintendent of coal washeries.

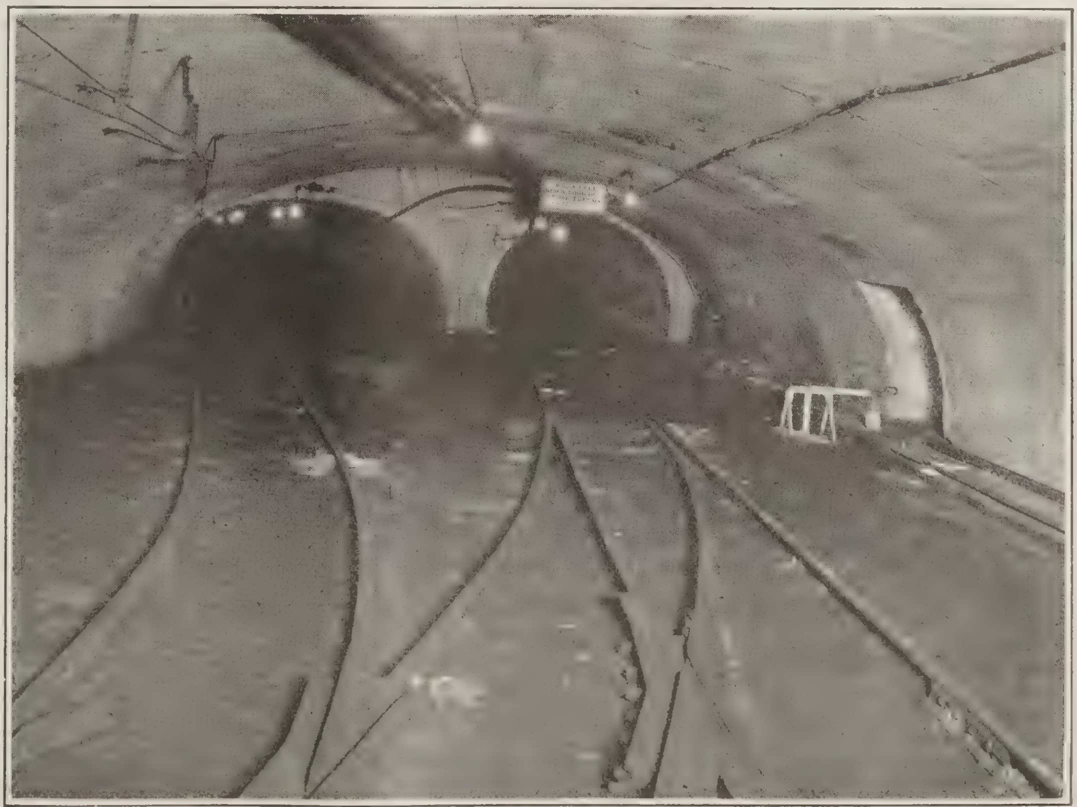
In the bath house, which is of brick with a slate roof, provision is made for 366 white and 510 colored employees. The bath and change rooms are separated by a solid wall the necessary openings in which are fitted with swinging doors.

A commissary and a lunch stand are located at the

FIG. 9

**Concrete Arching**

At the foot of the shaft the heading is well protected from all possibility of roof falls. The trackwork is also heavy and well laid. Any mishap in a place like this means a tieup of the hoisting shaft. It thus pays to make everything in the shape of tracks and roof supports solid, strong and substantial.



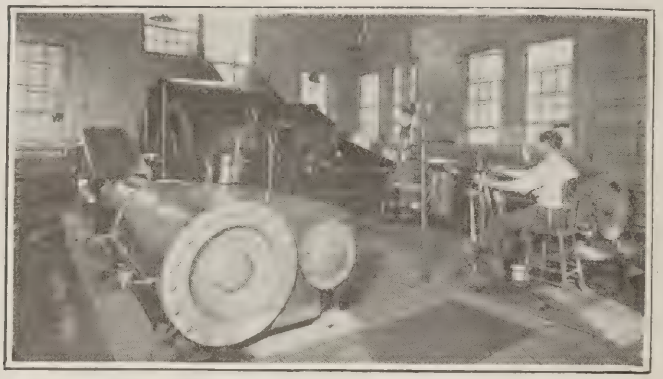


**Fig. 10—The Main Coal Hoist**

This hoist is peculiar in that it is equipped with two drums, one cylindrical and the other conical, each serving its own level. Although the electric hoist for mine use has made great progress during the past few years many operators still prefer the "old reliable" steam-driven machine.

southern entrance to the mine yard. The former has a self-service grocery and vegetable department and the latter provides lunches at all hours with special service at noon. It is liberally patronized by surface employees and others. Adjoining this building but outside the mine yard is an emergency hospital and dispensary. Here medical attention and the services of a trained nurse are available at all times.

At this mine the washery is of concrete and steel construction throughout. All settling tanks as well as the flumes under the floor are of reinforced concrete, as is also the building itself up to the floor level. All bins, tanks and the like above this point are of steel, no wood being used. The jigs are of the double plunger type with three 6-ft. cells equipped with Elmore revolving discharge valves. These machines make three products—washed coal, boiler fuel and refuse. The rated capacity of each jig is 55 tons per hour but if necessary 75 tons per hour can be effectively prepared.

The jigs are set on a concrete floor permitting ready access to all moving parts. At their tops steel operating platforms are provided upon which all electrical controls are mounted. Each jig is independently motor-driven, eliminating all pulleys, belts and shafting and permitting the operation of any machine singly or all simultaneously. As four of these machines are installed the normal capacity of the plant would be 220 tons per hour. On one occasion, however, all of these machines were operated continuously at 75 tons per hour for 18 hr., making a total washery output of 5,400 tons for this particular day, the results, so far as quality was concerned, equalling normal.

From the tipple run-of-mine coal is brought to the crusher house by a 30-in. belt conveyor. Here it is delivered to two shaking screens with 1-in. perforations. The oversize from these screens goes to the crushers and that passing the screen bypasses them to an inclined belt to which the crushed material likewise is delivered. The normal size of the crushed product is $\frac{3}{4}$ in. and under and as the oversize rarely exceeds 10 per cent it does not affect the ultimate results.

From the crusher house the coal is delivered by a 30-in. belt conveyor to the raw coal bin where it is distributed by an automatic tripper. Rotary feeders deliver this raw coal to the various jigs. The overflow from the last cell of each jig is flumed to the washed coal settling tank whence it is transferred to the washed coal bin by a dewatering elevator. In like manner the refuse is collected from the first and second valves and the first and second hutches and is delivered to the refuse bin for disposal.

Circulating water from all settling tanks overflows into the main sump. From here a centrifugal pump transfers it to the cone-shaped sludge settling tank. The overflow from this tank is collected into the main pipe that supplies the jigs. By this arrangement the wash water is used over and over again, only the make-up being added. This amounts to about 12 per cent of the weight of the coal treated. Approximately $2\frac{1}{2}$ tons of water is in circulation for each ton of coal washed. A valve in the bottom of the cone-shaped sludge tank permits the sludge to be drawn off and shipped with the washed coal.

A concrete drainage pad extends along the railroad

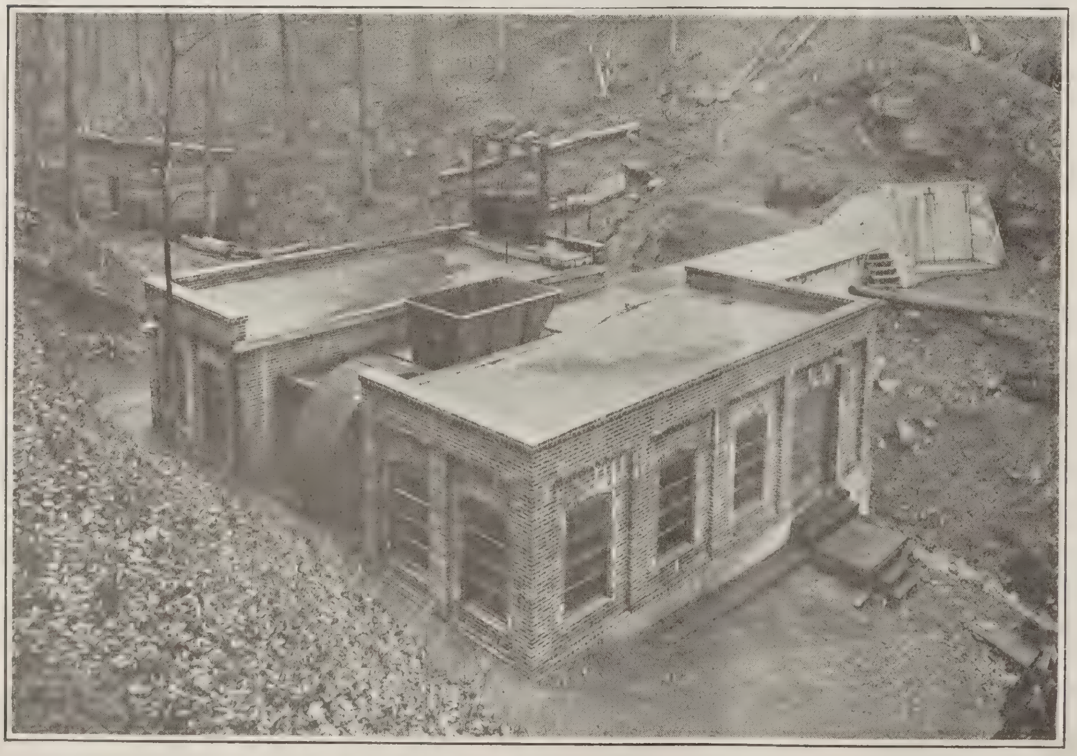


FIG. 11

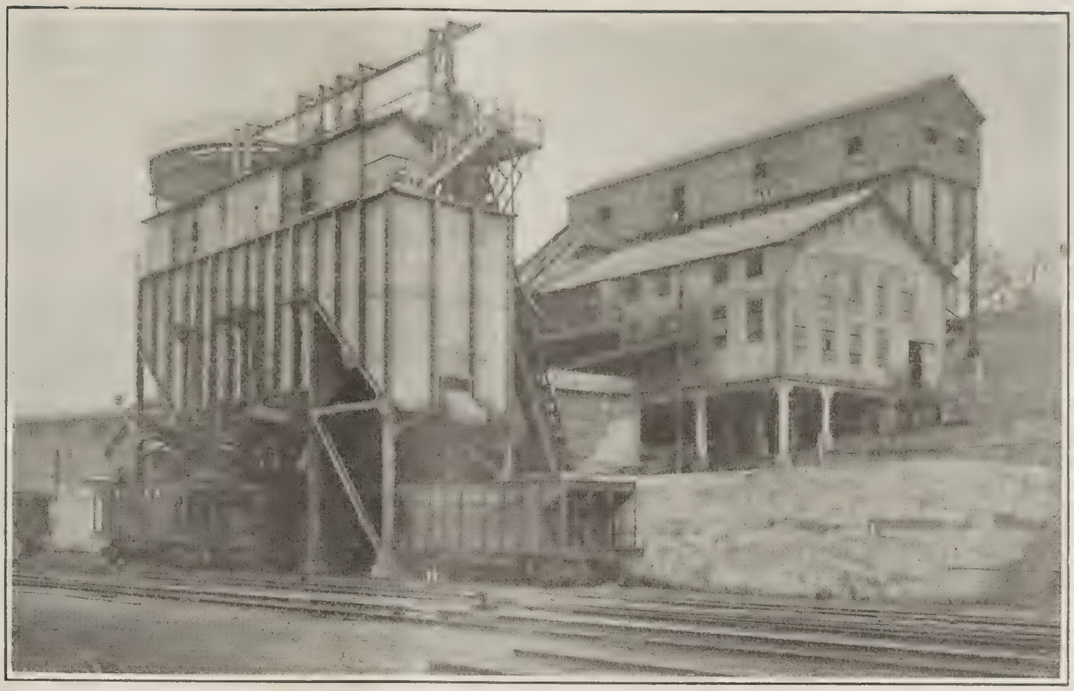
**Escapeway Fan**

Either of two motors, one upon each side, may be used to drive this fan. These two motors are of equal rated horsepower but one operates on alternating and the other on direct current. Normally the alternating-current machine, operated on purchased power drives the fan. Should accident befall either this motor or the current supply line the other motor may be promptly started.

FIG. 12

**Edgewater Washery**

This unit of the mine plant is built of concrete and steel exclusively. Because of dirt or extraneous material that cannot be separated from the coal in the mines it is necessary to wash the entire mine product. That portion that is already small enough is sent direct to the jigs; the larger pieces are crushed down to suitable size. The wash water is used over and over again only the makeup being added.



tracks from the upper end of the bins to a point some distance below the washery. All leakage and drip from either the cars or the washery is collected in a small sump from which it is recovered and returned to circulation. This pad has proven of great advantage in keeping the tracks clean as all spillage from the cars can be hose flushed into the sump and from thence elevated into the washed coal settling tank.

When this washery is in operation all jigs and settling tanks as well as the main sump are full of water. When it becomes necessary because of accident or the necessity of cleaning out any of the various pieces of apparatus, the circulating water from the sludge tank is bypassed to a washout tank provided for the purpose. When the emergency is over a valve is opened and this water returns by gravity to the main sump.

During the year 1924, in treating 1,093,633 tons of coal the following average results were obtained: Washed coal, 82.35 per cent; boiler fuel, 6.72; "clean" refuse, 10.4, and washer loss 0.53 per cent. This latter item or washery loss is the quantity of clean coal that is carried away in the refuse. It is the content of the refuse that will float in a liquid of 1.37 sp.gr.

The following table sets forth the proximate analysis of the raw and washed coal and the boiler fuel.

**Analysis of Washery Feed and Washery Products**

| | Volatile Matter Per Cent | Fixed Carbon Per Cent | Ash Per Cent | Sulphur Per Cent |
|---|---|---|---|---|
| Raw coal | 27.32 | 60.43 | 12.25 | 1.56 |
| Washed coal | 29.30 | 65.96 | 4.74 | 1.22 |
| Boiler fuel | 25.89 | 58.34 | 15.77 | 2.70 |

Float and sink tests on the washery refuse gave the following average results: Float, in liquid of 1.37 sp.gr. 5 per cent, ash content, 4.9 per cent; sink in same liquid 95 per cent, ash content 65.94 per cent.

The valley of Camp Branch in which this mine is located is rather narrow and on account of occasional floods not well suited to modern village building. All houses, therefore, are built on higher ground where conditions are suitable and ready access can be had to the plant.

The mine plant divides the village into two sections, the southern portion being occupied by white and the northern by colored employees. The same types of houses have been erected in both sections, but there is a larger proportion of two- and three-room dwellings in the colored than in the white section. All streets and alleys are graded and surfaced with chert or burned mine refuse. Ample ditches are provided to carry off heavy rainfalls. Substantial wire fences have been provided, all posts being set in concrete. Domestic water supply is obtained from the city of Birmingham, a special 8-in. line nearly four miles long bringing this water to the village. An outdoor hydrant is provided between adjacent houses. Fire hydrants are installed throughout the town and reels of fire hose and other necessary equipment located at convenient or strategic points.

Churches and schools are provided in each section of the village. Receptacles for garbage are placed in the alleys behind each dwelling and are emptied regularly by the sanitary department of the mine organization, their contents being destroyed in an incinerator. Altogether the village contains 604 dwellings, about 30 per cent of which are in the white and the remaining 70 per cent in the colored section.

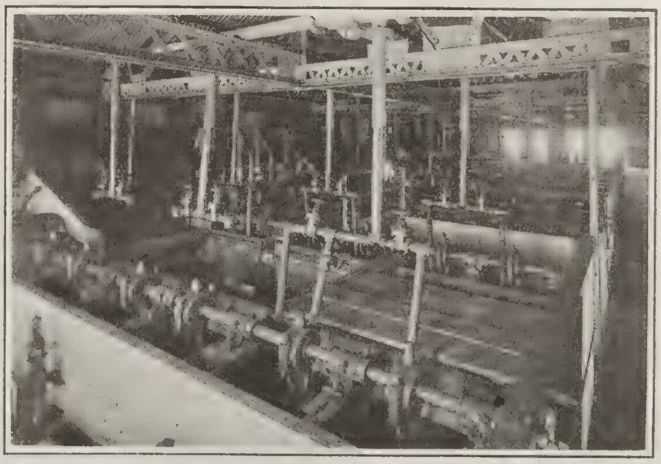
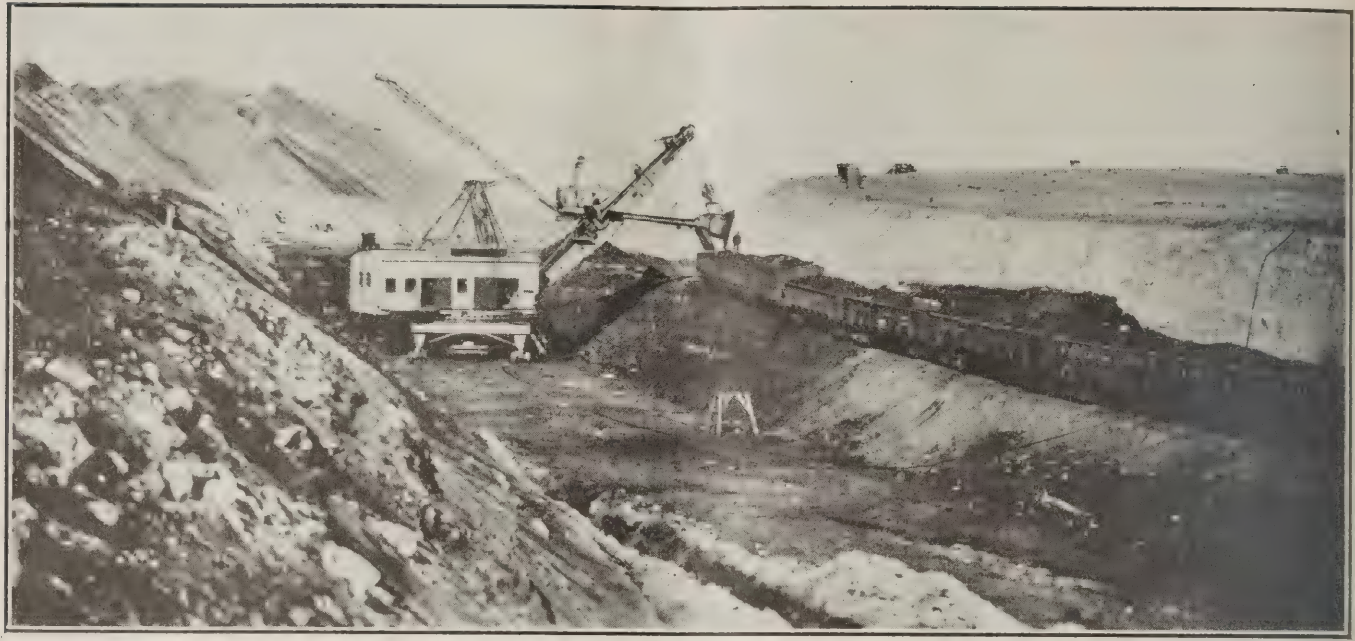


**Fig. 13—Jig Floor of the Washery**

Each jig makes three distinct products—clean coal, boiler fuel and refuse. The separation is remarkably effective even though in times of emergency these machines over long periods are driven well beyond their rated capacities.



*Northern Pacific's new mine at Colstrip, Mont.*

# Colstrip Mine Is Country's First Electrified Pit

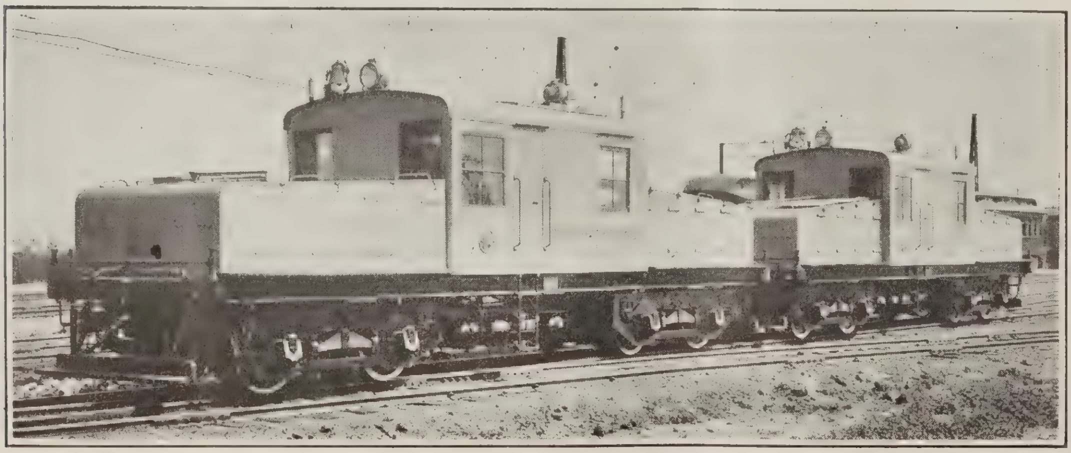
The first completely electrified open-pit coal mine in this country is at the newly-made town of Colstrip, approximately 35 miles south of Forsyth, Mont. The coal bed, about 180 acres in extent and 25 ft. deep, is owned by the Northwestern Improvement Co. and is being worked by Foley Bros., general contractors, of St. Paul, Minn. The coal is sub-bituminous with a heat content of about 11,000 B.t.u. The output of the mine will be used for the locomotives of the Northern Pacific R.R. in Montana.

As a result of a thorough study of the property, it was decided to utilize electricity in mining the coal. An extension of the Montana Power Co.'s 55,000-volt transmission line was made and complete electric equipment was purchased for stripping the overburden, mining the coal and hauling it. This equipment consists of an electric shovel, with a 155-ft. boom and 6-yd. bucket, used as a dragline excavator for stripping, equipped with Ward-Leonard control; a coal loading shovel with direct-current drive, and two 60-ton electric storage-battery locomotives. The locomotives are the largest storage-battery units in the coal fields. They are equipped with lead storage batteries of a special size and include a motor-generator set in the cab of each for charging.

During the time spent at the shovel while the cars are being loaded, a flexible cable, running from a bank of transformers on the shovel, is plugged into the locomotive for charging. While coal is mined from one strip, the overburden is removed from the next and is cast into the excavation resulting from the removal of the coal.

Many another stripping operation in older coal mining regions than this is using electric shovels both for removing cover and for loading coal into cars, but none is electrified as to haulage as completely as Colstrip. Since the fuel does not have to be put through a cleaning and sizing plant, the railroad spur is built into the pit so that coal is loaded directly into Northern Pacific cars. Trains of considerable length are handled in and out of the workings. Thus heavy motive power is necessary. The big storage battery locomotives were deemed to be the proper thing. They are successfully beginning their career of service.

Other operators of the few pits now working in the far West are watching the venture in electric mining with deep interest as, in fact, are stripping operators in other sections. The opening of the tract with the big shovels has also centered wide attention on the entire coal field in the Rosebud section of Montana.



**They're Big Fellows**

These 60-tonners now serving the completely electrified Colstrip operation of the Northern Pacific railway are the heaviest storage battery locomotives in use by any coal stripping company.

# Rosebud Field in Montana Wins New Attention

## Northern Pacific Stripping Pit at Colstrip Is Main Operation in 4,000-Square Mile Tract Producing Industrial Sub-Bituminous Fuel

By **Thomas Edwin Smith**
Forsyth, Mont.

THE Northern Pacific Ry. lately has commenced operations at Colstrip, 35 miles south of Forsyth in Rosebud County, Mont., where a bed of sub-bituminous coal 27 ft. thick is stripped and loaded by electric shovels and draglines. This operation is designed to produce eventually 5,000 tons of coal per day at a cost not to exceed 65c. per ton delivered to the railroad's main line at Forsyth. The railway has been using heretofore about 660,000 tons of coal per year from the Red Lodge mines which was costing about $3.50 per ton so the benefit of the new operation should be large.

This operation directs attention to Montana coal. That portion of the field in which lies the Colstrip tract is roughly rectangular and is approximately 90 miles long and 60 miles wide with its southeast corner on the divide between Powder and Little Powder rivers on the state line. The overlap into Wyoming is more nearly triangular with the apex a few miles northeast of Casper. Over practically the entire area, one 20-ft. bed is found and in the interior of the field lie as many as 17 beds of coal 5 ft. or more thick. The field's area in Montana is roughly 4,000 square miles and in Wyoming perhaps 6,000 square miles.

Along Tongue River there are five beds more than 9 ft. in thickness. One bed 95 ft. thick has been opened up in the Wyoming portion of the field while beds of 40 and 50 ft. frequently are reported from drilled wells.

The six mines of the Sheridan Wyoming Coal Co. near Sheridan, Wyo., with a daily capacity of 10,000 tons are on one edge of this great field and the Northern Pacific stripping mine at Colstrip is on the other. There is a mine on Powder River near Broadus that is open for business all the year round and one on Tongue River near Birney that is developed to supply local trade at any time. A number of local banks, where some settler will blast out coal for his neighbors, operate during the fall and early winter months and there are a still greater number of open pits where the settlers go and strip the cover off the coal to supply their own needs.

### Railways Expect to Reap Benefits

The North & South Ry. under construction from Casper, Wyo., to Miles City, Mont., along Tongue River will traverse this field for more than 200 miles. The Chicago & Northwestern Ry. has announced the extension of its line from Belle Fourche, S. D., to Miles City, Mont., and that line will pass through about 20 miles of this coal region. The Chicago, Milwaukee & St. Paul Ry. is considering getting its fuel from there also and has already sent one party of officials to inspect the offered holdings. It is barely possible that within the next five years five railways and the Black Hills industries will get their fuel from this field at a cost of less than $1 per ton. What effect this will have upon the camps of Red Lodge, Roundup and Sheridan with their union rate of $8.39 per day remains to be seen.

**Clinker Masses Are Common in the Region**

A great deal of the coal near outcrops in the Rosebud field is burned back for a considerable distance and the territory, in spots, is full of clinker such as this surface chunk near the engineer engaged in planetable surveying.

The coal field in general is a plateau gently sloping to the northeast and crossed by two river valleys, several long creeks and numerous gullies, many of which have cut through the entire series, thus making geological examination easy. The area is characterized by a more rugged topography than the area of Cretaceous rocks which surround it. The rocks are harder and more persistent; the hills are higher, larger and have steeper sides; the coulees are longer, deeper and have steeper sides. The hard gray and buff sandstones weather out in bold relief forming long, high almost unscalable cliffs. The higher portions of the field are called mountains by the inhabitants but they are merely remnants of a former surface set off by erosion.

### Sandstone Cliffs Form Contrast

Clinker beds resist erosion better than the other rocks and form fairly level benches. Many of these terraces are farmed. Along the larger streams, erosion has isolated many clinker-capped buttes and these red and green, tree-capped mesas with gray and buff sandstone cliffs below are a pleasing contrast to the somber-colored beds outside the coal areas.

The maximum relief of the region near Colstrip is 750 ft. ranging from 2,950 ft. above sea level at the creek bottom at the north edge of the field to a maximum of 3,700 ft. at the top of the highest hill near the workings.

Drainage of the entire Montana area is into the Yellowstone River, either direct or by way of Tongue and Powder rivers and Sarpy, Armells, Rosebud, and Pumpkin creeks. The steep grade of the drainage courses renders the run-off of precipitation extremely rapid.

Climate of the area is typical of the semi-arid regions lying east of the Rocky Mountains. Summers are generally hot and dry. The nights are uniformly cool and a daily range in temperature of 65 deg. is common. Winters are only moderately cold except for a few days each winter when temperatures as low as 50 deg. below zero occur. The average winter temperature is above zero. Warm spells, during which nearly all the snow melts, occur nearly every month of the winter.

Precipitation averages 14 in. per year, coming usually at three periods: First, during May and June when about 5 in. of rain falls; second, during Septem-

**Great Beds of Coal Are Available**

This exposure on Coal Banks coulee, 5 miles south of Colstrip, where the great Northern Pacific strip is located, illustrates the character of the seam which underlies the territory.

ber and October when about the same quantity falls; third, during December and January when the greater part of the winter snow falls. There are generally several months in each year when there is no precipitation and for weeks at a time not even dew falls at night. Thus, stripping coal may not involve severe weather difficulties.

The whole coal field is a region of only slight deformation. There are slight undulations but examination of a wide area discloses a regional dip of about 25 ft. per mile to the south. The Bull Mountain geosyncline, one of the major structural features of Montana, passes through the field a few miles south of Colstrip. This is a wide gentle syncline which starts near Roundup, crosses the Yellowstone River near Custer and the Tongue River about 10 miles north of the state line. West of Colstrip a southeast plunging anticline causes the coal outcrop to widen away from the creek for about 2 miles.

The position of this field with respect to the syncline may be responsible for the relatively high degree of carbonization which characterizes this coal. David White, of the U. S. Geological Survey, in a personal communication expressed the idea "that great horizontal pressure, unrelieved by folding" has been responsible for the greater carbonization of the coals in the region of isolated mountain uplifts in Montana.

Nearly all the coals of this region have burned along the outcrop and back under cover until the fire was smothered by the weight of the overlying material caving down on it. Often the burned belt extends 10 or 15 miles back from the edge of the clinker and in one instance the nearest unburned coal is 26 miles south of the furthest outlying clinker. Burning of the thicker beds has baked and fused the overlying rocks so that they can be readily recognized in the field by the clinker masses as shown in an accompanying illustration.

The coal of this field, according to the nomenclature adopted by the U. S. Geological Survey is sub-bituminous. While it is frequently called a lignite, such a name for it is incorrect. A lignite is a brown coal showing distinct woody structure and usually containing more than 30 per cent moisture. A sub-bituminous coal is black, has conchoidal fracture, homogenous structure and contains more than 10 per cent of moisture. The coals of the Tongue River group are remarkably uniform in weight, color, composition and behavior and do not classify as lignites.

### Bureau Makes Analysis

A large number of analyses of coal from this field have been made; one by the U. S. Bureau of Mines which is given in Press Bulletin 16,925 and copied here. The coal analyzed was taken from the Lee Coal bed, in the McKay mine which is about 12 miles south of Colstrip.

| | Per Cent |
|---|---|
| Moisture | 23.95 |
| Volatile matter | 28.7 |
| Fixed carbon | 40.3 |
| Ash | 7.1 |
| Sulphur | .6 |
| B.t.u. per lb | 9,160 |
| Moisture loss by air drying | 8.4 |

A number of other analyses of this region's coal show heat values ranging from 10,643 to 12,755 B.t.u. per pound, ash content from 5.01 to 9.33 per cent and the moisture in air dried samples running from 6.2 to 7.24 per cent.

The bed being mined by the Northwestern Improvement Co. for the Northern Pacific Ry. yields a hard black coal burning to a white ash. This coal kindles readily but burns slowly except with a strong draft. It is not a good domestic fuel. In the fire pot of a heater or range the coal decrepitates rapidly and obstructs the flow of air through the fire. In a furnace, owing to the larger fire pot and stronger draft, it gives satisfaction. In a forge with a fire 6 in. deep and a strong draft it is possible to get a welding heat with it, but it is not a good smithing coal. Considerable oil readily can be distilled from it.

The Northern Pacific Ry. several years ago made a series of elaborate tests of this coal in both locomotives and stationary engines and the results were so satisfactory that it is being used now to the extent of 2,500 tons per day and the consumption is increasing steadily.

This coal slacks speedily upon exposure to the air owing to the loss of water and this slacking seriously affects the value of the coal. The rapidity and degree of slacking are intimately affected by the surrounding temperature. At 70 deg. F. a 4-in. lump of coal will crumble to pieces in 24 hr. At 55 deg. F. the same lump will last a week. At 40 deg. F. lumps of coal will remain hard and black for five weeks. At freezing temperatures and below, the coal will keep indefinitely. A thin layer of slack will form on the surface which will protect the coal underneath from the air. There is an enormous quantity of it available and its future as industrial fuel in the regions naturally tributary to this field is rosy.

# Motor of 60-Hp. Hoists 1,200 Tons of Coal Daily

## Aids West Kentucky Mine to Lower Its Hoisting Cost —Use of a Balancing Sheave Cuts Down Size of Hoist —Smaller Motor Decreases the Power Demand Charge

**By J. H. Edwards**
Associate Editor of *Coal Age*
Huntington, W. Va.

WHEN FIRE DESTROYED the tipple, headframe and hoist of the Crescent Coal Co. at Bevier, Ky., it dealt almost a death blow to a mine which long ago had passed its prime. The mine had been worked for a number of years before the Crescent company took it over in 1902. After the fire, which occurred in November, 1923, the owners of the mine took stock of their diminished coal resources and determined the maximum amount of money which they could afford to spend for new equipment to work out the remaining coal. Next in order bids were obtained for a new tipple, headframe, and electric hoist. The total bids for this equipment were much more than the allotted amount. As a result, ways and means of cutting the cost were carefully considered.

Out of this came the proposal for a change in the hoisting arrangement. The new plan, which is somewhat of a departure from the conventional method used in a double-compartment shaft with self-dumping cages, consists of mounting on the headframe, in addition to the regular head sheaves, a third sheave for balancing the dead load. Such an arrangement relieves the hoist drum and its shaft from a major part of the strain ordinarily imposed upon those parts. This method made possible the use of a smaller hoist so that the price was well within the appropriation. As a result, the installation was made and today there is being hoisted in 8 hr. with a 60-hp. motor, the regular mine production of 1,200 tons.

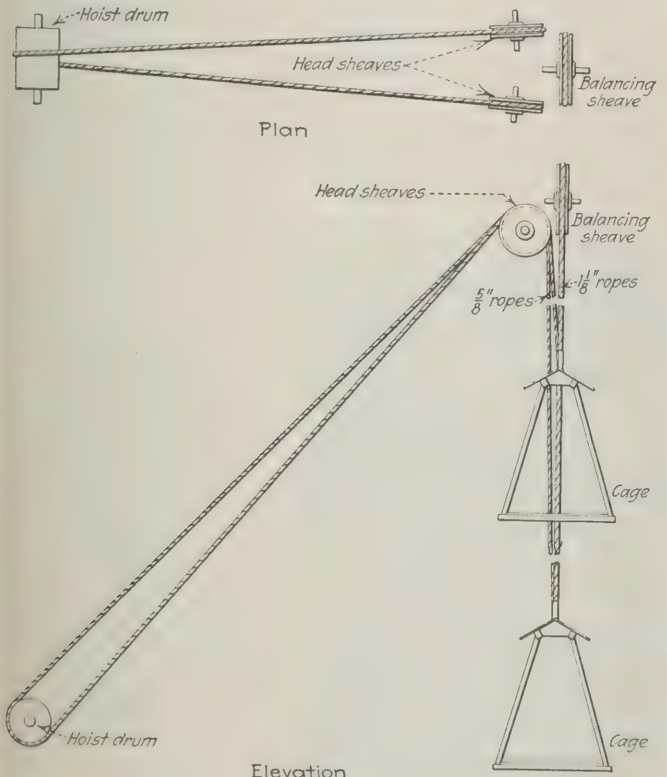


**Fig. 1—Three Sheaves Mounted on the Headframe**

The arrangement is the usual, except that the hoisting ropes are much smaller and there is added a balancing rope which is fastened to each cage and passes over a large sheave, the diameter of which is equal to the distance between centers of the shaft compartments.

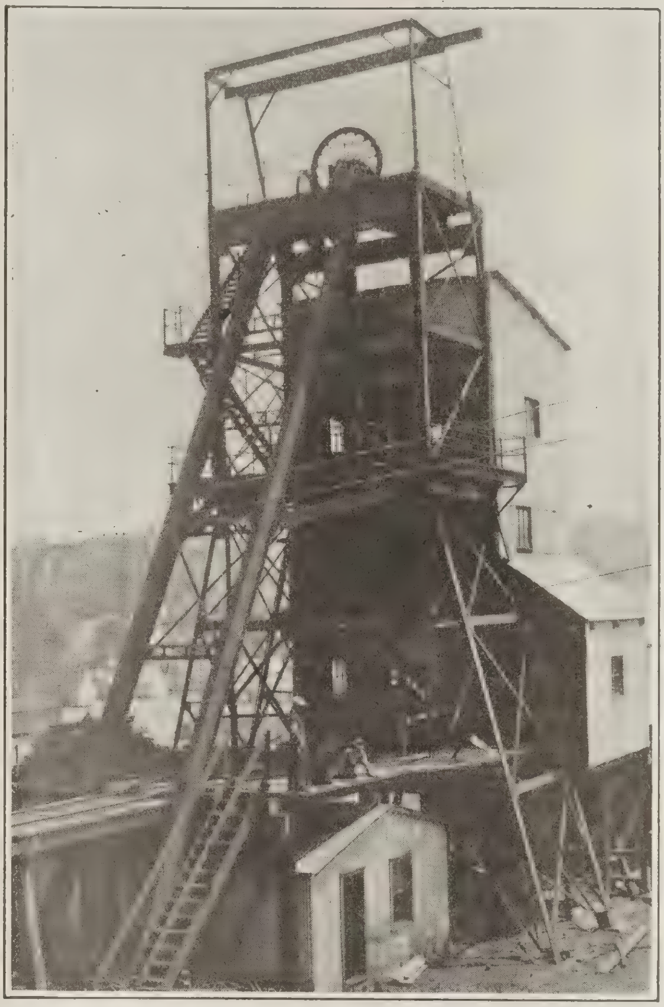


**Fig. 2—The New Tipple, Headframe, and Hoist House**

This construction replaces the equipment destroyed by fire in November, 1923. The hoist house is the small building set below the supply track. The balancer sheave is the one which shows up plainly in the center of the headframe.

The sketch, shown in Fig. 1, indicates the arrangement in use at the Crescent mine. The hoist drum is of the short, cylindrical type, and the head sheaves are mounted at such angles as to converge the ropes to the point where the hoist is installed. The balancing sheave has a diameter equal to the distance between centers of the shaft compartments. Over this sheave passes a 1⅛-in. rope, the ends of which are fastened to the cages. The hoisting ropes, which are only ⅝ in. in diameter, are carried from the drum, over the head sheaves, and are fastened, also, to the cages. Thus, there are two ropes to each cage, one 1⅛ in. and the other ⅝ in.

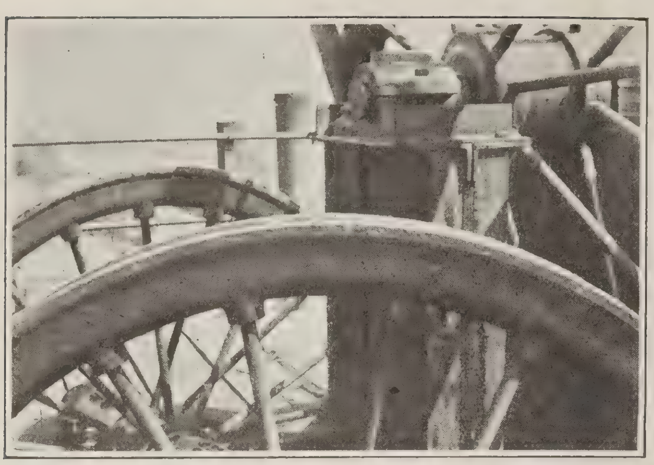


**Fig. 3—Close-Up of Balancing Sheave Mounting**

The center of the balancing sheave is mounted well above the top line of the two head sheaves. The former is 6 ft. in diameter and the others 5 ft.

A better idea of the sheave arrangement may be gained from the illustration shown in Figs. 2, 3 and 4. In Fig. 2 the small building underneath the supply track is the hoist house. Although the dimensions of this building are but 16x18 ft., the floor space is ample.

The hoist, which was made by the Ottumwa Iron Works, is shown in Fig. 5. The drum is 30 in. in diameter, has a 30-in. face, and is grooved for ⅝-in. rope. The electrical equipment, which is of General Electric manufacture, consists of a 60-hp., 440-volt, 600-r.p.m. wound-rotor induction motor fitted with a solenoid brake, and a semi-magnetic controller.

The use of such a small motor necessitates explanation as to the conditions, other than the use of the balancing sheave, which makes this possible. The shaft is only slightly over 40 ft. deep and the total hoisting distance is but 85 ft. The mine cars, which are hoisted on the cages, have an average capacity of only 1.25 tons of coal.

In addition to the balancing sheave feature, the hoist at the Crescent mine is unusual, in still another way. The operator of this hoist is stationed at the dump. This arrangement eliminates one man, and is otherwise advantageous because of eliminating time lost in interchange of signals.

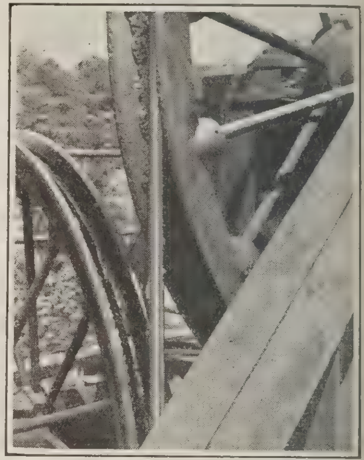
It has been found unnecessary to provide the operator with a means of applying the hand brake, which is shown in Fig. 5. The electric solenoid brake on the motor shaft, which brake is released or set as the controller handle, is moved to the first point, or to the off position, accomplishes all of the braking that is necessary. If it was desirable to use the hand brake, this could be fitted with a small steel cable for application from the operator's position at the dump.

The fact that the balancing-sheave arrangement has not been used before to any extent indicates that there must be some objections. One of these is that it is apparently impossible to protect the cage, against a broken hoist rope, by the ordinary safety-dog arrangement. Another is that the ropes must be kept closely adjusted as to length. At the Crescent mine, men are not hoisted on the cage, there being a man slope close to the tipple. This condition and that of the shallow shaft obviates, to a certain extent, the necessity for absolute safety-dog protection.

FIG. 4

**Balancing Rope**

This rope, 1⅛ in. in diameter, can be seen in the center of the illustration. It parallels the ⅝-in. hoisting ropes from the sheaves to the cages. The balancing sheave is mounted higher than the head sheaves in order that the flanges may not interfere.



The explanation of the necessity for close adjustment of rope length is, that when a cage is in the extreme dumping position none of its weight must be supported by the dump guides, otherwise this cage and

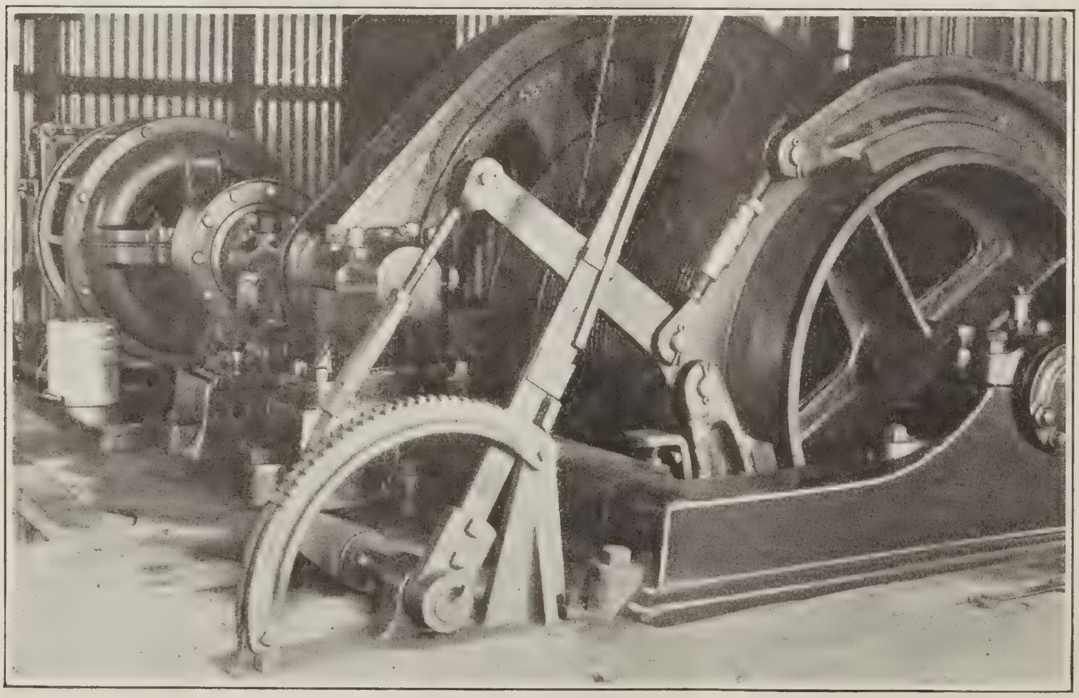


FIG. 5

**The Hoist**

An idea of the small size of the hoist and motor is indicated by a comparison to the size of the dinner pail sitting on the motor bed plate. The hoist drum is 30 in. in diameter, has a 30-in. face and is grooved for ⅝-in. rope. The hand brake in the foreground is not used. Braking is accomplished by the automatic solenoid brake seen on the far end of the motor.

empty car will not be exerting the regular balancing pull on the cage resting at the bottom. Such a condition would make it difficult, if not impossible, for the motor to start the hoist.

### Hoist Not Long In Operation

According to F. P. Wright, manager of the mine, the matter of rope adjustment is of small consequence, and should not cause delays. As to the speed of hoisting, Mr. Wright stated that the average is three trips in 80 sec., or 26⅔ sec. per trip. He also called attention to the fact that although the hoist was installed in February, 1924, it actually has been used but a few months, so has not been given a very thorough trial. The mine was shut down from April 1, 1924, to February, 1925, on account of a strike.

In addition to the great saving in initial cost, the system used at the Crescent mine effects a marked saving in the operating cost. The fact that the hoist drum and its shaft are relieved of the weight of the cage and mine car, makes it possible that these parts be of light design and, therefore, easy to accelerate. The use of a small motor effects a large saving in power demand charge, especially where the demand is based on connected horsepower, or in cases where there is a provision basing the charge on the instantaneous maximum demand. The energy portion of the power bill is also less, but the saving in this item is of little consequence.

Although it seems unreasonable to conclude that the use of a balancing sheave is new, it appears that no other installations of the kind are in use in coal mines of this country. For a mine of small to medium size with a shallow shaft the arrangement is well worth considering. It is rumored that two Illinois mines are contemplating such installations.

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# Risks of Thirteen Industries Exceed that of Anthracite

## Twenty-One Groups More Hazardous than Bituminous Coal Mining—Larger Classes used in National Insurance

**By R. Dawson Hall**
Engineering Editor, *Coal Age*

IN THE classification of risks of the Associated Companies, used in Pennsylvania and in other states with percentage reductions, the classifications having listed rates are larger than in Ohio and only 222 in all. In consequence there are less industries rated as more hazardous than coal mining than in the State of Ohio, data regarding which appeared in *Coal Age,* Aug. 13.

There are thirteen industries more risky than anthracite mining and one with an equal risk (other mining than that of coal) and there are twenty-one more hazardous than bituminous coal mining and one with an equal hazard, namely, sewer construction.

In the list, however, are included barges, scows and lighters, both on the Great Lakes and on the ocean. Neither of these classifications come under the provisions of Act 455 of the laws of 1919 in Pennsylvania but that is, of course, of little importance. Omitted, however, are aircraft operation—commercial or private excluding demonstration, testing, instruction, public exhibit, trick or stunt flying—for which the compensation is $230 per annum, and aircraft operation—demonstration, testing, instruction, public exhibit, trick or stunt flying—for which the compensation is $368 per annum.

The barges, scows and lighters rate that has been taken for use in this table is the lower rate quoted and covers only such legal liability as may exist to pay workmen's compensation and liability to pay damages under the various laws of negligence as are applicable to accidents occurring as a result of these risks, this part of the coverage being limited to $5,000. No reference is made in any enumeration to fishing vessels as the coverage rates on the basis taken for barges, scows and lighters is not published, but as the unclassified fishing vessels have a higher coverage rate of $7.76 it is probable that the lower coverage rate which corresponds to that taken for barges, scows and lighters is higher than the rate for anthracite and still higher than that for bituminous mining.

In view of the extreme hazard announced for anthracite mining by John L. Lewis, as a reason for a superwage it is interesting to note how the risk appears to the calm judgment of insurance men who are backing their cold cash against that calculation. How much more convincing is the eloquence of financial investment than the oratory at the Hotel Traymore, in Atlantic City!

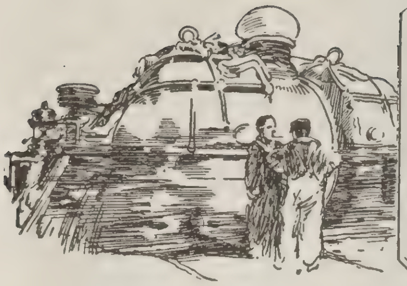
The list of occupational rates including those involving mining are as follows:

**Compensation Rates of Associated Companies In Pennsylvania, 1925**

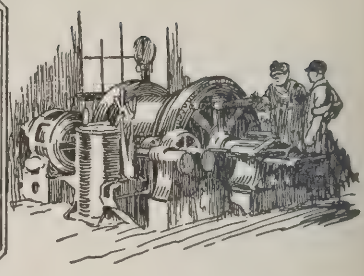
**Excluding Those for Occupations Less Hazardous Than Bituminous Coal Mining**

| | Per $100 of payroll |
|---|---|
| Explosive manufacturing, N.P.D., including fireworks manufacturing | $7.50 |
| Building wrecking, raising and moving, including dealing in second-hand materials and salvage operations, all employees | 6.00 |
| Saw mills and logging, including logging railroad, all employees, except office | 5.00 |
| Roofing, N.O.C., N.PD., with sheet-metal erection | 3.85 |
| Farm machinery operation by contractors: threshing, shredding, ensilage cutting, harvesting and hay baling, feed mill, incidental logging and portable saw mill operation, all employees, including farm and office, N.P.D. | 3.85 |
| Iron erection | 3.75 |
| Iron erection, N.P.D., tanks, gasholders, standpipes, water towers, smokestacks, chimneys | 3.75 |
| Pile driving, including timber wharf building | 3.60 |
| Junk-dealers, shop and outside, all employees, including office, N.P.D.; metal scrap, paper, rags, rubber and glass including smelting or refining of soft-metal scrap. Includes bottle dealers | 3.50 |
| Tunneling and shaft sinking, all work to completion | 3.30 |
| Fuse manufacturing, all kinds, all employees, N.P.D., including match manufacturing | 3.00 |
| Great Lakes barges, scows and lighters | 3.00 |
| Ocean-going barges, scows and lighters | 3.00 |
| Anthracite mining | 2.75 |
| Mining, not coal, all employees, except office | 2.75 |
| Quarries, not slate, including drill or stripping by contractor or operator and incidental stone crushing, cutting or polishing or lime burning including cement and clay quarries | 2.70 |
| Sand, gravel and slag excavation and crushing, no dredging, all employees except office | 2.70 |
| Amusement parks N.P.D.—all employees engaged in care, operation and maintenance, including ticket sellers and ticket collectors (includes baseball clubs) | 2.50 |
| Surface coal mining, including preliminary stripping operations by contractor or by operator, no shafts, slopes or drifts | 2.50 |
| Electric lines construction by contractors | 2.45 |
| Electric utilities operation, all employees except office | 2.45 |
| Sewer construction, all work to completion, including masonry work in connection therewith, no tunneling | 2.35 |
| Bituminous coal mining | 2.35 |
| Culm recovery, all operations N.P.D., with mining unless separate washery is operated | 1.70 |
| Coke burning, beehive | 0.65 |

N.P.D. = no division of payroll.



# Practical Pointers For Electrical And Mechanical Men



## Standard Switches and Curves Reduce Cutting and Bending of Rails

The Maryland Coal Co. has simplified its track work by avoiding as far as possible the necessity for cutting and bending rails. It lays short-radius switches and turnout curves in pillar work that are standard for the mine and can be relaid time and again without alteration.

The design of the standard switch is shown in Fig. 1. To lay the switch within the straight track *KLIA*, the rails are flared outwared at *B* and *H* respectively. The section *BD* is a straight rail which is about 10 ft. long and bevelled at *B* to match the flare *BC*. The section *DJE* is a rail which is straight from *D* to *J* and curved from *J* to *E*. If the curve *DJE* is long it may be made in two sections. The straight section *FH* to the right of the frog *F* is about 15 ft. long and is bevelled at *H* to match the flare *GH* in the rail *GHI*.

In Fig. 2 is shown a pair of standard curve rails for use in pillar sections. To lay the standard curve *GHED* from the line *GD* in the straight track *FIJA*, rails *FI* and *AJ* are torn up and the rail *ABL* is flared at *B* to take the position *ABC*. Then the curves *GH* and *BDE* are set in place. Section *GH* is a standard curve rail with a bevel point at *G* and *BDE* is straight from *B* to *D*, is curved from *D* to *E*, and is bevelpointed at *B*. Where the curves are excessively long they may be made in two sections. Generally, however, the curve is short and when laid on steel ties the two rails may be moved as one unit.

Maryland Coal Co., Elkins Read.
Lonaconing, Md. General Supt.

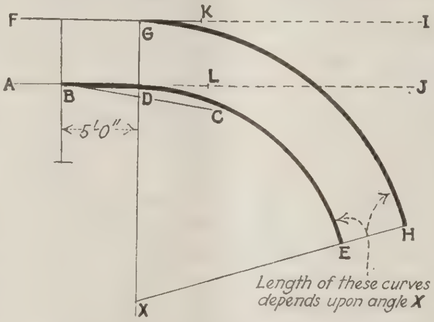
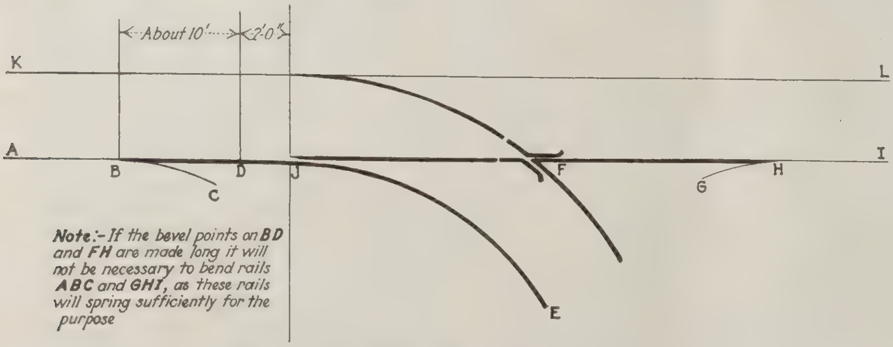


**Fig. 2—Curve for Pillar Turnout**

Once these turnout rails are curved they can be lifted and carried as a unit from one place to another and again relaid. In other words they are standard. The points *B* and *G* are beveled so as to provide a satisfactory lead from the straight to the curved rails.



Note:- If the bevel points on BD and FH are made long it will not be necessary to bend rails ABC and GHI, as these rails will spring sufficiently for the purpose

**Fig. 1—Standard Short Radius Switch**

In the Detmold mine, light rail switches are lifted and relaid as often as desired without requiring any alteration of the length or curvature of their various members nor is it found necessary to cut the straight rails of the regular track.

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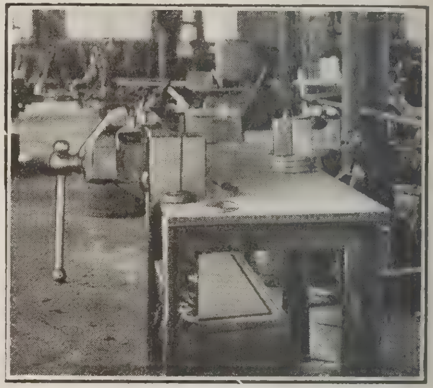
## Heavy Vise Bench Aids Mine Machinists

Machinists employed in operating the heavier machine tools found in the mine shop, such as the larger lathes, planers and the like, often have occasion to use a vise. In order to be most effective, such a vise should be of fairly large proportions and the bench to which it is attached either should be anchored to the floor or the walls of the building, or be of sufficient weight so that it cannot be readily moved by one man.



**This Bench Gets Much Use**

In the course of a normal day's work this bench is used repeatedly by the men operating the heavier machine tools such as the lathes and planers. It is not fastened to the floor in any way but its weight is sufficient to hold it in place under all ordinary circumstances. Its planed top forms an excellent surface upon which to lay out work.

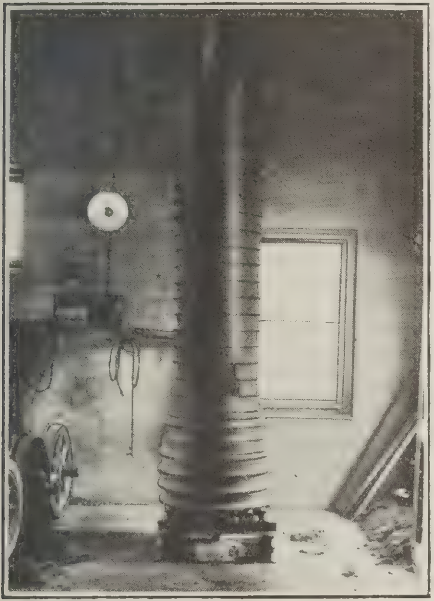
The accompanying illustration shows a heavy vise bench installed in the No. 4 mine shop of the Kingston Coal Co., Kingston, Pa. This is placed near several of the larger machine tools and is intended for use by the machinists who operate them. This bench is built entirely of iron and steel, the end brackets being of cast iron, while the top is a hard steel plate.

The end brackets on this bench were cast in a local foundry. The bench top was originally the cover plate of a coal pulverizer. When used for this purpose it was curved, but for the new use it was straightened out and planed true in the shop. It is now about 1 in. thick.

This vise bench is not attached to the floor in any way, but is sufficiently heavy so that one man can move it only with extreme difficulty. It, therefore, resists all ordinary efforts of the machinist in the course of his regular work. It securely holds both a 4-in. and a 6-in. vise, mounted upon opposite sides and at either end of the bench top. This bench is in frequent use.

## Tires Make a Freak Stove

A stove was constructed in the repair shop of the Warrior Coal Co. in McDowell County, W. Va., by stacking wornout locomotive tires from 6- to 10-ton mine locomotives on a grate of 20-lb. rails. The base was made up of 30-lb. rails. The door was formed by cutting out with an acetylene torch sections of two tires. The top is a piece of sheet iron in which is cut a flue opening. This stove is an ideal coal burner, having a large combustion chamber and a big radiating surface. On the coldest days it keeps comfortable the 20x50-ft. shop.



**An Odd Stove, This**

It is built of discarded locomotive tires with a base made of rail sections and a top of sheet iron. But it keeps a big shop warm.

## There are Safe—and Unsafe—Ways to Lift Armatures

All mine electricians agree that armatures should be handled with care, but there seems to be a lack of agreement as to what is "care". The man who is experienced primarily in the repairing and rewinding of armatures knows that every possible precaution should be exercised to prevent the bumping of the commutator and coils, and that no appreciable weight should be placed on these parts. One slight bump, or the application of a concentrated pressure, may later cause failure of the armature and necessitate an expensive rewinding job. The accompanying photographs which were snapped during actual armature changes in mine locomotives, illustrate the regular practice at two mines, showing an old-style method and a new and safer method of handling armatures.

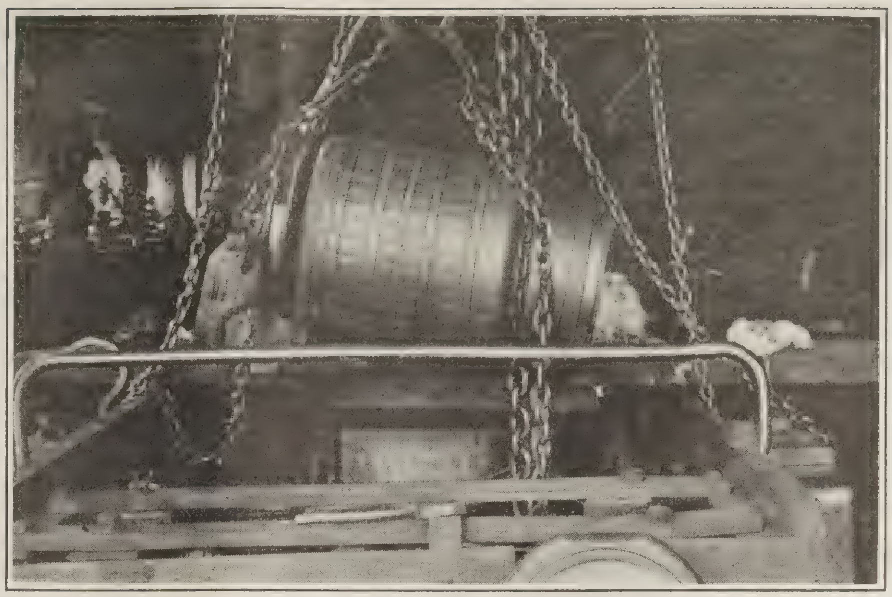


**Fig. 1—Why Take a Chance Like This?**

This armature is not a "dead one," as might be supposed from the method of handling. One end of the chain has a doubtful hold on the tapered end of the shaft, and the other end is looped around the commutator. At several points the chain is pressing tightly against the coils.

In Fig. 1 a ball-bearing armature of a 10-ton locomotive is being lifted by means of a chain sling. One end of the chain is hooked around the pinion end of the shaft in a rather insecure way and the other end is fastened around the commutator. For a portion of the circumference the chain rests on the coil connections back of the commutator, and no spreader is used to prevent the chain from pressing against their ends.

Inasmuch as the armature was to be lifted out of the bottom half of a split-frame motor, it could have been done by either of two common ways which entail no risk of damage to the coils and commutator. One is by the use of a yoke engaging with I-bolts screwed into holes tapped into the bearing housings, and the other way by means of a lifting band.

Fig. 2 shows a plain-bearing armature being taken out of a 5-ton locomotive by the use of a steel lifting band. This band is sufficiently wide to hold the armature without any extra means of balancing. The removable-end type of lifting band is necessary for easy handling of armatures of splitframe motors.

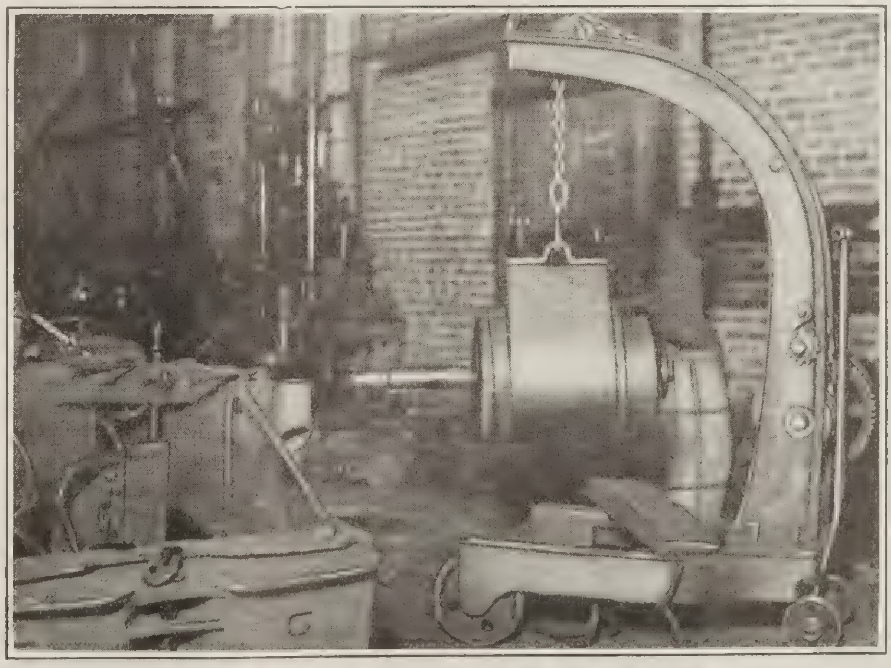


**Fig. 2—A Band Is Much Better Than a Chain Here**

This armature was just removed from the 5-ton locomotive at the left. Thin steel lifting bands with detachable end fastenings are of special advantage when removing or replacing armatures of split-frame motors. Handling an armature by means of a lifting band is but one of the approved ways commonly used.

# News Of the Industry

## I. C. C. Aids Smokeless Coal to Compete With Anthracite in Northeast

### Orders Joint All-Rail Rates from West Virginia Taking Effect Oct. 15—Declines to Disturb Anthracite Rate Structure Which Miners Condemn So Loudly

**By Sydney A. Hale**

Special Contributor, *Coal Age*,
New York City

The way to more intensive competition between anthracite and semi-bituminous coals in the surviving strongholds of hard coal consumption was blasted open last week by the Interstate Commerce Commission when it ordered joint all-rail rates to the Northeast on West Virginia prepared smokeless coal. This is the outstanding feature of the decision in *Anthracite Rate Investigation*, 101 I. C. C. 363, the general inquiry instituted two years ago upon recommendation of the United States Coal Commission. That agency indorsed the persistent propaganda directed against the existing basis to the extent of suggesting a re-examination of the rate structure. The Interstate Commerce Commission now declares that it can find no ground for disturbing that structure; on the contrary, it sees good reason for letting the structure alone and contents itself with ordering the ironing out of mal-adjustments, arising, for the most part, out of its own decision of ten years ago, *Rates for Transportation of Anthracite Coal*, 35 I. C. C. 220. This will have no important effect upon anthracite rates generally.

The Commission, in setting out the results of its investigation, states that the Coal Commission left these two questions to be answered by the federal rate tribunal:

1. Can the high retail selling prices of anthracite coal be reduced through reduction of freight rates thereon which may be unreasonable or otherwise unlawful?

2. Should new rates be established for the purpose of facilitating the shipping and distribution of fuels to be used as substitutes for or to supplement domestic sizes of anthracite?

This second question, it will be recalled, was dragged into the original proceedings by an order issued November 6, 1923, "broadening the scope" of the investigation to include consideration of the rates on fuels other than anthracite to New England and Middle Atlantic states. Up to the time this second question was injected into the case, general interest in the hearings had been something less than desultory. In fact, the only real attacks made upon the anthracite rates involved complaints against mal-adjustments and a plea of the independent operating interests for a reduction in the transportation charges on steam sizes. This plea is ignored in the decision handed down last week.

As before indicated, the Commission returns a decided negative to the first question. In so doing it effectively upsets one of the most attractive apple carts which the United Mine Workers has displayed for the edification of the coal consumer who has been wondering what all the parleys at Atlantic City have been about. Messrs. Murray and Lewis, as generalissimos of the union forces in the wage scale negotiations with the anthracite operators, have insisted in conference and in the public prints that a reduction in freight rates offered a method of meeting the wage demands embodied in the Scranton tri-district convention platform without increasing the cost of coal to the consumer. In fact, they went so far in talks with the newspaper men as to hint that the freight rates were so extortionate that not only could they be slashed deep enough to cover the wage demands, but that a commission investigation would result in reductions that would also leave something for the consumer.

### Answers Second Question

The commission's answer to the second question is found in the order incorporated in the report in the case. Declaring that "freight rates effect total restraint of the shipping of coal from mines in West Virginia to points in the eleven Northeastern states north of Hagerstown, Md., and Washington, D. C.," the commission gives the respondent carriers until Oct. 15 to establish joint through all-rail rates on lump, egg and nut coal from the Pocahontas, New River, Tug River and Winding Gulf districts to stations on the New Haven, Boston & Maine and Long Island railroads; to Pennsylvania R.R. stations, Tuxedo, Md. to deliveries at New York Harbor; Baltimore & Ohio stations, Alexandria Junction, Md., to Philadelphia, Pa. The specific rate bases established are as follows:

1. To Pennsylvania R.R. stations, Tuxedo to Edgewood, Md., $3.45 per gross ton; to Perryman and Iron Hill, Md., and points intermediate, $3.70; to Newark Center, Del., and Brooklyn, N. Y., and points between said stations, rates not exceeding rates from the Clearfield district by more than $1.10.

2. To Baltimore & Ohio stations, Alexandria Junction to Van Biber, $3.45; Sewall to Barksdale, Md., $3.70; Newark, Del., to Philadelphia, Pa., $3.94.

3. To New Haven railroad stations, Portland to Chestnut Hill, Conn., Talcottville to Willimantic, Conn., North Windham, Conn., to Forest Hills, Mass., South Windham, Conn., to Oak Lawn, R. I., Attleboro, Mass., to Boston, Mass., $5.58; to other New Haven stations named in Pennsylvania R.R. tariff AA-I. C. C. No. 1800, rates not more than $1.10 per ton above Clearfield rates.

4. To Boston & Maine stations, Farley to Boston, Mass., $6.70; to other Boston & Maine points specified in Baltimore & Ohio R.R. Co. Coal & Coke Series Tariff I. C. C. No. 2523, rates not more than $1.35 in excess of those maintained by the Baltimore & Ohio from the Cumberland-Piedmont district.

### Not Dictated by Administration

The answers thus returned to the two questions raised by the Interstate Commerce Commission in considering the recommendations of the Coal Commission have caused some enthusiastic Washington correspondents to declare that the decision of last week is part of the administration program for meeting the emergency threatened by the suspension of anthracite mining on Sept. 1. If we are to construe such declarations as the expression of a belief that the President or some of his associates told the Interstate Commerce Commission how it should decide this case, then we may safely charge them to the silly summer season. Too much furore was raised a few years ago when it was hinted that another President had whispered his desires to the Commissioners to encourage the belief that such an interpretation of the decision is well-founded.

However, external evidence strongly suggests that the commission has taken something akin to judicial notice of recent developments in the anthracite trade. We may even be justified in assuming that the members of the federal rate tribunal read in the daily newspapers the statements credited to union leaders at Atlantic City in which these leaders claimed that freight rates could be cut deep enough to pay the increased wages they demand. There is a synchronization which subtly hints at this. The report in this case was submitted to the commission for decision in April, 1924. The decision was reached July 22, 1925—several days after Vice-President Philip Murray of the United Mine Workers had thundered to the high heavens because the operators declined to join the union in a petition to the commission for another investigation of rates.

The estimate of the operators that the miners' demands, if granted, would add at least $2 per ton to the cost of anthracite still stands unchallenged. The commission's decision, however, stresses the desire of the consumers for a substantial reduction in retail prices. The idea that any reduction it might order would be absorbed in higher wages finds no lodgment in any part of the opinion in this case. In the face of the miners' demand for $2 per ton, the commission declined to order a horizontal or percentage reduction which would have clipped 24 cents per gross ton off the price in Greater New York—the largest anthracite market in the country.

### Upholds Anthracite Rates

The commission finds no warrant in the present record for holding all the rates on anthracite excessive, unreasonable or otherwise unlawful. On the contrary, it is of the opinion that "a horizontal reduction of all those rates, to an extent which could be reflected in an appreciable reduction of the retail selling prices would reduce the income of the several carriers of anthracite to an extent which would impair their credit, and, consequently, their ability to perform sufficient and satisfactory transportation service for the public. The record in *Transportation and Distribution of Anthracite Coal*, 77 I. C. C. 761 (the proceedings in which northern New York and New England interests sought an embargo on movement to Canada in the winter of 1923-24) is persuasive of the conclusion that impairment of the ability of the respondent carriers to perform expeditious and sufficient transportation service in connection with the distribution of anthracite coal might subject consumers to hardships which would outweigh any benefits resulting to them from a reduction in rates."

The report of the commission gives the carriers 90 days in which to correct voluntarily a number of existing mal-adjustments, involving the failure of the railroads to equalize rates via long and short routes. The commission, passing upon the plea for equalization, plainly states that it "cannot authorize equalization through any increase of rates," but expects "the carriers to reduce the higher rates on domestic sizes and pea applicable over the longer routes to the level of the rates applicable over the shorter routes between the same points, to the end that where the carriers maintained the same level of rates to given points prior to our order in *Rates for Transportation of Anthracite Coal* that parity of rates shall be restored."

These changes, however, are only local: they will not effect or rechart the course of the general streams of distribution. The order with respect to joint through rates on semi-bituminous coal from southern West Virginia, on the other hand, promises to have a marked influence upon the distribution factors in the Northeast and the Middle Atlantic states. These states are the heaviest consumers of anthracite coal, using in recent years over 70 per cent of the domestic anthracite tonnage shipped. These states have been the least responsive to efforts to introduce competitive fuels. Even in times of shortage, there has been a disposition in New England and in the Middle Atlantic region to hold off until the last minute before turning to substitute fuels.

**D. J. Price**

Formerly engineer in charge of development work in the Bureau of Chemistry, U. S. Department of Agriculture, he has resigned to take up commercial work with the Mine Safety Appliance Co., Pittsburgh, Pa. He takes up his new work Sept. 1. During the past eleven years Mr. Price has carried on important investigations on the causes of dust explosions and means of prevention and control. In this period a number of industries, notably flour milling, have greatly reduced the risks of losses from this cause.

### Competitive Fuels Gaining

And yet, despite this ingrained preference for anthracite coal, competitive fuels have been making steady, if slow, inroads upon the market in those states. It has been estimated that fuel oil has replaced about 5,000,000 tons of hard coal—chiefly in domestic heating plants and, for the most part, in the New England and Middle Atlantic states. One New Jersey coke plant is distributing approximately 300,000 tons of by-product coke per year to former consumers of anthracite. Coke ovens in other parts of this territory are extending their markets and new by-product plants are springing up. And where the rate adjustment has made it possible and the producer has been willing to combat prejudice, semi-bituminous and bituminous coal has been making headway.

New England's bituminous and semi-bituminous coal consumption today far exceeds its anthracite demands. In 1924, for example, the anthracite receipts were 11,909,000 net tons; bituminous, 18,894,000 tons. Of course, industrial consumption accounts for the greater part of the bituminous tonnage, but not all. And that industrial consumption in many cases means business that has been lost by the small sizes of anthracite. Particularly is this true of fuel for heating large office and apartment buildings.

During the first six months of this year, bituminous tidewater shipments to New England approximated 6,256,127 net tons. Of this total, 5,251,608 tons moved over the Hampton Roads piers and 327,166 tons moved through Baltimore. By breaking down the Chinese rate wall against the all-rail movement of prepared sizes of low-volatile coal, witnesses before the commission estimated that approximately 500,000 tons per month could be put into the New England and Middle Atlantic states over all-rail routes. Under the combination rates which the commission now outlaws, the rates to New England points exceeded through rates from the Gauley district by $3.76 to $4.77 per ton. The commission, however, declined to adopt the Gauley rates as standard, holding they were depressed. But in ordering the basis it did, the commission had in mind removing situations such as the one at Boston where "the combination rates on New River coal exceed the retail selling price of that coal."

### Promotes Competition in Soft Coal

While the commission, as its second question shows, was concerned with broadening the market for substitutes for anthracite, its decision will also have the effect of intensifying competition between the various bituminous districts making a bid for the favor of New England and the Middle Atlantic states. The low-volatile regions of Pennsylvania and Maryland have long enjoyed through rates to a large majority of the points of consumption in these states and some of the producers so favored have already completed the pioneering steps in building up a domestic market. Typical of the rate basis in effect are rates of $3.09 to Newark, N. J., $4.48 to Fall River, Mass., $4.10 to Hartford, Conn., and $4.22 to Boston and Springfield, Mass.

Up to a certain point, these all-rail rates from central Pennsylvania have given the Pennsylvania producers an advantage in meeting the competition of West Virginia coal moving rail-ocean-and-rail to interior points. Now, the West Virginia smokeless fields are given an all-rail avenue, although at higher rates.

The order in the present case is limited to rates from mines producing low-volatile coal and served by the Chesapeake & Ohio, Norfolk & Western and Virginian railroads and feeders and to the prepared sizes.

If the order of the commission stands and there are signs that West Virginia is profiting from it, there will be a host of other producers clamoring at the gates in Washington for rate changes which will work to their particular benefit. The decision in *Anthracite Coal Investigation* is not the last word: it it only the beginning of the chapter.

## Engineers Seek Legislation For Water Development

The Secretary of the Interior on Aug. 12 was urged by a committee of the American Engineering Council to support legislation providing for an inventory of the water resources of the United States. A bill has been drafted by the Engineering Council which provides that such a study be made by the Geological Survey. Those who discussed the matter with Secretary Work were William McClellan, chairman of the committee; Wilbur Nelson, until recently state geologist of Tennessee but now state geologist of Virginia; Col. J. H. Finney and L. W. Wallace.

The bill, which will be introduced at the next session of Congress, provides for the carrying out of "a comprehensive plan for developing both surface and ground waters for domestic and industrial supplies, irrigation, navigation, power and other uses and for the conservation and control of flood waters." It provides for co-operation with the states to those ends and suggests that the federal government expend $500,000 annually for twenty years for its part of the work.

## *Union Officials Wounded In "Wild Cat" Strike*

An attempt by sub-district officials of the United Mine Workers to protest a "wild cat" strike at Zeigler, Ill., Aug. 12, resulted in a riot in which Lon Fox, president of sub-district No. 9; E. C. Cobz, vice-president of sub-district No. 9, and Hezzie Hindman, president of the West Frankfort Trades and Labor Assembly, were severely wounded. One miner was fatally injured and a score of others hurt during the rioting that came as a culmination of the three-day outlaw strike.

When the strike was called by the local union without approval of the sub-district chiefs, the Zeigler union heads were deposed by the sub-district officials. The appearance of the officials at a meeting of the strikers incited the riot. Fox and Cobz were beaten and stabbed and Hindman received a bullet wound. Three arrests have been made by the Zeigler authorities, who have the situation well in hand.

## Central Pennsylvania Output 70 per Cent Non-Union

Out of 1,000 coal mines in the central Pennsylvania bituminous field, but 400 are in operation, according to Charles O'Neill, secretary of the Central Pennsylvania Coal Producers' Association. Of these, not all are running full time and the larger number in operation are on the 1917 scale basis.

In the Black Lick region all the mines are operating union except two at Nant-y-Glo, where non-union output exceeds union. All mines on the Cambria & Indiana R.R. branch are operating non-union and in the Barnesboro region two mines have shifted to the 1917 scale. In Clearfield County practically all mines are union, while on the Tyrone division and in the Snow Shoe district on the Pennsylvania R.R. the mines are all returning to the 1917 basis. In the New York Central R.R. district all the mines east of Clearfield are non-union. In the Philipsburg district all mines at work are non-union with the exception of Winburne and Grassflat. In the Allegheny Valley, extending from Kittanning to Brady's Bend, all the mines along the Pennsylvania R.R. are working on the 1917 scale, and the same is true of all the mines on the Pittsburgh & Shawmut R.R. The district is producing 50 per cent of its normal production, 70 per cent of this by non-union mines.

A bond issue is being floated by the West Virginia-Pittsburgh Coal Co., of Brooke County, W. Va., in the amount of $850,000. The treasurer of the company makes the statement that the property is valued at $2,606,602. Net earnings of the company available for depreciation, depletion, interest and federal taxes for the five years ended Dec. 31, 1924, have averaged $252,500, or two and one-half times the total annual interest and sinking-fund requirements.

## Business Publishers Unite In Export Field

Establishment of the Business Publishers International Corporation to meet more adequately the demand for specialized business publications in the fields of overseas trade and industry was announced Saturday, Aug. 15, by the McGraw-Hill Company and the United Publishers Corporation. They jointly will control the new organization.

Three publications already in existence form the nucleus of the new company, which will maintain editorial and business representatives in the important commercial centers abroad. The papers are *Ingeniería Internacional* (International Engineering), a McGraw-Hill industrial and engineering monthly circulating in Spain and Latin America; *El Automovil Americano* and *The American Automobile* (Overseas Edition) in Australia, New Zealand, South Africa, India, Great Britain, Norway, Denmark, Holland, Belgium, in the Orient and other territories.

The new corporation is headed by Mason Britton, president. He is vice-president of the McGraw-Hill Company. John Abbink, until the formation of the new publishing firm, business manager of *Ingeniería Internacional,* is vice-president and general manager. J. L. Gilbert, who was business manager of the two automotive publications, is vice-president and secretary. C. A. Musselman, president of the Chilton Class Journal Company, the automotive publications division of the United Publishers Corporation, is treasurer.

## Ohio River Too Low for Heavy Movement of Coal

Low water in the Ohio River throughout its length practically has stopped coal movement in the lower river. Four towboats with 40,000 tons of coal moved as far south as Cincinnati, O., on an artificial rise in the Ohio, arriving at the Queen City, on Aug. 8, when the artificial wave was caused by releasing water from behind dams in upper stretches of the river. Two additional tows of 20,000 tons were to come in from Portsmouth, O., on a small wave. Some of this coal is for Louisville, Ky.

## Bituminous Coal Loaded Into Vessels at Lake Erie Ports During Season to End of July

(In Net Tons)

| Ports | Railroads | 1925 Cargo | 1925 Fuel | 1925 Total | 1924 Cargo | 1924 Fuel | 1924 Total | 1923 Cargo | 1923 Fuel | 1923 Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Toledo | Hocking Valley | 4,140,696 | 119,047 | 4,259,743 | 3,123,137 | 92,469 | 3,215,606 | 2,314,486 | 69,256 | 2,383,742 |
| | Big Four | 740,933 | 3,573 | 744,506 | 1,375 | 46 | 1,421 | ......... | ...... | ......... |
| | N. Y. C.-Ohio Central Lines | 421,025 | 33.758 | 454,783 | 27,095 | 1,055 | 28,150 | 817,014 | 25,428 | 842,442 |
| | Baltimore & Ohio | 1,535,976 | 47,939 | 1,583,915 | 768,400 | 25,778 | 794,178 | 1,233,115 | 36,349 | 1,269,464 |
| Sandusky | Pennsylvania | 2,505,212 | 75,425 | 2,583,637 | 1,299,469 | 39,916 | 1,339,385 | 1,398,824 | 42,331 | 1,441,155 |
| Huron | Wheeling & Lake Erie | 361,808 | 16,207 | 378,015 | 365,880 | 17,686 | 383,566 | 718,221 | 26,586 | 744,807 |
| Lorain | Baltimore & Ohio | ‡327,343 | 63,022 | 390,365 | 795,192 | 64,967 | 860,159 | 1,511,966 | 86,094 | 1,598,060 |
| Cleveland | Pennsylvania | 117,804 | 79,779 | 197,583 | 642,975 | 84,111 | 727,086 | 906,827 | 83,495 | 990,322 |
| | Erie | 18,138 | 1,252 | 19,390 | 151,289 | 5,618 | 156,907 | 475,844 | 20,649 | 496,493 |
| Fairport | Baltimore & Ohio | ‡226,608 | 44,302 | 270,910 | 240,717 | 45,656 | 286,373 | 326,908 | 32,708 | 359,616 |
| Ashtabula | New York Central | 144,524 | 48,296 | 192,820 | 467,889 | 55,317 | 523,206 | 1,854,363 | 121,693 | 1,976,056 |
| | Pennsylvania | 262,413 | 36,609 | 299,022 | 525,338 | 41,553 | 566,891 | 1,020,053 | 42,721 | 1,062,774 |
| Conneaut | Bessemer & Lake Erie | 570,796 | 114,060 | 684,856 | 834,364 | 113,034 | 947,398 | 1,394,998 | 98,505 | 1,493,503 |
| Erie | Pennsylvania | 84,613 | 26,127 | 110,740 | 245,541 | 37,645 | 283,186 | 311,596 | 39,842 | 351,438 |
| Totals | | 11,457,889 | 709,396 | 12,167,285 | 9,488,661 | 624,851 | 10,113,512 | 14,284,215 | 725,657 | 15,009,872 |
| Storage Loading | | †33,017 | 1,048 | 34,065 | *182,060 | 4,940 | 187,000 | ......... | ...... | ......... |

*Coal loaded into vessels in December, 1923, after close of navigation and forwarded from Lake Erie ports during 1924.

†Coal loaded into vessels in December, 1924, after close of navigation and forwarded from Lake Erie ports during 1925.

‡Includes 5,195 tons cargo 673 tons fuel diverted from Lorain, B. & O. Compiled by Ore & Coal Exchange, Cleveland, Ohio; H. M. Griggs, manager.

# Though Gulf Widens Between Miners And Operators Federal Intervention Is Still Only a Remote Possibility

**By Paul Wooton**
Washington Correspondent of *Coal Age*

As the breach widens between the anthracite operators and their men and as the possibility increases that the union bituminous field may become involved indications still are that federal intervention is going to be withheld more firmly than ever before. If there be federal action it is more likely to come from Congress than from executive officials. Even Congress is slow to take a hand in an industrial dispute, but it may have an opportunity to thrust in its arm earlier than Dec. 7, as the pressure for an extra session, so that tax revision may be taken up, is becoming increasingly great.

The administration will be less inclined than even to mingle in the affairs of private business, even in the simplest rôle of counselor, since Secretary Hoover's experience with the Jacksonville agreement.

Observers in the executive departments, representing as they do the whole public, are disinclined to criticize either party to the existing controversy, but coal specialists outside the government service are frank in expressing the opinion that the mine workers are deliberately picking a quarrel. They believe Mr. Lewis' position with regard to the attendance of S. D. Warriner and W. J. Richards is untenable. There is general concurrence in the view that one party to a wage negotiation may not dictate who shall represent the other side any more than one party to a business deal may pick the men with whom they will confer.

### Hold Miners Responsible

On the other hand, those familiar with these and previous negotiations do not blame Messrs. Warriner and Richards for feeling that life is too short to expend it arguing with those who do not intend to be convinced at any cost. It is idle to speculate as to what Messrs. Warriner and Richards have in their minds. The plain fact is that the negotiations have been broken off and the mine workers have to shoulder the responsibility for the break. Nothing they can say will make the public think otherwise.

The anthracite decision of the Interstate Commerce Commission has taken the wind out of Mr. Lewis's sails in the matter of the joint application for reduced freight rates. It hardly is supposed that he will renew his proposal as it obviously would be hopeless to go before the Commission seeking a rate reduction when it just has been over the ground and has made a decision.

The decision also supports strongly the contentions of the operators that they are facing permanent loss of market. While the all-rail rate on smokeless coal is more than the water rates to seaboard and some interior points, the additional cost, however, is declared to be much more than offset by the lack of breakage which occurs when the coal is loaded in West Virginia and moves in the same car to destination in New England. If the coal goes by water with attendant handling on and off ship, a high percentage of fine coal inevitably results. More significance than heretofore is attached to efforts to establish that the bituminous contract also is involved, but it is noted that the public is not being stampeded. The Atlantic City story has been palling steadily, judging from the newspaper space accorded it.

## Gowen Mines Leased to Roberts Syndicate

A syndicate headed by Graham Roberts, of Philadelphia, has leased for twenty years the Gowen No. 1 and No. 3 collieries, which have been operated by Coxe Bros. & Co., Inc., for the past forty-five years. The lease was given by the West Buck Mountain Coal & Iron Co., owners of the land, who had invited bids from several large operators, including the former lessees.

The property consists of more than four thousand acres in Luzerne, Schuylkill and Columbia counties, at the western end of the Big Black Creek coal basin, about thirteen miles west of Hazleton, Pa. The operations produce Buck Mountain seam coal. The new operators intend to increase the annual production and operations will be started as soon as the details of the lease are completed.

Mr. Roberts has associated with himself, among others, David E. Williams, Jr., of the firm of David E. Williams & Co., miners and shippers of anthracite and bituminous coal, with headquarters in Philadelphia; S. J. Livingston, of Philadelphia, president of the Seaboard Coal Mining Co., and J. E. Altmiller, W. P. Millington and C. H. Altmiller, mining engineers, of Hazleton. The new firm will operate under the name of the Buck Mountain Coal Co.

## Roads Drop Coal Holdings

Segregation of the Lehigh Valley Railroad Co. and the Lehigh Valley Coal Co. is 76 per cent complete and "excellent progress" is being made in separating the Reading Company from its coal holdings, according to an announcement by the U. S. Department of Justice on Aug. 11. The two railroad companies were ordered by court decrees to divest themselves of all coal properties, and when the dissolution processes have been worked out, the announcement said, "there will be a complete separation of ownership, management and control between the several anthracite carriers involved and their former subsidiary coal companies."

## *Engineers Say "No" Again*

The United Mine Workers have quit trying to convince their labor-union brethren, the Brotherhood of Locomotive Engineers, that the Coal River Collieries Co. mines in West Virginia ought to get back on a union basis and work under the Jacksonville agreement. Negotiations looking toward that end have been abandoned, according to William H. Thompson, secretary of District 17, who, with Percy Tetlow, president of the District, has been in lengthy conference with President J. W. Dunigan and Sales Manager C. C. Huffman, of the coal company owned by the Brotherhood. The miners' union has been driving against the non-unionism of the Brotherhood mines ever since the late Warren S. Stone, president of the engineers' union and head of the coal company, refused to accept the Jacksonville agreement and announced his company had to operate non-union or quit. However, in spite of the coal company's recent final and absolute refusal to commit corporate suicide at the request of the United Mine Workers, Mr. Thompson said, "we cling persistently to our view that the Jacksonville wage agreement is just, right and equitable."

## Utilities Consume More Coal In June Than in May

Public utility power plants in the United States consumed 3,101,656 net tons of coal in June, according to a report by the U. S. Geological Survey. This compares with 2,965,155 tons in May, as shown by revised figures. Fuel oil consumption by utilities in June totaled 774,544 barrels, compared with 675,393 barrels in May.

The average daily production of electricity by public-utility plants in June was 173,500,000 kw.-hr.—about 3½ per cent larger than the average daily output for May.

Since the rate of output of electricity by the use of water power decreased from May to June, due to the usual seasonal decline in the flow of streams, the increase in the average daily rate of the production of electricity by the use of fuels was most pronounced. This marked increase in average daily output in June, as compared with May, may be due in part to an increase in the demand for power and in part to there being one more workday in June than in May, even though May is a 31-day month.

Sealed proposals will be opened by the Superintendent of Lighthouses, Staten Island, N. Y., at 2 p.m., Aug. 24, 1925, for approximately 1,800 tons of bituminous coal, in quantities as required from Oct. 1 to Dec. 31, 1925, delivered and trimmed into bunkers of lighthouse vessels, under coal chute at contractor's pocket, New York. Further information will be given on application.

## Lewis Calls His Soft-Coal Captains Into Conference; No Anthracite Break Yet

John L. Lewis and his chief aides in the United Mine Workers met at the Bellevue-Stratford Hotel, Philadelphia, Pa., on Monday of this week. A long, secret conference was followed by the "explanation" that the meeting had been held to discuss "ordinary union business." To add the proper fillip of mystery to the gathering it was intimated that a like explanation would be given for any subsequent conferences which might be staged during Mr. Lewis' sojourn in the City of Brotherly Love.

The fact that Van A. Bittner, chief organizer in West Virginia, and George W. Lewis, who has been watching developments in Nova Scotia, joined International Vice-President Murray and International Secretary-Treasurer Kennedy at the meeting led some observers to believe that the union leaders were mapping out a campaign for a general strike in the soft coal regions. Such a strike was hinted at by Mr. Lewis when he addressed the tri-district convention of anthracite miners several weeks ago. The hint was repeated in more threatening language later by Mr. Bittner in telegrams to Secretaries Davis and Hoover, without sweeping the Washington administration off its feet.

That the breakdown of the Jacksonville agreement in many parts of the bituminous fields is worrying union leaders is well known. The Van Bittner telegrams were an open appeal to the government to help the union whip back into line districts that had thrown off the union yoke. In some quarters it is believed that the Bourbonism shown by the union in the Atlantic City conferences with the anthracite operators was due to the bituminous situation and was part of a strategical movement to scare the government into intervening in the anthracite dispute and then to demand that it back up the United Mine Workers in the union's bituminous campaign as the price of labor's consent to intervention in anthracite.

The breach between anthracite operators and union leaders seems as wide as ever. Neither side has announced any step toward ending the deadlock created by Mr. Lewis' refusal to discuss union demands further with the Inglis committee unless assured in advance of favorable consideration. The national administration preserves its attitude of silence and the expected invitation to journey to Harrisburg has not yet arrived. Governor Fuller of Massachusetts, however, has asked his fellow New England executives to meet with him at Boston on Aug. 21. "to take definite action on the fuel situation with the object of relieving New England from its dependency on anthracite as a fuel."

## *Frick Company Fires 265 Coke Ovens*

The H. C. Frick Co. last week fired 265 coke ovens in the Connellsville (Pa.) region, of which 150 are at Hecla, 50 at Phillips and 65 at Leith. They were put in blast Tuesday morning. The putting in blast of an additional furnace at Lorain, Ohio, early in the week caused the demand for coke.

The general increase in the demand for iron, it is said, will cause more furnaces to go into blast soon and in this event the firing of more coke ovens will follow. While no official information has been forthcoming, it was said yesterday that in all probability several hundred additional ovens will be fired this or next week.

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Within a few weeks there will be a department of the Safety Division of the U. S. Bureau of Mines to deal with electrical hazards. This will be a field service in which attention will be given to the reduction of electrical hazards, such as defective wiring and faulty installations. Limited at the outset to what is known as District G, which comprises New Mexico, Colorado and Wyoming, the work will be in charge of K. H. Marshall.

## Britons Muddle Along in Their Coal Tangle

The principal advance made during the past week in the British coal situation was that a great deal of oratory was released in Parliament during the debates about the government subvention and the formation of the Royal Commission of Inquiry which is to study all phases of England's coal problem during the winter. The Commission is not yet named. A. J. Cook and Tom Smith, miner leaders, want the miners' federation officially represented, but Prime Minister Baldwin will not agree. Mr. Cook has announced that the Reds are threatening him and that the government ought to protect labor leaders against insidious attacks.

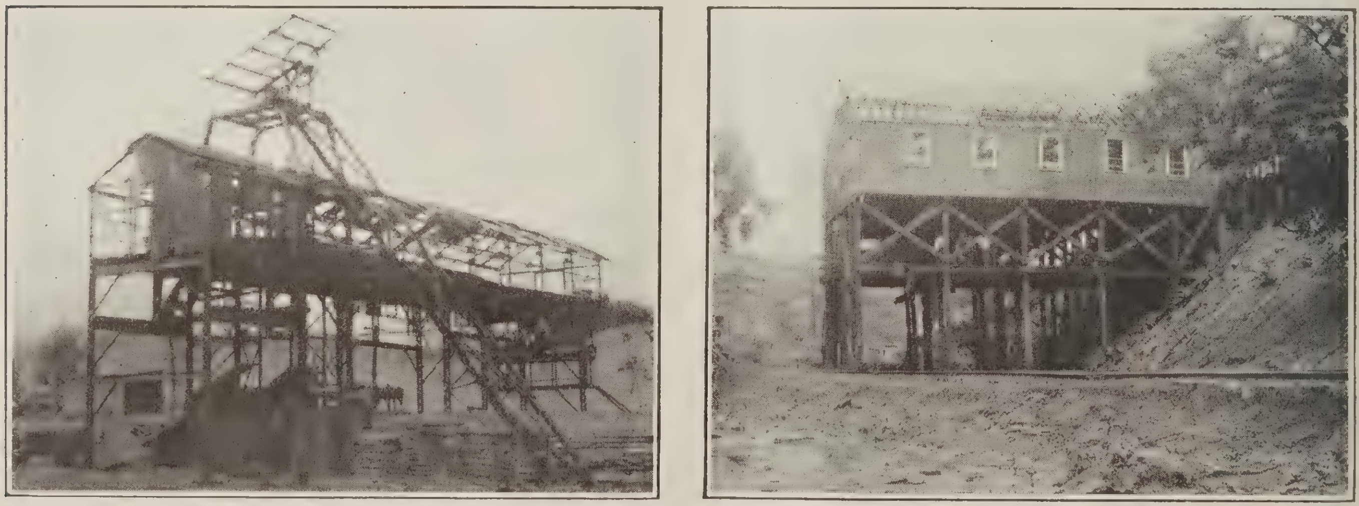
The subvention to wages of coal miners during the next nine months pending an inquiry by a Royal Commission involves the maintenance of the 87 to 13 ratio, which means wages will receive 87 per cent of the proceeds of the industry after deduction of costs other than wages. Wherever this percentage provides a sum below the 1924 minimum wages agreement, the difference will be met by a subvention to coal districts rather than to individual mines as units. Owners are guaranteed 13 per cent of the proceeds of the industry up to 15d. profit per ton, beyond which profits go to meet subvention.

## Alaska Coal Deposits Prove Unexpectedly Valuable

Development of Alaska coal mines is revealing that the deposits there are much more valuable than early prospecting indicated, according to O. P. Hood, of the Bureau of Mines, who visited the northern territory recently.

Large dredging operations which are to begin next season will provide a new outlet for Alaska coal. The dredges are to be operated electrically from a central station, which will burn coal.

Development work at the several operating properties, Mr. Hood found, has uncovered high-grade coal which has not been seriously disturbed by faulting.



**Pittsburgh Coal Co. Scraps Idle Plants**

The Pittsburgh Coal Co. is proceeding with undiminished vigor in the work of dismantling a number of plants at its less efficient and higher cost operations. The pictures show two of the tipples that are being scrapped. At the left is depicted the tipple in course of destruction at Laurel Mine No. 2, and at the right the demolition of the tipple at Beadling, Pa.

# Union Makes No Progress in Strike Zone of West Virginia—Open-Shop Tonnage Grows—One Man Beaten Up

The cause of unionism in northern West Virginia was aided by nothing that happened during the past week in that region, where mine owners and coal miners who wanted to work combined to throw the union out months ago. The tattered remaining forces of unionism, still going through the motions of a strike, are making little impression and the proportion of non-union coal mined continues to mount over the total produced at union mines. The week saw a little roughness, a great many rumors, and a near-schism within the ranks of the West Virginia Federation of Labor, dominated by coal unions.

The Federation held an election Aug. 12. C. Frank Keeney, once president of District 17, ran for the presidency of the Federation and, after getting himself nominated, withdrew from the convention with 87 delegates from Mine Workers' locals, declaring he would try to split the Federation unless the administration of it "gave the members a square deal." Finally he was mollified and returned to the convention, withdrawing his candidacy. John W. Eaton was re-elected president. Keeney has been charged with attempting to start a West Virginia miners' union independent of Indianapolis, so that a deal could be made with mine owners for operating mines at a reduced wage. The demonstration in the Federation convention indicates something of his strength within labor ranks in his state.

### Deputy Sheriff Beaten

The nearest thing to rioting in the strike district took place at Laura Lee, one of the Hutchinson Coal Co. towns, Aug. 9, when a group of striking miners beat up J. E. Bacorn, a deputy sheriff, who was suspected of being a "hired gunman" employed by the Hutchinson Coal Co. He was in a strikers' meeting and was ordered to leave. He refused and the fight followed. Van Bittner, International Representative in the strike zone, took occasion to speak about the incident, declaring that since "the high-handed Sheriff Don Chafin" of Logan County had been sentenced to serve a term in the penitentiary Chafin tactics on the part of sheriffs had been transferred to other counties.

Mr. Bittner, C. Fremont Davis, financial agent, and James McCleary, international representative, were in conference with John H. Jones of Pittsburgh, Pa., president of the Bertha Consumers Co. during the end of last week. Effort is being made to have the company resume operation at Rachel mine at Downs on a union basis. The union claims that the company has evicted some and expects to evict more union miners' families within a short time.

In the first four days of last week the non-union mines of the striking region produced 6,397 cars of coal, against 1,021 cars loaded by union mines. The peak daily non-union production in northern west Virginia was reached Aug. 13, when 1,679 cars were produced in the 12½ counties, excelling the previous daily peak of Aug. 7, when 1,622 cars were loaded. On the average there were 178 mines at work on a non-union basis in that period last week, compared to 13 union mines. The largest number of non-union mines to work any one day since April 1, was on Aug. 13, when 180 were reported active.

During last week several new production records were reached on the various divisions. On Aug. 13 a new daily non-union record was attained on the Monongahela Ry. and a third on the Charleston Division, B. & O. R.R., at 101 cars. The B. & O. Cumberland Division, mines loaded 155 cars on Aug. 12, which was also a new record.

Picketing in the region has eased up, although it breaks out in spots spasmodically. The United Mine Workers held mass meetings Aug. 16 at Jere mine in Scott's Run, Gypsy and Kingmont, points where non-union mines thrive.

The union broke into a lively advertising drive in a Fairmont newspaper last week when it attacked the American plan. They charged that non-union coal companies refused to let farmers sell produce and vegetables in the open shop mining towns. Operators say that it is propaganda. Others admit farmers are interviewed as they come in because it is necessary to have a line on who enters company property.

The strike zone of the Northern Panhandle section is quiet. According to reports, the United Mine Workers of America have invited William Green, president of the American Federation of Labor, to address a mass meeting in the latter part of September.

At a recent miners' mass meeting held at Warwood, near Wheeling, announcement was made that 200 miners employed by the Richland Coal Co. and Costantza Coal Co., both of which withdrew from the United Mine Workers of America, have asked to be reinstated. The Richland mine is in the hands of a receiver, but the Costantza mine is active.

### *Hoover in Coal Merger? No!*

Talk of the proposed gigantic merger of West Virginia, eastern Kentucky and Tennessee non-union mines continues to absorb the attention of a great many coal men the country over. One story had it that Herbert Hoover, Secretary of Commerce, had been approached with the suggestion that he head the $500,000,000 corporation-to-be and that he had "listened with interest." Mr. Hoover, in his office in Washington, said this week that he knew nothing about the reported large merger and has no thought of associating himself with any such enterprise. Another story to the effect that the Pittsburgh Coal Co. was to be one of those merged merely drew a flat denial from that concern. Questionnaries to mine owners are circulating throughout southern West Virginia, eastern Kentucky and Tennessee.

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## Two More Pomeroy Tipples Burned; $150,000 Loss

The tipple of Stalter Essex Mine No. 1, on Thomas Fork, and that of the Blackstone Coal Co., at Rutland, two of the largest in the Pomeroy (Ohio) field, were burned at about 3 a.m. Aug. 8, causing a loss of $150,000. They were found to be afire within ten minutes of each other.

Four coal mining plants so far have been destroyed since the beginning of the labor difficulties following the resumption of the mines in the Pomeroy field on the 1917 wage scale.

The Rutland property was formerly owned and operated by the Maynard Coal Co., of Columbus, but was sold a few months ago at a receiver's sale to a company of eighty miners, who have been operating it at full capacity on a co-operative plan.

Those first to see the fire insist it was of incendiary origin. The flooring of the runway had been saturated with some inflammable fluid, which caused the blaze to mount the structure with leaps and bounds, they declared.

The Stalter Essex mine, which had not been in operation for more than a year, is owned by the same company which is operating mine No. 7 near by on the 1917 scale. Mine No. 7 is well scattered and has a strong force of guards, and it would seem impossible for an incendiary to get to it.

At mine No. 1 a half-burned torch consisting of a bunch of cotton waste attached to a long stick by a piece of twine was found. The waste had been saturated with oil.

Steps were taken at once by both companies to rebuild the two tipples. It is announced that both concerns will be running mine-run coal within two weeks and that shaker screens, picking tables and loading booms will be installed later.

The two fires constituted a climax to a series of mine fires and explosions in the Pomeroy mining field which has extended over a period of several months. Other acts of violence were the burning of the tipple at Stalter-Essex mine No. 5, dynamiting of a ferryboat across the Ohio River used by miners and the destruction of a power house at a mine of the Pittsburgh Coal Co. Rewards aggregating $1,800 have been offered for the arrest and conviction of the culprits.

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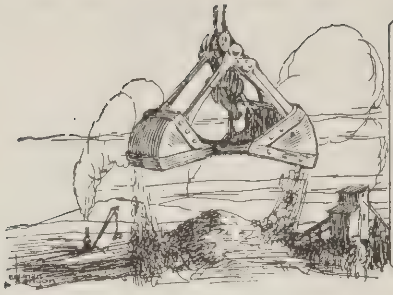
The Fourth International First-Aid and Mine-Rescue Meet, to be held Sept. 10-12, at Springfield, Ill., will be financed by the miners, the entire sum, about $4,000, having been underwritten by a district mine union official. A. D. Lewis, a brother of John L. Lewis, has been named chairman of the committee on arrangements, succeeding the late Martin Bolt, who was the chief of the Department of Mines of Illinois.



# Production And the Market

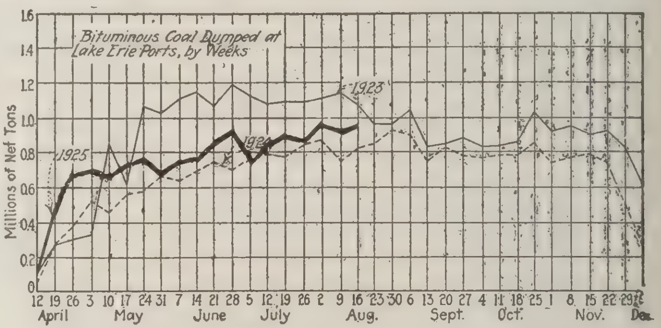
## Soft Coal Shows Gradual Improvement; Anthracite Moves Rapidly

Gradual improvement in demand for bituminous coal, reflected in the moderate, but steady rise in the rate of production which began late in June, and a modest appreciation in price levels characterizes the present position of the soft coal markets of the country. The betterment in demand is more strongly felt in the sale of prepared sizes than in the movement of steam coal. Although the threatened suspension in the hard coal regions must be given credit for some part in the changes of recent weeks, the bigger influence has been the seasonal increase in domestic demand.

These are the days when the country retailer begins to buy more freely because his farmer customers enter the market. If further proof of this is wanted, it is necessary only to point to the fact that the most optimistic reports on the domestic outlook come from the Middle West, the South and the Southwest. The Middle Atlantic and New England states, the territory of heaviest anthracite consumption, still find improvement in the domestic bituminous market a hope rather than a reality.

The improvement in domestic demand, however, has not been without its drawbacks. It has eliminated the necessity of crushing mine-run in the Illinois fields, but it has also brought such a production of fine coal both there and in adjacent fields that prices on screenings have slid off. Eastern Kentucky, it is true, has been an exception in this decline, but other parts of that state and Indiana have not fared as well. From Ohio, West Virginia and western Pennsylvania, however, come reports of a stronger undercurrent in steam coal prices generally and a similar feeling of optimism pervades most Atlantic seaboard markets.

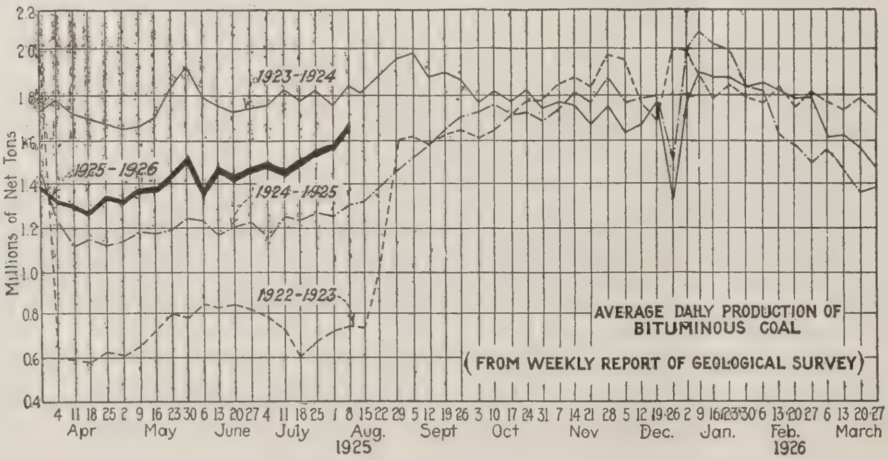
As might be expected, anthracite demand maintains a keen edge. The major producers are in a position where they can close the doors to business tendered by new customers. Some of the independents also have turned a deaf ear to orders and decline to quote on future shipments. There are others, however, who have reverted to auction-block salesmanship—but not with a great measure of success. At the close of last week there was considerable independent tonnage afloat in New York Harbor awaiting buyers willing to pay 40 to 50c. above average maximum line quotations.



Bituminous coal output for the week ended Aug. 1 is estimated at 9,957,990 net tons, as compared with 9,456,000 tons the week preceding. Anthracite output declined from 2,087,000 to 2,068,000 net tons.

*Coal Age* Index of spot prices of bituminous coal last week advanced one point to 167, the corresponding price being $2.02.

Dumpings at Lake Erie ports during the week ended Aug. 16 were: Cargo, 894,526 net tons; steamship fuel, 54,526 tons—a total of 949,052 tons, compared with 941,989 tons the week preceding. Hampton Roads dumpings in the week ended Aug. 13 totaled 438,456 net tons, compared with 461,259 tons the preceding week.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| July 25 (*a*) | 7,785,000 | 9,343,000 |
| August 1 (*a*) | 7,723,000 | 9,456,000 |
| August 8 (*b*) | 8,036,000 | 9,957,000 |
| Daily average | 1,339,000 | 1,659,000 |
| Cal. yr. to date | (*c*) 274,615,000 | 285,493,000 |
| Daily av. to date | 1,477,000 | 1,533,000 |
| **ANTHRACITE** | | |
| July 25 | 1,837,000 | 2,049,000 |
| August 1 | 1,720,000 | 2,087,000 |
| August 8 | 1,664,000 | 2,068,000 |
| Cal. yr. to date | (*c*) 55,373,000 | 55,992,000 |
| **BEEHIVE COKE** | | |
| August 1 (*a*) | 95,000 | 122,000 |
| August 8 (*b*) | 89,000 | 124,000 |
| Cal. yr. to date | (*c*) 6,591,000 | 5,978,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Outlook Brightens

In the Midwest business is quite satisfactory in the coarser sizes of domestic coal from Indiana and Illinois. The mines best situated in Indiana are those producing Fourth Vein coal and one or two that produce freak Fifth Vein coal. In Illinois the leaders are the Franklin County operators and some in Saline County. Orders have been coming in in such a satisfactory manner for 6-in. lump that many producers have temporarily stopped soliciting business for it. The demand for 6x3-in. egg and for 3x2-in. egg is fair, but the smaller domestic nut sizes are not moving forward in great volume. Depending on developments in the East, further price changes may be put in effect soon, although most producers are evasive on this point, preferring the policy of watchful waiting for the time being.

Steam coals hit a temporary sag, screenings slipping about 10c. in practically all of the producing fields. This was brought about by increased tonnage from the retailer and by the fact that the big industrials in Chicago are buying on the open market only for current needs. It is expected that the steam sizes will come in for a slow and gradual advance as Sept. 1 approaches. This prediction is based on the fact that there is little industrial coal in storage in Chicago. Many Illinois and Indiana mines that have been closed since early last spring are reopening.

Eastern coals, especially smokeless, are extremely active. A number of producers have withdrawn their $3.25 circular to the retail trade ($3 to the wholesalers), refusing to book any more business until they clean up some of their current obligations.

Anthracite coal is in very strong demand. Some of the big hard coal companies with sales offices in Chicago have instructed their offices to withdraw all prices on certain sizes and to take on very little business on the other sizes available for shipment.

The tone of the Chicago market on the whole is very satisfactory, with more improvement in sight.

In the Williamson and Franklin County fields there is much activity. The crushing of mine-run has practically stopped because domestic business has picked up enough to enable a sufficient tonnage of screenings to come through to take care of contracts. Some mines that belong to big companies are working five days a week but the average working time is two to three. There has been a good demand for lump and egg up until this week when lump has dropped off but it is pretty well sold up ahead. Domestic is moving in spurts and shows that the market is not steady. Railroad tonnage is unusually good. Strip mines are practically working full time. Prices are not steady.

In the Duquoin field working time is from three to four days a week at the mines that are working and strip mines are working full time. There are no changes in prices.

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Aug. 18 1924 | Aug. 3 1925 | Aug. 10 1925 | Aug. 17 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.60 | $2.85 | $2.85 | **$3.00@$3.50** |
| Smokeless mine run | Columbus | 2.00 | 1.85 | 1.85 | **1.80@ 2.00** |
| Smokeless screenings | Columbus | 1.20 | 1.35 | 1.35 | 1.25@ 1.50 |
| Smokeless lump | Chicago | 3.85 | 3.25 | 3.25 | 3.25 |
| Smokeless mine run | Chicago | 1.85 | 2.00 | 2.00 | 1.90@ 2.10 |
| Smokeless lump | Cincinnati | 3.85 | 3.00 | 3.10 | **3.50@ 4.00** |
| Smokeless mine run | Cincinnati | 1.85 | 2.00 | 2.05 | **2.50** |
| Smokeless screenings | Cincinnati | 1.35 | 1.30 | 1.40 | **1.50** |
| *Smokeless mine run | Boston | 4.15 | 4.40 | 4.30 | 4.25@ 4.35 |
| Clearfield mine run | Boston | 1.85 | 1.75 | 1.75 | 1.65@ 1.90 |
| Cambria mine run | Boston | 2.45 | 1.95 | 1.95 | 1.85@ 2.10 |
| Somerset mine run | Boston | 2.10 | 1.85 | 1.85 | 1.75@ 2.00 |
| Pool 1 (Navy Standard) | New York | 2.30 | 2.55 | 2.55 | 2.35@ 2.75 |
| Pool 1 (Navy Standard) | Philadelphia | 2.80 | 2.60 | 2.60 | 2.45@ 2.75 |
| Pool 1 (Navy Standard) | Baltimore | ..... | 1.85 | 1.85 | 1.80@ 1.95 |
| Pool 9 (Super. Low Vol.) | New York | 2.05 | 1.95 | 1.95 | 1.80@ 2.10 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.00 | 2.00 | 1.85@ 2.20 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.95 | 1.75 | 1.75 | 1.65@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.85 | 1.75 | 1.75 | 1.65@ 1.90 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.70 | 1.70 | 1.60@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.70 | 1.60 | 1.60 | 1.55@ 1.65 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.60 | 1.60 | *1.50@ 1.70* |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.40 | 1.40 | 1.35@ 1.45 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.60 | 1.55 | 1.45@ 1.70 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.50 | 1.50 | 1.45@ 1.60 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.35 | 1.35 | 1.30@ 1.45 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.40 | 2.40 | **2.40@ 2.50** |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.30 | 1.50 | 1.50 | 1.40@ 1.60 |
| Kanawha lump | Columbus | 2.10 | 2.00 | 2.00 | 1.90@ 2.15 |
| Kanawha mine run | Columbus | 1.40 | 1.40 | 1.40 | 1.35@ 1.50 |
| Kanawha screenings | Columbus | 1.05 | 1.15 | 1.15 | **1.25@ 1.35** |
| W. Va. lump | Cincinnati | 2.25 | 2.35 | 2.35 | 2.25@ 2.50 |
| W. Va. gas mine run | Cincinnati | 1.55 | 1.45 | 1.55 | 1.50@ 1.65 |
| W. Va. steam mine run | Cincinnati | 1.40 | 1.30 | 1.45 | 1.40@ 1.50 |
| W. Va. screenings | Cincinnati | .90 | 1.15 | 1.30 | *1.10@ 1.25* |
| Hocking lump | Columbus | 2.45 | 2.15 | 2.15 | **2.25@ 2.50** |
| Hocking mine run | Columbus | 1.55 | 1.55 | 1.55 | 1.45@ 1.70 |
| Hocking screenings | Columbus | 1.05 | 1.35 | 1.35 | **1.35@ 1.50** |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.25 | 2.25 | **1.95@ 2.60** |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.90 | 1.85 | *1.80@ 1.90* |
| Pitts. No. 8 screenings | Cleveland | 1.30 | 1.45 | 1.40 | *1.35@ 1.45* |

| Midwest | Market Quoted | Aug. 18 1924 | Aug. 3 1925 | Aug. 10 1925 | Aug. 17 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $2.85 | $2.85 | $2.85 | $2.75@$3.00 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.85 | 2.00 | 2.00 | *1.65@ 2.25* |
| Central Ill. lump | Chicago | 2.60 | 2.60 | 2.60 | 2.50@ 2.75 |
| Central Ill. mine run | Chicago | 2.10 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central Ill. screenings | Chicago | 1.60 | 1.70 | 1.70 | *1.35@ 1.75* |
| Ind. 4th Vein lump | Chicago | 2.75 | 2.85 | 2.85 | 2.75@ 3.00 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.80 | 1.80 | 1.80 | *1.50@ 1.75* |
| Ind. 5th Vein lump | Chicago | 2.50 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.50 | 1.50 | 1.50 | *1.30@ 1.60* |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.25 | 2.25 | *2.00* |
| Mt. Olive screenings | St. Louis | 2.00 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.15 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.20 | 1.25 | 1.30 | 1.25@ 1.40 |
| West Ky. block‡ | Louisville | 2.20 | 1.80 | 1.80 | **1.75@ 2.00** |
| West Ky. mine run | Louisville | 1.60 | 1.15 | 1.15 | **1.10@ 1.50** |
| West Ky. screenings | Louisville | 1.20 | .90 | .85 | *.70@ .85* |
| West Ky. block‡ | Chicago | 2.30 | 1.90 | 2.00 | 1.75@ 2.25 |
| West Ky. mine run | Chicago | 1.55 | 1.35 | 1.35 | 1.15@ 1.60 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.40 | 2.00 | 2.00 | 1.75@ 2.25 |
| Big Seam mine run | Birmingham | 1.75 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.00 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block‡ | Chicago | 2.50 | 2.55 | 2.55 | 2.40@ 2.75 |
| S. E. Ky. mine run | Chicago | 1.60 | 1.70 | 1.70 | 1.60@ 1.85 |
| S. E. Ky. block‡ | Louisville | 2.10 | 2.25 | 2.50 | **2.65@ 3.00** |
| S. E. Ky. mine run | Louisville | 1.50 | 1.55 | 1.55 | 1.35@ 1.75 |
| S. E. Ky. screenings | Louisville | .95 | 1.10 | 1.15 | 1.10@ 1.25 |
| S. E. Ky. block‡ | Cincinnati | 2.35 | 2.35 | 2.55 | 2.40@ 2.75 |
| S. E. Ky. mine run | Cincinnati | 1.55 | 1.45 | 1.50 | **1.40@ 1.75** |
| S. E. Ky. screenings | Cincinnati | 1.00 | 1.20 | 1.30 | *1.10@ 1.25* |
| Kansas lump | Kansas City | 4.50 | 4.25 | 4.10 | **4.25** |
| Kansas mine run | Kansas City | 3.50 | 3.10 | 3.10 | 3.00@ 3.25 |
| Kansas screenings | Kansas City | 2.50 | 2.50 | 2.50 | 2.50 |

* Gross tons, f.o.b. vessel, Hampton Roads.

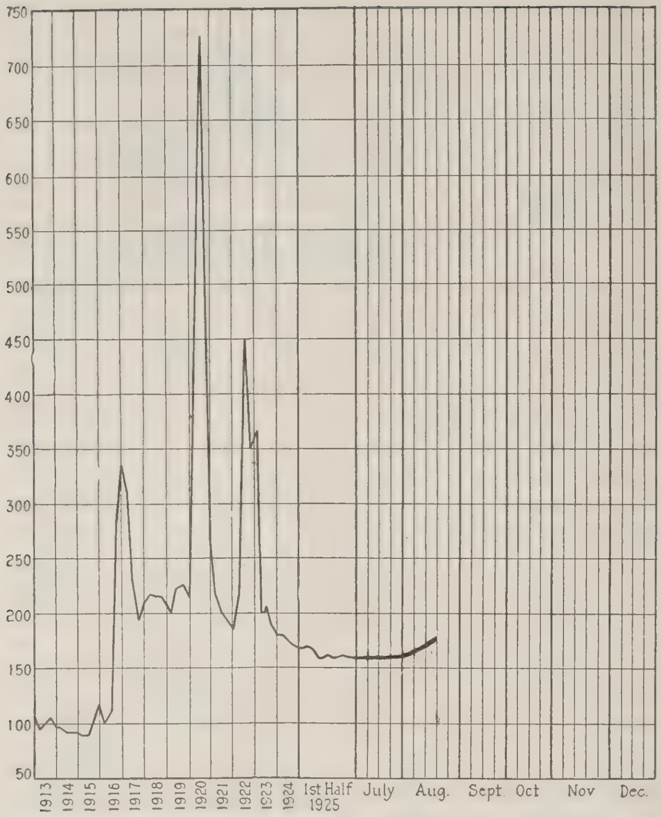
† Advances over previous week shown in **heavy type**; declines in *italics*.

‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | August 18, 1924 | | August 10, 1925 | | August 17, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | .............. | $8.00@$9.10 | .............. | $8.20@$8.90 | .............. | $8.20@$8.90 |
| Broken | Philadelphia | 2.39 | .............. | 8.90@ 9.05 | .............. | 8.25@ 8.90 | .............. | 8.25@ 8.90 |
| Egg | New York | 2.34 | $8.35@$8.75 | 8.65@ 9.10 | $9.25@$9.50 | 8.65@ 8.90 | **$9.50@ $10.00** | 8.65@ 8.90 |
| Egg | Philadelphia | 2.39 | 9.00@ 9.70 | 9.00@ 9.05 | 8.90@ 9.70 | 8.70@ 8.85 | 8.90@ 9.70 | 8.70@ 8.85 |
| Egg | Chicago* | 5.06 | 8.09@ 8.20 | 8.03@ 8.10 | 8.17@ 8.60 | 8.03@ 8.28 | 8.17@ 8.60 | 8.03@ 8.28 |
| Stove | New York | 2.34 | 9.25@ 9.60 | 8.65@ 9.45 | 9.75@ 10.50 | 9.15@ 9.40 | **10.00@ 10.60** | 9.15@ 9.40 |
| Stove | Philadelphia | 2.39 | 9.35@ 10.00 | 9.05@ 9.10 | 9.15@ 10.75 | 9.15@ 9.30 | 9.15@ 10.75 | 9.15@ 9.30 |
| Stove | Chicago* | 5.06 | 8.40@ 8.50 | 8.43@ 8.53 | 8.71@ 8.90 | 8.40@ 8.80 | 8.71@ 8.90 | **8.48@ 8.80** |
| Chestnut | New York | 2.34 | 8.25@ 8.75 | 8.65@ 9.15 | 9.25@ 9.50 | 8.65@ 8.90 | **9.50@ 10.00** | 8.65@ 8.90 |
| Chestnut | Philadelphia | 2.39 | 8.85@ 9.80 | 9.00@ 9.05 | 9.15@ 10.15 | 8.85@ 8.90 | 9.15@ 10.15 | 8.85@ 8.90 |
| Chestnut | Chicago* | 5.06 | 8.18@ 8.33 | 8.28@ 8.34 | 8.24@ 8.45 | 8.10@ 8.28 | **8.35@ 8.60** | **8.28@ 8.50** |
| Pea | New York | 2.22 | 4.25@ 5.25 | 5.75@ 6.00 | 5.00@ 6.00 | 5.00@ 5.55 | 5.00@ 6.00 | 5.00@ 5.55 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | 5.50@ 5.90 | 5.00@ 5.50 | 5.50@ 5.90 | 5.00@ 5.50 |
| Pea | Chicago* | 4.79 | 5.23@ 5.55 | 5.36@ 5.91 | 4.91@ 5.36 | 4.91@ 5.36 | **5.18@ 5.36** | **5.05@ 5.36** |
| Buckwheat No. 1 | New York | 2.22 | 2.00@ 2.25 | 3.00@ 3.15 | 2.15@ 2.50 | 2.50 | **2.25@ 2.60** | 2.50 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | 2.50@ 2.75 | 2.50 | 2.50@ 2.75 | 2.50 |
| Rice | New York | 2.22 | 1.70@ 2.00 | 2.00@ 2.25 | 2.00@ 2.25 | 2.00 | **2.10@ 2.30** | 2.00 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | 2.00@ 2.25 | 2.00 | 2.00@ 2.25 | 2.00 |
| Barley | New York | 2.22 | 1.15@ 1.40 | 1.50 | 1.50@ 1.75 | 1.50@ 1.60 | 1.50@ 1.75 | 1.50@ 1.60 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | 1.50@ 1.75 | 1.50 | 1.50@ 1.75 | 1.50 |
| Birdseye | New York | 2.22 | .............. | 1.50 | .............. | .............. | 1.60@ 1.90 | .............. |

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Aug. 17 | Aug. 10 | Aug. 3 | Aug. 18 |
| Index ........................ | 167 | 166 | 163 | 165 |
| Weighted average price........ | $2.02 | $2.01 | $1.97 | $2.00 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proporions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke: 1913-1918," published by the Geological Survey and the War Industries Board.

A little activity is beginning in the Mt. Olive district. In the Standard field, it is hard to make any statement that covers the field. Some mines run long and lose money. Others run only a day or two a week and get above cost for their coal. Railroad tonnage is fairly good and the feeling is general that Sept. 1 will see business good in this field.

Domestic movement in St. Louis is fairly good on the better grades of coal for storage. Apartment houses are ordering in some Standard and school coal is being put in. Demand for other fuels such as anthracite, smokeless and coke is not good. Southern Illinois high grade is in fairly good favor. Eastern coals are strong in the Illinois territory and weak west of the river. Arkansas is finding good movement into the western part of Missouri.

### Prices Rise with Brisk Trade in Kentucky

Coal prices in Kentucky are steadily advancing on prepared sizes, which are in demand. Screenings from the eastern Kentucky field are very firm, and though quoted at as low as $1.10 in a small way, not much quality stock is to be had under $1.25. Mine-run continues strong at $1.35@$1.75. Prepared starts at $1.75@$2 for small nut, $2.10@$2.35 for egg and small lump and go to $2.65@$3 on 4-in. block, which could be had two weeks ago at $2.

Higher prices prevail also in western Kentucky, where 6-in. block is $1.75@$2; lump and egg, $1.60@$1.85; nut, $1.35@$1.65; screenings, 70@85c., and mine-run, $1.10@$1.50. Screenings, which are in much larger production, are harder to dispose of, as the field has never had a really good market for surplus production in periods of activity.

Buyers are being scared into the market by strike talk in the East. Retailers are buying freely and industrial, utility, railroad and other concerns are stocking. Eastern Kentucky operators have plenty of business in hand with a strong indication of higher markets and better prices.

Retailers have advanced prices 50c. a ton all along the line, notifying good customers in advance and booking a considerable amount of future business.

The market on prepared is 50c. to 75c. a ton higher than thirty days ago, and without loss on the screenings side of the account for eastern Kentucky.

Milwaukee's coal trade is more lively. Both anthracite and bituminous coal are moving out quite freely. Total receipts by cargo for the season up to Aug. 13 aggregate 1,850,067 tons—426,534 tons of anthracite and 1,423,533 tons of bituminous coal. These receipts are greater than last year by 3,896 tons of anthracite, 326,772 tons of bituminous coal, and 330,668 in the total tonnage. During July, Milwaukee received 4,934 tons of anthracite and 32,634 tons of bituminous coal by all rail routes.

### Northwest Sees Gradual Pickup

Retail trade at Duluth and Superior and in some of the larger towns over the Northwest shows signs of picking up, but general movement off the docks is still light. A sharp spurt is expected, however, around the beginning of next month. An improvement has taken place in industrial buying, but individual orders have been small. Better shipments of steam coal to iron mining companies on the Minnesota ranges also are reported. Utilities have been inquiring for substantial tonnages lately, due to a shortage of water.

Thirty-seven cargoes of coal, including only one of anthracite, were unloaded at the docks last week, and sixteen cargoes, all bituminous, were reported en route. During July 1,362,574 tons of bituminous and 139,292 tons of anthracite was unloaded at the docks. For the season to Aug. 1 anthracite receipts totaled 676,609 tons and bituminous receipts, 4,234,111 tons. This is an increase over last year for the same period of 87,459 tons of anthracite and 1,410,138 tons of bituminous.

Shipments from the docks during July were 14,693 cars, of which 6,806 cars were from Duluth and 7,887 from Superior, compared with 11,955 cars during June and with 15,301 cars during July last year. Larger cars were used by the railroads this year, there being few ore cars in commission.

As stocks on the docks Aug. 1 were 675,000 tons of anthracite and 4,350,000 tons of bituminous, retailers and consumers are not worrying over the possibility of an anthracite strike. Then too the use of Pocahontas and other smokeless coals as substitutes is gaining.

Prices of both anthracite and bituminous coals are firm and unchanged. Pocahontas prepared sizes are in demand at $7.50 on dock.

### Trade Picks Up in Southwest

The market is improving throughout the Southwest. Dealers are buying and some consumers are beginning to fill their bins. Operators who did not raise their quotation on Kansas shaft lump to $4.25 on Aug. 1, followed the lead of their competitors on Aug. 15. Kansas shovel lump is now $3.75; shovel nut, $3.50; shovel mine-run, $3, and shovel screenings, $2.50. More mines are expected to be opened in Kansas early in September. McAlester, Okla., has a steady production under the 1917 scale and Henryetta, Okla. also is producing some coal, but under difficulties due to the picketing of mines by miners opposing their operation under less than the 1924 scale. Work in Arkansas gradually is getting under way, part of it under the 1917 scale. Many operators in the Arkansas field are holding back until they see what results attend the efforts of the pioneers to effect a lower scale throughout the state.

In Colorado an increase is noticeable in the demand for domestic coal, and a further substantial increase is expected. There have been no changes in prices during the past week.

The market for Utah's coal mines is slowly improving, but the situation is far from satisfactory. Storage orders are 50 per cent below normal, and normal has been none too good for the past few years. Dealers fear they will be swamped following the first cold storm of fall. Operators report a shortage of closed cars, but they are able to get other equipment in sufficient volume to carry on. Working time is around two and one-half days a week, taking the state as a whole.

One of the largest producers in Utah reports California as the best market for coal at this time. This market is taking 8-in. lump and stove coal, it was stated. The price situation is unchanged, except that there is not so much probability of an increase as there was. Dealers have been making the most of the price raise rumors to get winter storage business, but operators say little about it now.

### Smokeless Strong at Cincinnati

At Cincinnati the long expected rush of buying orders for smokeless coal finally came and within a week there was an advance of $1 a ton on domestic sizes. Now $3.50@$3.75 generally is asked, with some selling agencies in Cincinnati asking $4 for prompt shipment. True this "top" is not an actual price, being intended to curb a mad rush, but three of the biggest companies are asking it. Smokeless nut is $2.50@$2.75; mine-run, $2.25@$2.50, and what free screenings there are command $1.50.

Domestic business generally has moved up, some of the buying being due to strike talk in the East but most of it has been to fill the 25 per cent shortage in the yards and householders' bins. Southeastern Kentucky has moved up the price all along the line with Hazard quoting $2.40@$2.50; Harlan, $2.50@$2.60 and Elkhorn, $2.75 for block. Egg, 2-in. and mine-run are practically in the same position as last week, screenings having a wider spread of $1.10@$1.25, due to the increase in orders for domestic.

Generally speaking West Virginia high-volatile coals have not shared so well in the upturn, 4-in. block being quoted at $2.25@$2.50, with no perceptible change in the other sizes.

There has been no diminution in production, 14,030 loaded cars having passed last week from West Virginia and eastern Kentucky through the Cincinnati district of the American Railway Association. This is the second largest interchange in history. Of these, 3,292 were en route to the lakes.

River business still holds up with around 25,000 tons moved through the Cincinnati harbor this week. Retail figures are unchanged but some dealers are preparing to move up the price.

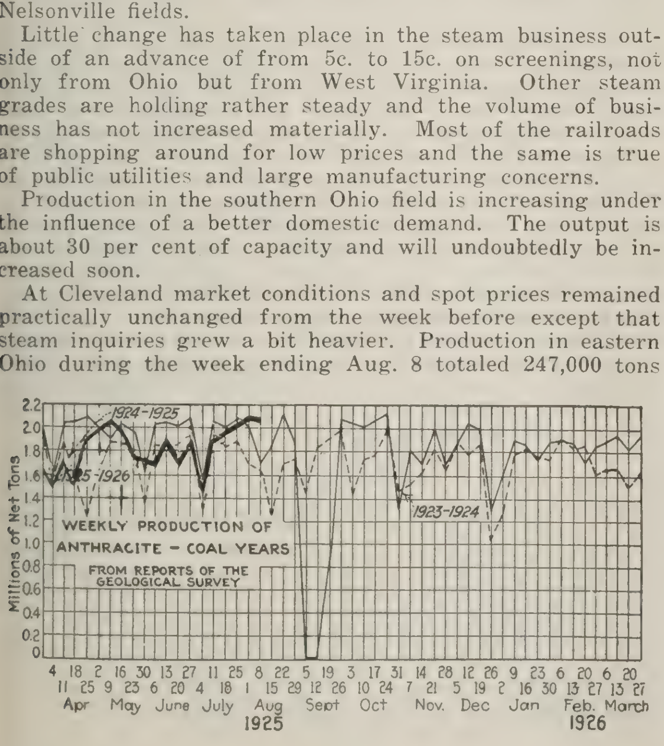
Domestic demand has shown quite an increase in Columbus and central Ohio during the past week. Retailers are hurrying into the market for stocks as householders are placing orders in larger number. The shortage applies to all grades, including smokeless varieties, splints and Ohio mined coals. Retail prices are stronger with smokeless selling at $8@$8.50; splints, $7.25@$7.75 and Hocking and Pomeroy grades at $6@$6.75 delivered.

Mines are being placed in operation in the Hocking Valley field and a generally better tone has developed in domestic circles. While production has not increased as yet to any extent still steps have been taken to almost double the output in certain places in the Crooksville and Nelsonville fields.

Little change has taken place in the steam business outside of an advance of from 5c. to 15c. on screenings, not only from Ohio but from West Virginia. Other steam grades are holding rather steady and the volume of business has not increased materially. Most of the railroads are shopping around for low prices and the same is true of public utilities and large manufacturing concerns.

Production in the southern Ohio field is increasing under the influence of a better domestic demand. The output is about 30 per cent of capacity and will undoubtedly be increased soon.

At Cleveland market conditions and spot prices remained practically unchanged from the week before except that steam inquiries grew a bit heavier. Production in eastern Ohio during the week ending Aug. 8 totaled 247,000 tons which represents 35 per cent of capacity. This was 18,000 tons more than was shipped the week previous.



### Pittsburgh Has Slight Upturn

At Pittsburgh demand is somewhat larger, movement a little heavier and coal is much easier to sell. Movement of domestic coal has begun in a moderate way. Operation has increased to about 20 per cent of capacity. The increase in demand is from the limited territory the district has lately been serving, as lower prices prevent competition with other fields.

There has been a slight change in the price range on gas lump and gas slack, with no change in gas mine-run or in steam coal. The latter may, however, be a shade firmer. Mines with good screening facilities have the advantage, mines shipping mine-run not being particularly better off than a week ago. Gas lump is now quotable at $2.40@$2.50; gas slack is $1.50@$1.60 and steam slack remains at $1.30@$1.40.

The coal situation at Buffalo has not changed much. Quotations are $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run, $1.25@$1.40 for slack; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, $1.30@$1.60 for slack; $1.75@$2 for Allegheny Valley mine-run. Slack is scarce and strong.

### New England Trade Continues Dull

Developments in New England during the week were somewhat less disappointing than was feared. A few shippers have tried to maintain the higher prices of a fortnight ago, but those who have had coal to move have been under pressure to sell at the lower levels reported last week.

In coastwise trade there has been next to no improvement in buying, and sales continue to be restricted for the most part to transactions where there is an inducement to buy.

Accumulations are again the rule at Hampton Roads, with prices fluctuating between $4.25 and $4.50 per gross ton f.o.b. vessel. The slightly remunerative prices of early August drew down a very much increased tonnage, and now the agencies are again seeking buyers. While it is understood the threatened suspension of mining in the anthracite districts is supplying a much better market for bituminous in the Midwest there has been no such excess of buying in Boston. Consumers of bituminous coal remain indifferent and there has been nothing so far to warrant a higher price basis.

On cars at Boston, Providence, and Portland the market is rather uneven. A few factors are trying to keep sales up to the asking figure of $5.60@$5.75, but even they are willing to name the same figures for delivery extended through the winter. Others who are pressed with coal are releasing it at prices from $5.40 up. Boston receipts have been rather light for a fortnight, but it is expected there will be more arrivals during the next ten days.

Within the territory open to Pocahontas and New River from tidewater there has been no improvement in demand for Pennsylvania coals all-rail, but in the narrow region east of the Hudson River where supply is exclusively all-rail the steam grades are in somewhat better request, probably in sympathy with the more active market farther west.

### New York Sees Gradual Betterment

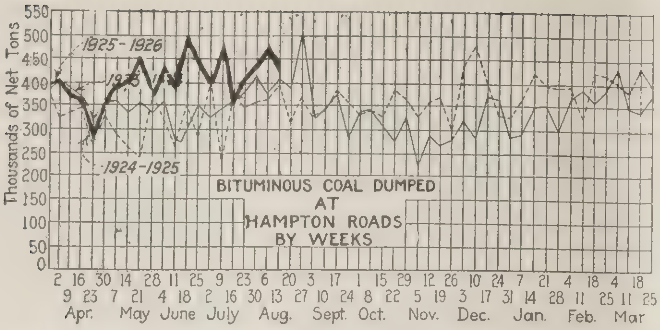
Improvement in the soft-coal trade at New York is progressing. High-volatile coals are more active and the low-volatile grades are in better demand but no better in price. Operators believe it will take at least six weeks' idleness in the anthracite regions to straighten out market conditions.

Though shipments to the local piers are heavier this is of no apparent benefit to the industry at this time. The coal is kept moving, but prices are no better.

Buying shows some improvement. Operators are hopeful of better business with the approach of the fall season. Heavier business is reported from inland points with prices remaining at practically last week's basis.

There is nothing akin to a rush in the Philadelphia market, but demand continues to gain as in recent weeks. If there be a suspension in anthracite mining, the bituminous people hardly expect to feel any effect for a month or six weeks.

Demand has been met so easily that prices have not been touched. As production increases, however, expenses de-



crease proportionately, and the outlook for increased tonnage grows with each passing day. The utilities, like the railroads, gas, and power plants, are buying very freely and will continue to do so. The tidewater situation presents little change.

The Baltimore trade continues to show a healthy increase in export activity and there is a marked improvement in the demand for bunker coals from vessels engaged in other than the coal carrying business. Prices show no material change. The demand is still quite light, and sales competition keen.

### Birmingham Feels Better Now

The coal trade is picking up some all along the line though buying is not to say active as yet. There is a feeling, however, that a gradual improvement is to be expected from now on. Demand for domestic coal is gaining a little strength, spot buying showing some increase over last month and the movement against contracts being heavier. There are still restrictions on the shipment of contract allotments, which leaves the mines with a surplus for the open market which is not disposed of without unusual effort.

The steam market which has been fairly good for several weeks is gaining further strength. Inquiry is increasing and bookings are somewhat better the past week. Cotton gins, ice plants and power companies are using considerable coal in the aggregate and the general industrial demand in the open market along with the contract requirements is keeping some mines on five-day schedules. Bunker coal requirements for the past week have been larger than they have been for some time, though the demand from this direction is always irregular.

Production from this field is good for this season, averaging around 365,000 net tons weekly. Prices are stable.

### Hard-Coal Trade Active

Activity in the anthracite market at New York centers around tidewater. Heavy shipments of independent coals have been coming to the piers and many loaded boats await buyers. Considerable of this tonnage consists of chestnut and pea sizes. The former size is gaining strength rapidly and in the opinion of some shippers will soon take the lead now held by stove.

For loaded boats of broken coal quotations are based on a mine price of about $9.20, with $10.25 the average price asked for stove coal on the same basis. The latter is from 40c. to 50c. below the average maximum price asked along the line.

The large companies are sold up to their regular trade, and some independent producers have refused orders and quotations for future shipments.

Barley is practically out of the market to spot buyers; rice is scarce and No. 1 buckwheat is gaining strength.

Retail dealers report brisk business, but so far have been able to take care of customers' wants without trouble.

The wholesale anthracite market at Philadelphia has tightened up greatly, and most shippers, company and independent, are sold up on their estimated production for the balance of the month. Orders from distant points continued to flow in, and local trade also has picked up rapidly of late.

A few independents are putting premiums on their coal, although they are not moving much in this market, which has always been a difficult one in which to sell premium coal. Retail trade is quiet and it looks as if any general increase in retail prices would be postponed until Sept. 1.

Steam sizes are moving well, and all independents are able to get full price.

As warm weather prevails at Baltimore household consumers of anthracite are tardy in stocking up. The buying public seems to take it for granted that both sides are bluffing in the hard-coal dispute, and that some way will be found to prevent any serious stoppage of work by miners. The demand for coal for use in the fall and winter is not even up to average for the majority of dealers, although some report that they are running ahead of their usual August deliveries.

At Buffalo the demand for anthracite for house use has increased at a good rate lately, but it has not become at all insistent yet. Shippers and retailers are wondering why this is so, with a strike apparently imminent, for, unlike a bituminous strike, there is no coal to be dug by non-union miners. The extra demand has been enough to give consumers a pretty good supply, but it has not been what it should have been.

The demand for coke has increased at a petty rapid rate, the price of furnace coke at the curb still being $9@$9.50.

Lake shipments are increasing slowly. Last week the amount loaded was 51,000 tons, of which 27,900 tons cleared for Milwaukee, 14,800 tons for Chicago and 7,300 tons for Green Bay. Rates remain at 55 to 60c. to Chicago and 50c. to Milwaukee and Green Bay.

### Connellsville Coke Market Braces

After a long period of stagnation the Connellsville coke market in the past week suddenly took a brace, with others predicted.

Just one week ago, when spot furnace coke was $2.90 and some contracts running were at not over that, the Jones & Laughlin Steel Corporation suddenly undertook to buy for the remainder of August and took 20,000 tons, from two producers, at $3. Two or three days ago it bought some 20,000 tons more, for September, at above $3, and seemed to want a considerable additional tonnage, for September, on which it was quoted $3.50, which it considered impossible. Recently it blew in another blast furnace and it is producing scarcely any coal itself, making its own coke chiefly from purchased coal.

The miscellaneous buyers, of small lots for various purposes, increased their buying and by the middle of this week had to pay $3, against $2.90 formerly. Larger, and unfamiliar, buyers appeared, chiefly eastern gas companies, and they have bought several good sized lots for 30 to 60 days delivery, paying advancing prices up to $3.25, which has been paid in several cases and now represents flatly the spot market, with predictions of higher prices any day. With the blast furnaces, a few cents difference in the price is highly regarded. With these gas companies it counts for practically nothing. It is awkward for them to switch from anthracite to coke and when they do even a dollar on the coke is a relatively small matter.

As usual, operators will be keen to blow in ovens and get ready for the demand now plainly in prospect. Often they do this so rapidly that they forestall the price advance they are endeavoring to anticipate and take advantage of, but there is by no means unlimited opportunity for coke production to be increased in the next few weeks. First, certain conservative interests have said $3.50 is their price and they will not produce until they get it. Then there are ovens that have been idle so long they will require considerable work to get them in shape. Finally some operators have sold themselves up so well on coal that they have not the coal to spare to run many additional ovens, nor would it pay them as the coal prices are not bad.

Heating or medium sulphur coke last week advanced from $2.65 to $2.90@$3 and it is doubtful if it could be bought at under $3 now. Foundry coke is quite unaffected by these developments, being quotable unchanged at $3.75@$4.25, with a limited demand.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Aug., 1925 | 1,043,063 | 180,936 |
| Previous week | 1,029,603 | 178,030 |
| Week ended Aug. 2, 1924 | 945,613 | 145,636 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| July 31, 1925 | 263,876 | 80,661 | ......... | ........ |
| July 22, 1925 | 296,743 | 101,542 | ......... | ........ |
| July 31, 1924 | 322,530 | 146,840 | ......... | ........ |

# Foreign Market And Export News

## British Coal Market Suffers from Sharp Competition

The Welsh steam coal trade last week was very unsettled with business difficult to arrange. Buyers abroad, chiefly foreign depot firms and railways with contracts for Welsh steam coal, have pressed for earlier deliveries, but generally buyers have not come forward freely because they have relied upon buying from Germany and elsewhere. The extra shipping activity has been sufficient to give South Wales ports quite a busy appearance, despite the fact that collieries closed down in the last twelve months through trade depression have not been reopened.

There has been a clearance of standing stocks, and with the current output fully absorbed, colliery owners have been unable to cover all the business offered to them. Buyers are looking forward to a cut in the price of Welsh coal, and unless that is made there can be little trade expected throughout the rest of August.

Foreign buyers seem to be quite indifferent. Nothing is being done in the contract business whatever, all inquiries for the present being in suspense. Reports from the Continent indicate that not only Germany, but also Polish Silesia and Russia are offering cheap supplies of coal over a wide area in Europe, while American coal is being pushed in Italy, the Western Islands and South America.

Coal production by British mines during the week ended Aug. 1, a cable to *Coal Age* states, totaled 4,580,000 tons, compared with 4,525,000 tons in the week ended July 25.

Employers in the Irish coal trade have decided to import non-union labor and seek military protection for unloading colliers, in the hope of ending the five weeks' deadlock which has existed in the industry through the controversy between the union headed by James Larkin and another body of workers who broke away from this union and formed their own organization.

### Market at Hampton Roads Gains in Strength

The market at Hampton Roads last week was considerably stronger, and inquiries were on the increase. The demand in the West appeared to be holding the Eastern demand stronger, and shippers generally reported business good.

Foreign shipments were holding their own, and the prospect of a strike was improving the spot market. No long contracts were being made, shippers being wary of conditions a month or two hence.

### Industrial Grades Sluggish In French Coal Market

The French coal market situation is still poor in industrial grades, both for French and foreign products. For domestic fuels conditions are rather brighter.

Agitation among the miners has spread to Carmaux (Midi region), where the men threaten to strike unless they obtain the concessions given to miners in the North and Pas-de-Calais. The latter have been granted an extension until Sept. 15 of the allowance of 20 per cent on account of the high cost of living. Unrest is in evidence in the Sarre district also, due partly to Communist influence.

The period of stoppage of the water ways is virtually at an end.

During the first 28 days of July the O.R.C.A. received from the Ruhr 204,868 tons of reparation coke, a daily average of 7,320 tons.

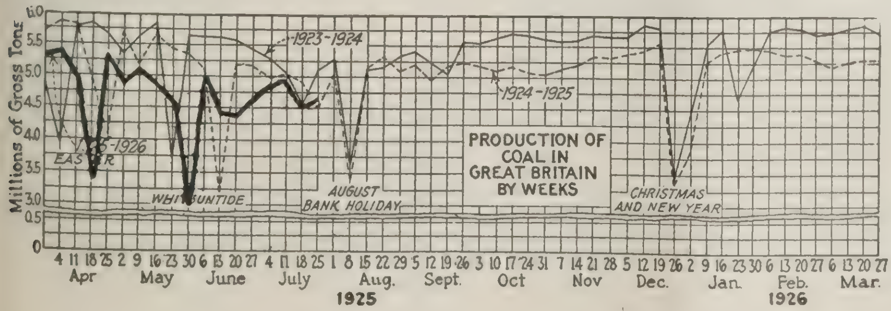
In the month of June the Office des Houillères Sinistrées received from the Ruhr 505,600 tons of indemnity fuels, including 256,000 tons of coal, 224,400 tons of coke and 24,400 tons of lignite briquets.

### Belgian Industrial Market Slow; Household Trade Mending

No improvement is to be noted in the Belgian coal market. As the strike in the iron and steel industry continues, a dead calm prevails in industrial grades. With regard to household fuels the situation is on the mend; semi-bituminous and dry descriptions are getting scarce and some people even think that in a short time an upward movement will take place.

Neither Dutch nor British competition is so active.

Coal output in the Ruhr in the first five months of 1925 totaled 54,673,980 metric tons, against 42,397,564 metric tons in the corresponding months of 1924.



### Export Clearances, Week Ended Aug. 15, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Far East: | |
| Br. Str. Rose Castle, for Far East Ports | 9,885 |
| For Spain: | |
| Ital. Str. Robilante, for Gibraltar | 9,431 |
| For Italy: | |
| Ger. Str. Goty von Berlichigen, for Naples | 5,428 |
| Ital. Str. Gilda, for Ancona | 2,066 |
| For France: | |
| Fr. Str. P. L. M. 17, for Rouen | 5,429 |
| For Brazil: | |
| Br. Str. Copenhagen, for Rio de Janeiro | 5,828 |
| For Danish West Indies: | |
| Dan. Str. Uranienborg, for Aruba | 209 |
| For Argentina: | |
| Br. Str. Antiope, for Rosario | 4,094 |

FROM PHILADELPHIA

| | Tons |
|---|---|
| For Cuba: | |
| Br. Str. Navarino, for Havana | —— |
| For Newfoundland: | |
| Br. Str. Hitherwood, for St. Johns | —— |

FROM BALTIMORE

| | |
|---|---|
| For Canada: | |
| Dan. Str. Aggersund, for Quebec | 4,132 |
| Br. Str. Lady Astley, for Quebec | 4,705 |
| For Argentina: | |
| Br. Str. Pentoury, for Buenos Aires | 5,113 |
| For Italy: | |
| Br. Str. Mariston, for Lavona | 6,993 |
| Ital. Str. Giovanni Florio, for Genoa | 7,515 |

### Hampton Roads Pier Situation

(Gross Tons)

| N. & W. Piers, Lamberts Pt.: | Aug. 6 | Aug. 13 |
|---|---|---|
| Cars on hand | 1,579 | 1,335 |
| Tons on hand | 98,207 | 80,842 |
| Tons dumped for week | 155,645 | 140,504 |
| Tonnage waiting | 16,000 | 15,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 886 | 618 |
| Tons on hand | 69,900 | 49,450 |
| Tons dumped for week | 80,070 | 98,503 |
| Tonnage waiting | 40,969 | 22,424 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,565 | 2,524 |
| Tons on hand | 131,730 | 122,195 |
| Tons dumped for week | 176,124 | 152,472 |
| Tonnage waiting | 11,700 | 12,565 |

### Pier and Bunker Prices, Gross Tons

PIERS

| | Aug. 8 | Aug. 15† |
|---|---|---|
| Pool 1, New York | $5.25@$5.55 | $5.25@$5.55 |
| Pool 9, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 10, New York | 4.50@ 4.65 | 4.50@ 4.65 |
| Pool 11, New York | 4.25@ 4.50 | 4.25@ 4.50 |
| Pool 9, Philadelphia | 4.65@ 4.90 | 4.65@ 4.90 |
| Pool 10, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 11, Philadelphia | 4.25@ 4.30 | 4.25@ 4.30 |
| Pool 1, Hamp. Roads | 4.40 | 4.40 |
| Pool 2, Hamp. Roads | 4.25 | 4.25 |
| Pools 5-6-7, Hamp. Rds. | 4.15 | 4.15 |

BUNKERS

| | Aug. 8 | Aug. 15† |
|---|---|---|
| Pool 1, New York | $5.45@$5.75 | $5.45@$5.75 |
| Pool 9, New York | 4.95@ 5.20 | 4.95@ 5.20 |
| Pool 10, New York | 4.70@ 4.85 | 4.70@ 4.85 |
| Pool 11, New York | 4.45@ 4.70 | 4.45@ 4.70 |
| Pool 9, Philadelphia | 4.80@ 5.05 | 4.80@ 5.05 |
| Pool 10, Philadelphia | 4.60@ 4.80 | 4.60@ 4.80 |
| Pool 11, Philadelphia | 4.45@ 4.65 | 4.45@ 4.65 |
| Pool 1, Hamp. Roads | 4.50 | 4.50 |
| Pool 2, Hamp. Roads | 4.35 | 4.35 |
| Pools 5-6-7, Hamp. Rds. | 4.25 | 4.25 |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Aug. 8 | Aug. 15† |
|---|---|---|
| Admiralty, large | 30s. | 30s. |
| Steam smalls | 17s.6d. | 17s.6d. |
| Newcastle: | | |
| Best steams | 16s.6d.@ 17s. | 16s.9d. |
| Best gas | 25s. | 25s. |
| Best bunkers | 16s.@ 18s.6d. | 16s.@ 18s.6d. |

†Advances over previous week shown in **heavy** type; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

Coal production in Alabama for the month of July, 1925, totaled 1,600,000 tons, the largest output since March, 1925, and the first time this year that the 1924 figures have been topped, according to a report by the Alabama Mining Institute. Figures by months for the two years follow:

| | 1925 | 1924 |
|---|---|---|
| January ......... | 1,641,000 | 1,855,200 |
| February ......... | 1,583,000 | 1,840,000 |
| March ............ | 1,726,000 | 1,734,000 |
| April ............. | 1,450,000 | 1,713,000 |
| May .............. | 1,596,000 | 1,637,000 |
| June ............. | 1,550,000 | 1,550,000 |
| July .............. | 1,600,000 | 1,400,000 |

## ARKANSAS

Operators with mines in Arkansas are watching interestedly the results of a recent move by the Peterbaugh interests to bring about a wage reduction in the state. The Greenwood Coal Co. in its mine at Greenwood was employing eighty-four men at the 1917 scale the week ending Aug. 9. In that week it averaged 200 tons production a day. The Russellville Coal Co. reopened Aug. 11 with forty-five men. Several smaller mines also are being opened under the 1917 scale, and operators with large holdings in the state whose mines now are idle say their reopening will depend on the acceptance by miners of less than the 1924 scale.

## COLORADO

The States-Hall Coal Co. is the name of a new company organized Aug. 1, as the result of the consolidation of the States and Red Mountain coal mines. Owing to a recent ruling announced by the state coal mine inspector, it was necessary to spend several hundred dollars in installing a ventilating fan and also to hire a licensed man in charge, so the management of the two mines decided that they could cut expenses in half by an arrangement of this kind.

Notice from three coal companies operating at Walsenburg was received by the State Industrial Commission Aug. 5 to the effect that wages of the employees of the companies would be reduced approximately 11 per cent within the next thirty days. The companies giving the notice are the Dick Coal Co., the Garden Coal Co. and the Jewell-Colliers Corporation. The action of the coal companies, their officials told the commission is in conformity with the recent policy adopted by the Colorado Fuel & Iron Co., which reduced the wages of its employees. The Colorado Fuel & Iron and these three companies reduced wages approximately 20 per cent, with the consent of the commission, several months ago.

## ILLINOIS

Operation is picking up in southern Illinois. Old Ben Mine No. 8, at West Frankfort, employing 1,000 men, resumed Aug. 17, and No. 12 mine, at Christopher, employing 600 men resumed Aug. 10. With the resumption of three other mines at West Frankfort this month, more than 2,600 men idle since last spring have returned to work. The Old Ben company still has seven mines in this section not affected by the work order.

Three mines of the Madison Coal Corporation are showing an increase in business, which, coming at this season, indicates a good fall and winter. The coal from the three mines is used by the Illinois Central for the operation of trains. The mines, which are at Mt. Olive, Glen Carbon and Carterville, are working from four to six days a week.

After closing a lease for the mine of the Assumption Coal & Mining Co., seven miles north of Pana, Glen Young and ten associates, who announced that the mine would resume operations at once, surrendered their lease Aug. 10. Young found, on examination of the workings, that the expense of repairs and machinery made the reopening of the mine prohibitory. It is said the present machinery will be junked and the mine sealed.

The Silver Creek Mining Co., Farmington, placed sixty additional men at work July 31.

The Peabody Coal Co., Chicago, has purchased the Woodside Coal Co. mine located southwest of Springfield. The price involved is given at $107,000. Two other mines recently purchased by the Chicago company are located at Auburn. They were owned by Solomon Brothers. With the deed to the Woodside mine was filed a bill of sale covering personal property at the mine and also a deed covering the coal rights. The latter were conveyed by Milton Hay Brown, Jane Logan Brown, Christine Brown Penniman, Logan Hay, Lucy L. Hay and John A. Dushane Penniman to the Woodside Coal Co. and thence to the Peabody company. The coal rights were sold for $37,000.

International Auditor A. T. Pace took up the charter of Local Union No. 994, United Mine Workers, at the Sunnyside coal mine, one of the first mines sunk in Herrin. A fire a few years ago destroyed the tipple and washer of the mine and a few months later the property was sold. Since then it has had a varied existence and before the final shutdown owed its employees for about one month's work, which has never been paid.

The mine of the Southern Coal & Mining Co. at New Baden, resumed work July 28, after being idle since last March. About six hundred miners are employed in the mine.

## INDIANA

Application for the appointment of a receiver for the Vulcan Coal Co., of Evansville, was filed in Vanderburgh County probate court last week by Charles L. Boyles, a stockholder. Boyles also asks that officers of the company be compelled to surrender to stockholders certificates of stock yet outstanding. The Vulcan Coal Co. is said to be incorporated at $1,000,000 and to control 49 per cent of the stock of the Southern Indiana Coal Corporation.

## IOWA

The Pearson Coal Co. now has three mines at Clarinda, the last one having been opened recently near Hawleyville, with only a 55-ft. lift.

The Black Diamond Coal Co., Gravity, is installing a new boiler and otherwise placing its mine in shape for extensive mining operations during the coming season. Mining machines are to be installed and a new railway switch is to be laid.

## KENTUCKY

J. A. Straughan has been appointed general superintendent of the Weeksbury operation of the Elkhorn Piney Coal Mining Co., vice J. J. Fluck, resigned. The Elkhorn Piney Coal Mining Co. is a subsidiary of the Milwaukee Coke & Gas Co. The Weeksbury operation, which is in 38- to 50-in. coal, was brought to a production of approximately $40,000 tons per month while under the superintendence of Mr. Fluck.

Officials of the Chesapeake & Ohio R.R., on Aug. 13, announced at Ashland, that the 28 miles of the Sandy Valley & Elkhorn R.R. in Eastern Kentucky, had been placed under sole operation of the road, the deal having been pending for a year before the Interstate Commerce Commission. The road originally was built by the Baltimore & Ohio R.R. to connect the Consolidation Coal Co. properties, and later sold to the coal company, which in turn has transferred it to the C. & O., which agrees to pay $6,800,000 in cash for the roads obligations, now amounting to $5,000,000 in capital cock, and $2,200,000 in bonds, in addition to $2,536,220 for advances by the coal company. Between Shelby Junction and Dunham, the road serves nineteen coal mines.

## MISSOURI

Coal in well paying quantities is being mined on a tract of land owned by John Bohon, in the Lone Star school district, ten miles southeast of Sedalia. Operations were begun about ten days ago. Tunneling 100 ft. into the ground the miners are working on an 8-ft. bed. Fifteen men, miners and drivers, are employed on the premises, digging the coal and freighting it to Sedalia. Three trucks are now in use for that work.

Coal operators in the vicinity of Fulton, contemplate an indefinite suspension of operations at the expiration of the present agreement with the miners. The operators have not met with the mine union officials relative to the proposed increase in wages, taking the position that it is useless to confer as the mines cannot compete with Illinois coal if production costs go up. The miners have asked a tonnage increase for digging coal and higher wages for surface workers.

## NEW YORK

The Buffalo water works contract for furnishing 45,000 tons of slack was awarded to the Lake Erie Fuel Co., of Buffalo, on its bid of $1.39 on a $2.34 freight rate, which indicates that Pennsylvania coal will be furnished.

## OHIO

The Pittsburgh Coal Co. announces that miners loading coal in the three mines of the company at Pomeroy, working on the 1917 scale, are earning an average of more than $7 a day, based on the 14-day pay distributed Aug. 9. The highest pay among 400 men in the employ of the company was $9 per day and the lowest was $6 a day. The three mines are now running from 1,300 to 1,500 tons of coal a day. At the Dark Hollow mine the highest pay for those who worked every day was $120.96 and the low $110.92. At Forest Run the high was $136.68 and the low $84.33. At Mine No. 75 it was $136.06 high and $81.04 low.

Officers of the Island Creek Coal Co. in Cincinnati learned that Ed Merrell was critically ill at his home in Montreal, where he is identified with both coal and steamship interests. Mr. Merrell has many friends in West Virginia and southern Ohio. It was in Logan County that he put in many years developing various mining interests, notably those of the Island Creek company.

The Hysell Run mine, near Cannelville, resumed operation Aug. 3, giving employment to about 50 men, and the management is reported to have on hand orders sufficient to guarantee the men four or five days work each week throughout the winter. The E. A. Goslin mine in Perry county, between Zanesville and New Lexington, on the C. & M. V. Ry. also opened Aug. 3. About 25 men were hired at once, and it is believed that there will be work for at least 50 more in another week. Both mines resumed under the Jacksonville agreement, according to Frank Bender, subdistrict secretary of the United Mine Workers.

Two mines of the Clarkson Coal Co., at St. Clairsville, which had been working steadily throughout the summer, have suspended operations, owing to the competition of non-union mines of West Virginia. About 750 men were employed and the daily capacity was 4,500 tons. It is pointed out that only 11 out of 131 mines in the eastern Ohio field are now operating.

After ten years of continuous maintenance of a branch office in Cincinnati word came from Lynchburg, Va., the headquarters of the Chesapeake & Virginian Coal Co. to close the suite maintained in the Union Trust Building. George W. Hill, who was active in the company until he died, had charge of this branch and was succeeded by Colonel Tom Morgan, a former president of the Cincinnati Coal Exchange, about two years ago. It is planned to operate the Western business from a branch that has been opened in Detroit under the direction of Fred Walker.

Repairs are being made to the equipment of the Bear Run Mine, at New Lexington, owned by the Gosline Coal Co., which will be put into operation after an idleness of several years. Officials of the Penrod Coal Co. also announced that Mine No. 3, located at Crooksville, will be placed in operation in a short time. A satisfactory settlement with union men is in prospect, according to the officials. In addition several smaller mines will soon be put into operation in the New Lexington section.

Numerous cities and towns in the southern Ohio coal fields have protested to the Columbus Chamber of Commerce recently against the purchase of Kentucky coal by the Columbus Board of Education for school buildings. The cities complaining were Chauncey, Buchtel, Glouster, Trimble, Jacksonville, Nelsonville, Athens and New Lexington. The protests were made on the ground that Columbus is the logical market for Hocking Valley coal and that Columbus wholesalers and manufacturers enjoy fully 80 per cent of the commercial business originating in the Hocking Valley. It also is set forth that coal is the chief product of that section and in order to pay their taxes the operators must sell coal. The Board of Education says that Kentucky coal was selected because operators could insure delivery by Aug. 1 and also because of no clause in the contract exempting the concerns from delivery in case of a strike.

The Wallins Creek Coal Co., of Cincinnati, Ohio, and its representation of Harlan, Hazard and Darby coals, has been consolidated with the Logan-Pocahontas Fuel Co., also of Cincinnati.

The equipment of the Black Diamond Mine, located near Nelsonville, and operated under a co-operative plan by Hall Bros., was completely destroyed recently. The mine was entered and the motors, mine cars, tracks, supports and in fact all equipment was destroyed by sledgehammers and axes. Steps have been taken to rebuild the plant.

## OKLAHOMA

The attempt to operate under the 1917 scale in the Henryetta field is meeting with persistent resistance on the part of District 21, United Mine Workers, aided by representatives of the international and officials of District 14 (Kansas). The order of Sheriff John Russell of Okmulgee County forbidding public prayer meetings by miners opposing open-shop operation of the mines will be fought in court, aided by attorneys of the American Civil Liberties Union, which, in a dispatch on Aug. 11 from New York, offered its assistance. On Aug. 14 troopers made four arrests of miners charged with disobeying the sheriff's no-prayer-meeting order. Mine union leaders said the men exposed themselves to arrest in order to test the validity of the order in the courts.

**Commissary at Edgewater, Ala.**

In these days of good roads and automobiles the "Company Store" is brought into direct competition with the metropolitan emporium. Furthermore, today the mine worker is paid in cash and spends his earnings where he pleases. In order to retain its custom, therefore, the mine commissary must offer values and service at least equal to those of its competitors. The day of gouging at the company store is gone—let us hope, forever.

**Discharging Station of Cableway at LaColeman, Ky.**

The coal is brought to this point across the Big Sandy Fork of the Cumberland River to be loaded onto the tracks of the Kentucky & Tennessee Ry. shown in the foreground. The Comargo Coal Co. operates the cableway and mine.

## PENNSYLVANIA

Constitutionality of the state anthracite tax law "cannot be made to run the gamut of successive verdicts of juries." President Judge Hargest, of the Dauphin County Court, ruled Aug. 10 in an appeal of the Hudson Coal Co., refusing a new trial. The company has about 40 appeals pending. Recently when a jury trial was demanded in one of the cases, counsel submitted offers of proof for the defense in which they contended they would raise questions of fact not previously passed upon in other cases in which the constitutionality of the law was upheld. The court ruled out the offers and returned a verdict of $43,530 for the commonwealth. Counsel for the company said it was planned to appeal the case to the Supreme Court.

Judge Van Sweringen, in Uniontown, on Aug. 10 refused to grant a six months' extension to the Melcroft and other coal companies in the Indian Creek Valley to dispose of water taken from the mines, which the Supreme Court of Pennsylvania recently ordered must be stopped from draining into Indian Creek. The mines thus are "bottled up" and their losses will be large, it is believed. The Supreme Court decision held that after July 31, 1925, the mines must stop the water from pouring into the creek, but the coal companies filed a petition asking for six months' time. This the Uniontown judge has refused to allow.

Federal Judge Robert M. Gibson, in Pittsburgh on Aug. 13 appointed J. N. Jarvis, an attorney, receiver in bankruptcy for John A. Bell, coal operator and president of the closed Carnegie Trust Co. Jarvis is a member of a creditors' committee which was formed after the trust company was closed by the state banking department three months ago. Bell filed a voluntary petition in bankruptcy, Aug. 7, giving his assets as $1,628,535 and his liabilities as $8,669,097.

The Pittsburgh Coal Producers' Association reports that production in the union mines of this district for the week ended Aug. 8 was 60,825 tons. The weekly capacity is 629,880 tons. Thus production is 9.7 per cent of capacity. This rate compares with 7.5 per cent in the preceding week and 27.8 per cent in the same week last year. But 12 mines reported out of 80, compared with 14 in the preceding week.

Two men, a miner and his laborer, were fatally injured Aug. 3 in the Jermyn mine of the Hudson Coal Co. when a powder blast exploded prematurely.

Approximately 200 of the best-known men in the industrial world in Pittsburgh, New York and Chicago made an inspection of the Colonial, formerly the Old Alice mine, of the H. C. Frick Coke Co. Aug. 7 as guests of W. H. Clingerman, president of the Frick company, subsidiary of the United States Steel Corporation. The workings of one of the most modernly equipped mines in the country were exhibited, but of greater interest was the immense belt conveyor system from the mine to the river tipple, where coal can be dumped at the rate of 1,500 tons an hour from the belts into the tipple and into barges at the rate of 850 tons in 10 minutes. The equipment includes the longest belt conveyor in the world, 2,439 ft. long, and another which is 1,513 ft. long. There are nearly a score of belts in all.

## UTAH

In an address before the Lions Club of Salt Lake City on July 31, O. F. McShane, chairman of the Utah Industrial Commission, said that the 271 men who lost their lives in the Castlegate disaster in March of last year, together with the $750,000 spent in compensation and the $250,000 for the rehabilitation of the mine was all the result of carelessness of a fireboss. Mr. McShane declared that rescue workers found the body of the fireboss on a heap of coal with his lamp dismembered, one part clutched in his right hand and the other in his left. The dismembering of the lamp was against the safety rules of the mine, he said. The speaker termed the greatest safety factor a careful workman. He said that it is estimated that at least one-half of the industrial accidents of this state are due to the carelessness of employees.

## WEST VIRGINIA

Suit was instituted in the circuit court at Baltimore on Aug. 1 by bond holders of the Big Vein Pocahontas Coal Co. of West Virginia against former receivers-directors of the company alleging diversion of $100,000. The sum, it is claimed in the suit, should have been placed in a sinking fund for the redemption of bonds. The suit was filed in the name of Frank A. Furst, Paul A. Seegar, Ella H. Hughes, Bessie M. Rice, the Mercantile Trust and Deposit Co. and James Clark Murphy, holders of class B bonds, dissolved last year. Defendants were named as Edward P. Keech, Jr., Van Lear Black, Norville H. Carter, James L. Zelman and Henry H. Heiner.

The largest day's loading in the history of the Chesapeake & Ohio was on Friday, July 24, when 4,042 cars of coal were loaded and started to their destination. This shows the prosperity of the region, traversed by this carrier.

The first annual first-aid contest of the Island Creek Coal Co. was held at Holden, July 26. Twelve teams were entered in the meet which was won by Team No. 3, of Mine No. 8, captained by Fred Class. Second place was awarded Team No. 4, of Mine No. 1. Team No. 1, of Mine No. 11, and Team No. 12 of Mine No. 18, were third and fourth respectively. About 4,000 persons witnessed the contest. Howard M. Gore, Governor of West Virginia; R. M. Lambie, chief inspector, West Virginia Department of Mines, and D. J. Parker, chief engineer, Mine Safety Service, U. S. Bureau of Mines, Pittsburgh, addressed the meeting.

As showing a steady increase in operations, the Thurmond Coal Co., of Logan, with mines at Dabney, McBeth and Yolyn, has asked that 100 coal loaders be supplied by the Huntington branch of the United States Employment Service. The branch in question now has unfilled orders for approximately 500 loaders in the Huntington district, Kanawha Valley and eastern Kentucky mines.

Difficulty is being experienced in filling the demand for coal loaders in the vicinity of Huntington. About 500 loaders are still desired in coal fields tributary to the Huntington district. Mine help wanted for mines in southern and southeastern counties in West Virginia and eastern Kentucky include trackmen, motormen, brakemen and coal loaders.

The E. C. Minter Coal Co. has obtained an injunction restraining Raleigh County from proceeding with the construction of a road under its tipple. The injunction was issued by Judge J. W. Maxwell, of the Circuit Court of Raleigh County.

The Beckley Coal Mining Co., of Meadow Bridge, in Fayette County, recently was sold for $17,000 in an effort to satisfy a mortgage. It was owned by Clarksburg interests and consisted of 500 acres of smokeless coal land, held in fee, on which a first mortgage of $50,000 had been obtained. It was equipped to produce 500 tons of coal per day.

## WYOMING

The combination first aid and mine rescue team from No. 2 Mine, Cumberland, at a contest held in Rock Springs Aug. 8, won the right to represent the Union Pacific Coal Co. at the International First Aid and Mine Rescue Meet in Springfield, Ill., in September. The team's score was 97.5 per cent on the mine rescue problems and 90.3 per cent on the first aid problems. Teams from three Rock Springs mines, two Cumberland mines and from Superior, Reliance, Hanna and Winton participated.

## WASHINGTON, D. C.

The U. S. Civil Service Commission announces the following open competitive examinations: Under scientific helper, to fill vacancies at the Experiment Station of the Bureau of Mines, Pittsburgh, Pa., and in the chemical laboratory of the Bureau at Buffalo, N. Y., at a salary of $1,140 to $1,500 per year, applications to close Sept. 12. For second class steam-electric engineman vacancies are to be filled in the departmental service at Washington and in the Indian service throughout the United States, with an entrance salary of $1,320 in the District of Columbia and of $1,140 to $1,320 with quarters, heat and light in the Indian service, applications closing Sept. 21. Vacancies for junior metallurgist are to be filled at Frankford Arsenal, Philadelphia, Pa., and elsewhere at a salary of $1,860 to $2,400, applications closing Sept. 26. Applications for under laboratory mechanic to fill vacancies in the Division of Mechanical Technology, National Museum, Washington, and elsewhere close Sept. 22; the salary is $1,140 to $1,500. Full information and application blanks may be obtained from the Commission at Washington, D. C., or at the post office or custom house in any city.

## CANADA

Operations were resumed at the Cape Breton coal mines of the British Empire Steel Corporation, Aug. 10, in accordance with the terms of the interim six months contract accepted by the corporation and the miners. Coal cutting was resumed in two mines, about 1,500 men being taken on. It was expected that 5,000 men would be working by the end of the week. It is understood that sufficient orders are on hand to keep the mines working six days a week until the end of the season.

The shipments of Alberta anthracite under the reduced freight rate of $7 per ton arriving at Toronto are in no great demand, consumers apparently preferring a fuel with which they are familiar. It is being sold by the dealers at $15 per ton. There is some doubt as to whether the full amount of 25,000 tons arranged for will be obtainable at the Alberta mines.

Fears of a coal famine during the coming winter in the event of a strike of American anthracite miners have been dispelled by the arrival in increasing quantities of British anthracite. During the 12 months ending June 30 the imports of anthracite from Great Britain totaled 388,353 tons, valued at $3,517,576, as compared with 195,809 tons valued at $1,905,088 during the preceding twelve months. The imports in June were 59,435 tons.

According to word from Edmonton it looks now as if there would be a shortage in the 25,000 tons of coal that Alberta mines were given the opportunity of shipping to Ontario. The Drumheller Mines will be unable, according to reports, to make up their quota, the operators and miners having failed to make terms on a new agreement. The special $7 freight rate was good only to Aug. 15.

Output of coke continues to show a considerable falling off due to the Nova Scotia coal strike. In June 109,694 tons was produced in the Dominion as compared with 130,068 tons in May. A decrease of 16 per cent. Out of a total of 161,215 tons of coal used for coke making, 19,565 tons was domestic and 141,650 imported coal. Exports of coke in June fell from 4,968 tons to 3,567 tons, and imports rose from 45,945 tons in May to 55,836 tons.

# Traffic

## I. C. C. Refuses to Change Hampton Roads Charges

Charges for dumping and trimming coal at Hampton Roads are not unreasonable, according to the Interstate Commerce Commission in its decision handed down a few days ago in Southern Transportation Co. et al. v. Norfolk & Western et al, 101 I.C.C. 211. The Commission held that the horizontal manipulation of the chutes down which coal runs into the holds of vessels must be considered as part of the dumping service and not, as the railroads argued, an incident of the trimming service. The Commission also expressed the opinion that trimming and dumping charges should be published separately.

Charges for docking and undocking ships, for running of lines to make vessels secure at their berths and for the furnishing of fresh water are marine services beyond the jurisdiction of the Commission. The Commission holds, however, that it has jurisdiction over port and wharfage charges for the right to come to the docks to receive coal, particularly bunker fuel, but said that further hearings would be necessary to determine the reasonableness of such charges.

## Western Lines Want Increases

The Western railroads have made an announcement addressed to the public in which they explain what will apparently be their position at the hearing on their petition for an increase in revenue in Chicago, Sept. 8. The hearing of this petition is coupled with Docket 17,000, Hoch-Smith Resolution.

They point out that their earnings in 1924 were 3.87 per cent, and announce that an advance of 5 per cent in freight revenues based on the tonnage of 1924 will result in a net return of 4.62 per cent. Particular stress is laid on that clause of the Transportation Act which provides that carriers generally are entitled to a return of 5¾ per cent. They announce, however, that they do not propose at this time to demand the full measure of their rights under the law, but will ask for an increase of approximately 5 per cent.

Perhaps the most important phase of the announcement is the following statement:

"As a practical means of carrying this emergency program into effect, the carriers are proposing general advances in freight rates which approximate 5 per cent, maintaining established rate relationships. In the instance of certain commodities the carriers will propose, as a matter of expediency, that the percentage of advance be converted into one applicable in an equal amount to all rates. As a few illustrations: on grain they will propose a uniform advance equivalent approximately to 1c. per bushel; on coal, 15c. per ton; on clay, gravel, sand and stone, 7½c. per ton; on cement, lime and plaster, 20c. per ton.

## To Hold Hearing on Raise in Handling Charge

The Coal and Coke Committee, Trunk Line Territory, will hold a hearing at 11.30 a.m., Sept. 9 at 143 Liberty St., New York City, on a proposal by the Central Railroad Co. of New Jersey and the Lehigh Valley R.R. to increase the present charge of 13c. per ton for handling coal and coke through the companies' pockets at Easton, Pa., to 15c. per ton, and to increase the storage charge in such pockets of $1.85 per pocket per day or fraction thereof, to $2 per pocket per day or fraction thereof. The reason given for the proposal is to establish rates more commensurate with the service involved and for the use of these facilities.

## Illinois Rate Hearing Continued

In order to give the defendant railroads an opportunity to collect additional evidence the hearing before an assistant commissioner of the Illinois Commerce Commission at East St. Louis, Ill., on rates from inner group mines to East St. Louis, Ill., has been continued until Sept. 8.

Three cases are being heard. The first, brought by coal operatives, seeks a reduction in the present rate of 91c. a ton for coal shipped within a radius of 20 miles of East St. Louis. Another case is brought by coal operatives outside the 20-mile zone but within 60 miles of the city, while the third case is on behalf of the operatives of the state at large. The latter two groups are seeking proportionate cuts in freight rates.

Rates on coal from Kansas, Missouri, Arkansas, and Oklahoma mines to Lincoln, Neb., after Sept. 28 must be reduced to the basis of like rates to Omaha, the Interstate Commerce Commission ruled after considering a complaint of the Lincoln Chamber of Commerce.

## Obituary

**James Minds**, pioneer coal operator of the Houtzdale region, died suddenly at his home in Ramey, Pa., Aug. 10. Mr. Minds had been in failing health for several years but lately seemed to be much improved. Interment took place Aug. 12.

## Industrial Notes

The reported consolidation of the Weir Frog & Switch Co., of Norwood, Ohio, and the Kilby Frog & Switch Co., of Birmingham, Ala., was confirmed Aug. 9, by J. K. Lansdowne, vice-president of the Weir company. Mr. Lansdowne declined to give the details. For the time being both companies will continue under their present managements. It is proposed to organize a holding company with Oliver De Gray Vanderbilt, president of the Weir company, as president to operate both plants. The transaction will involve no cash, but will be a transfer of stock in both companies, the shareholders qualifying equally. Mr. Lansdowne intimated that the Weir company probably would have the controlling interest in the consolidated concern.

**R. L. M. Taylor** recently was appointed district sales representative of the New York State and eastern Pennsylvania territory, known as the Reading district, of the **Reading Iron Co.**

**T. V. Buckwalter**, who has been chief engineer for the **Timken Roller Bearing Co.**, Canton, Ohio, was made vice-president in charge of engineering at the July meeting of the directors of the company.

**The Uehling Instrument Co.**, Paterson, N. J., recently appointed two new Southern agents to handle its line of $CO_2$ recorders and other power plant instruments. They are John C. Candler, 315 Glenn Bldg., Atlanta, Ga., to cover Georgia, eastern Tennessee and the southern half of South Carolina, and Charles M. Setzer, of Charlotte, N. C., to cover North Carolina and the northern half of South Carolina.

## Coming Meetings

**Rocky Mountain Coal Mining Institute.** Summer meeting, Aug. 26-29 at Price, Utah. Secretary, Benedict Shubart, Denver, Colo.

**American Institute of Mining and Metallurgical Engineers.** 132d meeting, at Salt Lake City, Utah, Aug. 31 to Sept. 3. Secretary, H. Foster Bain, 29 West 39th St., New York City.

**Oklahoma Coal Operators' Association.** Annual meeting, Sept. 10 at McAlester, Okla. Secretary, A. C. Casey, McAlester, Okla.

**New York State Coal Merchants' Association.** Annual convention, Sept. 10-12, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**Association of Iron and Steel Electrical Engineers.** Annual meeting at Philadelphia, Pa., Sept. 14-19. Secretary, John F. Kelly, Empire Bldg., Pittsburgh, Pa.

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries,** Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**American Welding Society.** Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

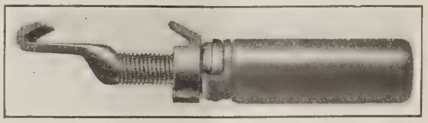
**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

## New Equipment

### Adjustable Rail Clamp Makes Tight Ground Connection

Just as long as there are direct-current trolley wires in a mine there will be certain types of machines other than locomotives operating from them. Today we have direct-current drills, pumps, hoists, fans and loading machines connected to the trolley circuits.



**Makes Tight Contacts Possible**

This device makes it easy to get a good tight ground connection at a mine rail. It is provided with a cable-connecting lug into which the wire can be soldered.

To eliminate the difficulty and danger of making efficient connections to mine rails and to get a good return circuit for these machines, the Ohio Brass Co. has designed a rail clamp which can be easily applied to the rail.

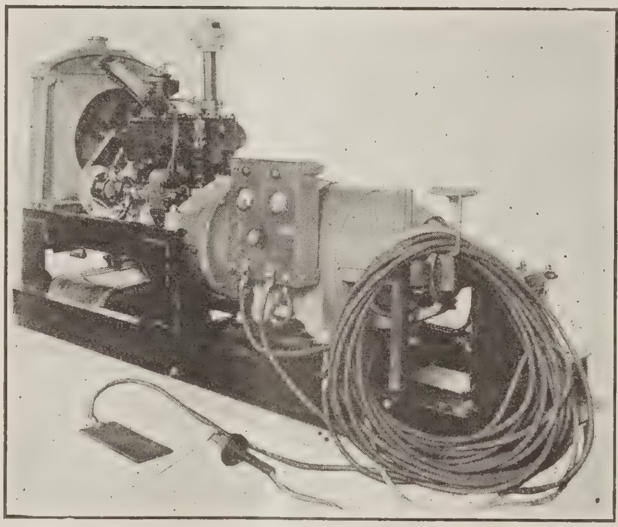
Best of all, this new clamp is adjustable and is provided with a handle for tightening it against the base of the rail. Two gripping hooks, one with a threaded bolt section and the other in the form of a threaded nut, clamp to the base of the mine rail. By turning the bakelite handle the hook or jaw which is made like a nut is clamped to the rail. This handle also is arranged so that it can be slipped back over the cable and the latter soldered into a lug formed in an extension of the threaded shaft. When the handle is slipped back into position it completely covers the soldered terminal and protects it and the end of the cable.

### Portable Welder with Gas Engine

A new engine-driven welding set recently was added to the General Electric line of welding equipment. This outfit consists of a standard WD-12 welding generator driven by a Buda engine, all mounted on wooden skids to facilitate moving from place to place.

The engine is a Buda model WTU, especially designed for heavy duty. It is a four-cylinder four-cycle machine of the L head type, with a 3¾-in. bore and 5⅛-in. stroke. The S.A.E. rating is 22.5 hp. at 1,400 r.p.m.; the actual brake horsepower is 33.

The new outfit is being marketed complete with all accessories and ready for use. This unit should be of value in locomotive repair work, in the construction of pipe lines and tanks, in repairs to mine equipment, or on any construction job where electric power is not available.



**A Complete Plant**

This 200 amp. welding outfit is driven by a 20-hp. gas engine. It is mounted on skids so that it can be moved to a position near the job.

## New Companies

**The Blount & Meredith Coal Co.**, capitalized at $10,000 has been incorporated at Cambridge, Ind. The incorporators are: T. A. Blount, W. T. Meredith, Wm. Griffith, A. A. Vance and Dwight McVicker.

**Saunders-West Collieries, Ltd.**, has been incorporated to mine coal and other minerals with head office at Calgary, Alta., and $150,000 capital stock, by Alexander Hannah, Orrin H. E. Might, Everett J. Chambers and others.

**The Delta Co.**, Ironton, Ohio, has been chartered with a capital of $50,000 to mine and deal in coal. E. S. Culbertson, Alice C. Culbertson, J. D. Davies, Miriam J. Davies and J. A. Rogers are the incorporators.

**The Kansas Line Mining Co.**, capitalized at $34,000, has been incorporated. The company is to buy, sell and lease and develop mines and mining properties. The incorporators are Frank R. Grant, W. G. Basinger and Val Hakanson.

**The Burgess Brand Coal Co.** has been granted a charter. This company has an authorized capital stock of $200,000, its general offices to be at Huntington, W. Va. Chiefly interested in the new company are Edward B. Raignel, E. E. Winters, G. C. Garred, M. R. Tetman and Louise Hart.

**The Carbonizing Coal Co.** of Canada, incorporated under the laws of the State of Delaware, has been licensed to do business in Canada on a capital stock of $40,000, and has appointed Emma E. Tait, of Toronto, as its agent.

COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
E. J. MEHREN, *Vice-President*

Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. DAWSON HALL
*Engineering Editor*

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## Will There Be a Strike?

EVERY INDICATION seems to favor a suspension in the anthracite region; nothing more clearly than the attitude of John Lewis, the leader of the mine workers. Another element that favors a suspension is the apparent determination of the Administration to keep hands off. It will do so doubtless unless the pressure from the public is too severe as seems likely.

Herbert Hoover has returned from California, and no action has been taken. It is believed that he advocates a policy of silent neutrality knowing well that any effort to bring moral pressure on either party will be construed as making any agreement that may be reached an Administration settlement, for which the executives, if they took any part, would be blamed and held chargeable if they did not provide for its execution.

Mr. Hoover's contention is that he did not outline the Jacksonville agreement in the bituminous field. The operators, however, felt the weight of the Administration's hand and made a settlement, the only one possible under the conditions. They were, they felt, told to buy and they bought—at the market price. As a matter of fact, as the record runs, they were not told to buy, but were merely told to go to market.

Still the fear was there, whether of the Administration, or of the people or of both together, and who shall say the fear of the Administration was not natural? Had not every prior Administration intervened and brought pressure to bear on the operators? Was this Administration to be an exception? Every sign pointed in the opposite direction. So they precipitately signed not for a short period but for three long years, with the unfortunate result that has been recorded again and again in these columns in all its continuous and harrowing detail.

For these reasons or others it appears that the Administration will not act. It is argued that to urge a settlement on the miners, even to advocate arbitration for them might be a source of condemnation later. Swampscott and Washington alike, are mute. Let us hope they will continue so and not weaken. If they know no cause or impediment why the issue should not be joined let them now declare it or be forever silent. For later even an arbitration commission may, like the British Government, not decide on justice and reason but seek any settlement that will tide over an unfortunate situation. It is to be feared that when the time comes and the silence is broken, it will be for an immediate fiat that the operators in the interest of an imperiled nation concede their right to conduct their business without loss.

The operators are advocating arbitration. They don't want a strike, because they don't want public disapprobation, because they have a clear case and because also they question whether a strike might last long and deplete the coal bins so greatly that the public would demand a compromise, with themselves the victims of their own pliancy to politics and popular clamor.

Victory, unfortunately, they must have. The recent freight decision makes that more necessary than ever. The new through freights are menacing even though they are framed for the good of the public and are in accord with a broad ethical policy of not restricting commerce. A strike, however, would give the low-volatile competitor a chance to displace the anthracite producer in the market, an opportunity to train the consumer in the use of a new fuel.

Continuous operation, with a reduction in wages by an arbitral committee would save the market for the anthracite miner and operator. But a compromise at present wages would be unthinkable. The operators have now more to battle for than ever, and it will make them less pliant than they might have been.

It was good of the Interstate Commerce Commission, whether by intention or without, to clear up the issue when it did. It might have delayed its orders till the operators had made an agreement without the decision in view. Coming as it does it removes an uncertainty, and the effect of the decision being delayed till Oct. 15 gives the operators that length of time, at least, to prepare the miners and themselves to act in the light of the decision instead of under its crushing burdens.

Alas! the miners do not weigh the future. They live wholly in the present, and it may take them some months or even years to get a true measure of the Commerce Commission's ruling and when they do it will be too late. The anthracite market will be "shot to pieces." The time to save the situation is now, but the miners cannot see it, and the union leaders do not dare to see anything but what the more aggressive union men in the anthracite region dictate.

## Why Not Apologize?

WHY SHOULD the Philadelphia *Public Ledger* in its editorial of Aug. 19 retail with glee the misfortunes of the anthracite operators and prophesy the time when the anthracite industry may be "as vital to the Nation as the toy-balloon business"? Surely it has been by continually increasing wages and imposing the dominion of the union that the anthracite industry has been restricted. It has been the custom of past administrations, politicians and public to impose burdens and then to slide from underneath them by buying coal which has not been so burdened. Some of the business has been lost to union coal it is true, but now it is about to go in large measure to non-union coal regions where wages are lower.

It would seem that the citizenry, and with it the *Public Ledger* should be disposed to apologize for having by unfair decisions, made for political reasons, ruined the anthracite business, but instead of that it yells its triumph. Its unfairness has destroyed the anthracite market, and it is happy.

Now if the anthracite industry is an unnecessary occupation it is surely not needful that it be scolded and regulated. Was the public right to insist that it sell these "balloons" at minimum profit and pay well for the manufacture of them? Now that the public knows that the burning of anthracite is merely a game at which only the foolish play, why not let the industry alone. Unfortunately we must continue the balloon-smashing business now we have started it, and one must question whether the administration will be able to make the public desist from its time-honored sport.

## Ordeal by Combat

A LEADING editorial in a New York daily opposes the immediate submission of the anthracite question to arbitration and says "the public cannot forever be made to bear the burden of the hard-coal mines' peculiar domestic strategy." It continues by suggesting that miners and operators should arrive of themselves at an agreement and that "this continual process of maneuvering what ought to be a technical question is not only inexcusable, it is also just a little tiresome." This same daily in past years has been in favor of arbitration of coal disputes, but that was when the strike or suspension, whichever it should be termed, had been long in destructive operation.

The coal industry has tried out the ordeal by combat with the union. It has had long strikes and the public has objected strenuously. The industry has been told in no equivocal terms that such combats must not occur again. So the operators call for arbitration and they are told now that their willingness to arbitrate is premature and that the public must not be bothered.

Let us take a glance back into history, where our prejudices will not be so strong as about present-day matters. Long ago when every dispute ended in a trial by combat or a personal encounter of a less well regulated character, the kings found themselves humiliated by their enemies and impoverished by the destruction of the nation's substance.

The kings did not like to bother with courts and juries and they tried to make their subjects cease their bickerings by a system of pressure which was based more on a desire for peace than a love of justice. But the fights continued. So long as there was only government interference without justice, there was combat. The ordeals and the hand-to-hand encounters ceased only when kings were willing to be burdened by the quarrels of their subjects. It might be "just a little tiresome" that these underlings sought justice, but kings must tire occasionally or be replaced by others not so negligent. And so they established courts, and more and more was left to the adjudications of the judges.

M. Jourdain, a bourgeois who once on a time desired to be instructed in literature, asked his instructor to acquaint him with a form of expression that was *"ni prose ni vers,"* neither prose nor poetry. Now, something like this is what some of the would-be pacificators are seeking, neither strife nor judicial determination. However, it is clear that men who have a quarrel must have one or the other means of settling their dispute. In this case it must be either a suspension (likely to be long and distressing for the issues are real) or an arbitration.

The public believes the courts should be ready to act before anyone is hurt, whether disputants or merely unoffending bystanders. So let us have the arbitration now, before the supply of coal has dwindled away, when we can act without excitement and without fear of a coal-less winter. Arbitrators are sometimes moved to decide through fear of consequences to the public rather than by the actual implications of justice. We are not sure that a little opportunism might not in times of dire national need rightly temper judgment.

The British Government has just settled its dispute between miners and operators by promising a payment of $100,000,000. That makes a Coal Commission costing $600,000 look relatively cheap. The British Ministry does not even try to defend the essential justice of its actions. It admits it is buying peace at the lowest merchantable price. So why should we delay if we want a right decision and not merely one which is obtained like that in Great Britain by buying out both parties?

## Rock Tunneling

MORE AND MORE the practice of driving rock tunnels in coal mines is increasing, because the relative cost of roadways of this type is decreasing, and it is found that such construction removed from mine operation is more permanent than a roadway would be if driven in a coal bed in process of extraction.

As for cost, there is a great saving from the use of loading machines which do the hardest of the work—mucking. With such a machine the miner is quite willing to remove yards where he formerly was content to remove only feet. With power drilling equipment he can drill holes with great speed and with minimum labor. By shutting off the tunneling from the rest of the workings the management can often operate the excavation as something apart from the mine and without being subject to laws framed to protect the operation of a going colliery and with better care for the health and safety of the workman.

Thus the operator can provide an air duct and a special fan that will clear away the smoke and waste gases of a shot or shots in a few minutes after they are formed, saving time and providing for their more perfect evacuation. Shots can be fired with delay fuses such as are used in metal-mine and railroad tunnels. Furthermore, the operator can avoid the dangers of a bad drawslate which make driving roadways in the coal hazardous.

Another advantage is that the operation of the mine is not interfered with when the tunnel is being driven. Extensive grading of mine roadways is a source of much annoyance when the mine is being operated, and the transference of rock clutters the mine roadway. It may be added that a tunnel in the rock saves extensive and costly timbering with all the dangers that accompany the use of such construction in coal.

One wonders sometimes that mines continue to be worked under all kinds of disadvantages as to haulage and drainage when a roadway might be driven that would be favorable to both. The idea of driving rock tunnels, however, is unusual enough to be regarded in many places as new. Yet the rock tunnel in many anthracite mines is used quite extensively, being found more permanent than roadways in the coal. Where the seam opens on the hill at an inconvenient level, a rock tunnel can sometimes be driven that will debouch at a level convenient to the top of the tipple. With all the modern equipment genius has invented and developed, the driving of a rock tunnel is not such a fearsomely expensive, slow and difficult job as it used to be.

# Examining Engineer's Work Plays Vital Part in Financing of a Coal Mine Property

## Earning Value and Not His Appraisal, However, Should Fix Actual Worth—Excess Rates Should Not Be Put Upon Coal Bonds—Outline Shows Items to Cover in Appraisal

**By John A. Garcia**
Consulting Engineer, Chicago, Ill.

CONFUSION EXISTS in many minds concerning sound financing of coal properties. Some of this possibly can be removed by considering the part which good engineering should play in aiding banker and coal operator to arrange properly the affairs of a producing company. They should realize that an engineer's appraisal shows the physical replacement cost, not the selling value, of a property. He should not be expected to overburden a mine with inoperative acreage merely to raise the total value in protection of bonds. The banker might profit by the judgment of the experienced engineer even in fixing other basic terms for mine financing. Everybody concerned ought to understand what an appraisal should cover, but reliance upon the engineer should not cease when that document is filed.

The word "appraise" is defined in the dictionary as—"to make an official valuation of, or to set a price on;" the word "value" means worth, and the word "worth" means, among other things, the market value. In business transactions an appraisal is ordinarily understood as a figure or price for which the property may be sold on the market.

However, since there is no open or regular market for coal acreage or mines an appraisal has necessarily come to mean something other than as specified in the dictionary, though this fact is not generally known and the appraised figure is often mistaken for the engineer's calculated selling price for the property.

An appraisal of the physical assets, as applied to coal mining, is the calculated replacement cost, depreciated for condition, obsolescence and mine life and, therefore, no true relation exists between the appraisal figure and the actual value or worth of the property as a money making business proposition, excepting in cases where the two totals check by coincidence. For example, a mine may appraise on a physical replacement basis at, say, $500,000, but can earn in normal times only $10,000 per annum, in which case the true value or worth of the operation on a 20 per cent earning basis is only $50,000 or one-tenth of the reproduction cost.

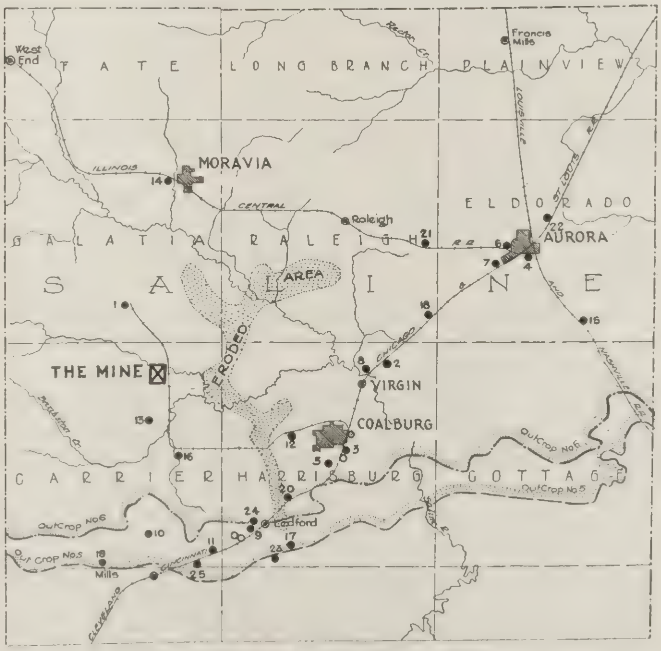
Misunderstanding of these facts has led bankers and operators, and especially promoters, into grievous errors in financing coal properties; the banker wants to see the total values high enough to protect his loan several times over but with unit prices low enough to permit of full coverage in event of forced sale under default, and the other side, having a fixed or limited property wants the unit figures high so that the total may reach the banker's requirements.

The engineer, striving to be impartial, is bedeviled by the conflicting interests, can satisfy neither side and the ethics of his profession, together with his duty to the investing public, often induces him to take the banker's viewpoint even though he knows full well that the additional acreage or property added to bring up the physical valuation will form a fixed charge and often a serious burden to the operator.

For example, a mine with an assigned acreage of proper size may appraise at $500,000 and have an actual annual earning record of 50 per cent on its valuation with assurance of continued performance, but to obtain a bond issue of $300,000 on such a good business proposition, the operator should own outright enough property to make the total physical replacement valuation approach $900,000. The carrying charges on the additional $400,000 is clearly a fixed burden to the operator and may be offset on his books only by a constant increase in the value of the acreage which may or may not accrue.

The banker's insistence on other so-called safeguards in addition to the forced-sale value is probably a wise precaution from his viewpoint while negotiating the loan, but, unfortunately, will ultimately bring about a direct overhead expense that may form a menace to the sinking fund or interest charge.

In most cases the mortgagor requires that approximately half the coal in the property shall remain unmined when the bonds are paid off, which seems quite unfair since the sinking fund applies to all coal hoisted and, therefore, if the output should become unusually large, the fund automatically increases and to the extent of such increase the basic security of coal in the ground



**Coal Field Map Is Worth While**

The location of the mine to be financed with relation to its neighboring competitors—each other mine numbered and named in the map's caption—together with other surface features such as the location of nearby towns and rail lines all help to make the appraisal complete.

is converted to cash in sinking fund. It is assumed, of course, that the available coal as calculated is, in quantity, sufficient to amortize the investment via the per ton rate.

Again, a mortgage may properly be placed only on fee simple acreage or mineral owned outright in order to be a first lien. Very often, especially in the midwestern field, the royalty rates on leased land are so low that outright purchase would mean a very bad business investment, but, nevertheless, the purchase must be made if the rights of the mortgagor are to be prior to those of the landlord. This matter becomes serious only when a large portion of the acreage or some particularly choice tract is a leasehold and in such cases the proper procedure, in my opinion, is either to acquire title or finance with stock rather than bonds, though it is possible some guarantee may be made by the lessor that will protect the bonds in event of default.

The duty of the engineer making an appraisal may possibly require that he furnish an analysis of the coal but hardly a statement as to its application to furnace requirements or a criticism of the quality, and such questions as personnel of management, contracts and revenue on tonnage, production costs, etc., are clearly outside the province of an appraisal. These items are, among others, of vital importance to any financial set-up so it may readily be understood how utterly valueless an appraisal of physical property is of itself in determining the true worth of a coal mine or its possibilities as a business proposition.

In my opinion the practice of rating coal bonds up one or two points above other industrials for interest and charging fifteen to twenty per cent for flotation is not fair, for either the issue is good and can stand up under microscopic examination with other industrial issues, in which event it should not be penalized, or it is not good and no reputable banker should sponsor it.

### Discounts Indicate Weakness

The argument that the sales resistance to coal securities necessitates such discounts and high interest rates appears fallacious to me, for any sensible investor would immediately become suspicious of a 7 per cent bond on a 5 per cent market, or a 95 quotation on a 100 par bond, either of which is indicative of weakness and is the very thing an investor or banker seeks to avoid so that the fact that the interest rate is over the normal or the bonds are quoted under par, actually increases sales resistance and pyramids the difficulties of marketing.

The hazards of the industry do not appear to warrant any excess rates on coal bonds, for good management presumes ample insurance including catastrophe, and if the operation is extraordinarily hazardous as to gas, fire, flood, etc. the load on first mortgage should be proportionately reduced or, again, the proposition is for stock rather than bonds. It is also true that a mine disaster that destroys the physical property beyond recovery is a rare occurrence. Usually the loss is in personal injury cases covered by liability insurance, as is the business loss when catastrophe insurance is provided.

GENERAL VIEW - EAST
GENERAL VIEW - WEST
MAIN TIPPLE
MAIN TIPPLE & HOIST HOUSE
AUX. TIPPLE & MINE FAN
AUXILIARY TIPPLE
SHOP, SUPPLY ROOM & OFFICE
LOCOMOTIVE SHED, AUX. HOIST HOUSE & WASH HOUSE

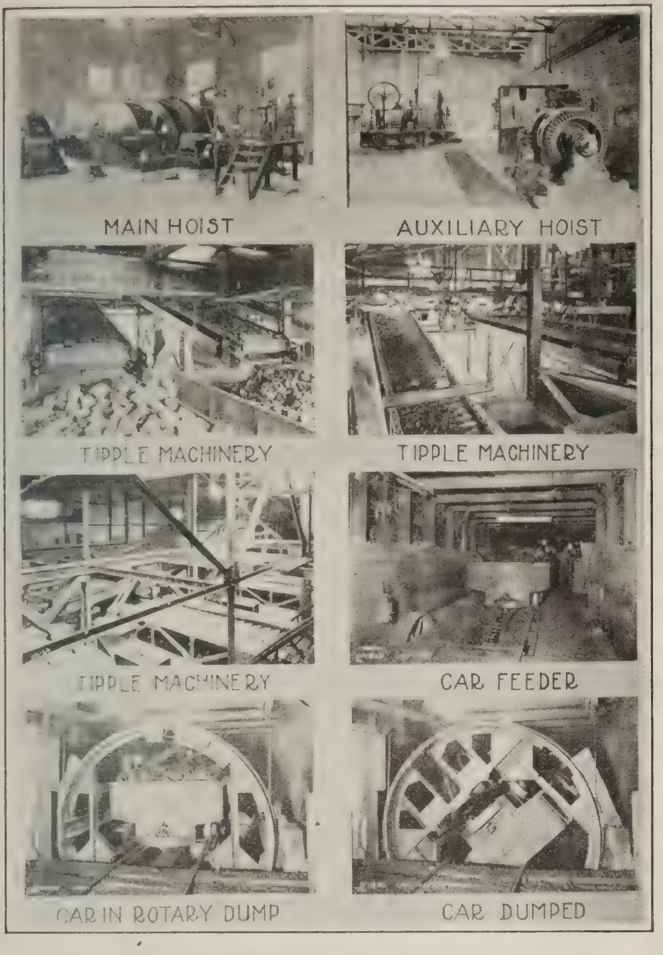
**An Important Feature of an Appraisal**

Anybody interested in financing a mining property can get a better idea of the character of it with the aid of photographs, properly arranged, than he can from the written report alone.

Should a report, an appraisal and an audit each reflect a safe and profitable coal operation—and this is the only kind on which a bond issue may properly be placed—the terms and interest rates should be in line with those of other industries. Because of seasonable demand and recurrent cycle of peak production every few years, serial bonds are not especially desirable, often proving to be a heavy burden in times of stress and a light load in flush periods during which it would be desirable to retire larger portions of the loan.

Although the history of an operation has a bearing on the set-up, too often this matter is given more consideration and importance than the facts warrant. An old and successful coal mine with a fine record may be much more of a risk than a new and modern mine with no earning record at all. The practice of including old and obsolete operations in a merger because of their earning record—"to sweeten the picture"—can be justified only when their first cost is more or less nominal or their acquisition by merging interests permits of reduced strain in competition for marketing the output, thereby tending toward elimination of suicidal prices and unnecessary production.

The appraisal of the physical property is essentially an inventory with prices and usually there should be two sets of figures for each item: First, the present-day cost and, second, the depreciated replacement cost, though the latter is sufficient if the percentage of depreciation is shown, excepting in cases where the replacement cost new is desired. The field work, though mainly clerical insofar as taking inventory is concerned, calls for expert knowledge of all classes of equipment and structures as used at coal mines to note intelligently the amount of deterioration and, especially, obsolescence. The notes must always give governing dimensions of



**How Well Equipped Is This Mine?**

This important question, always asked concerning a coal property about to be refinanced, is only partially answered if the appraisal does not contain clear photographs of the machinery and equipment.

buildings, as well as specifications and concise notations that will aid the office in calculating values.

Detailed inventories of all buildings, equipment and miscellaneous improvements are, of course, taken in the field and the mines entered and inspected to determine the thickness and characteristics of the coal seam. The present condition and age of all items is noted to be used in fixing the percentage of depreciation.

All items are figured for replacement cost as of the current date and are depreciated according to the conditions in which they have been maintained, due allowance being made for obsolescence and number of years in service. On the permanent buildings, equipment, shafts, slopes or drifts, the depreciation is further adjusted to give effect to the ratio of acreage depleted to assigned acreage.

In arriving at replacement cost, the market price of labor and material prevailing in the district where the plant is located is used to determine the cost of each item in place. Throughout the appraisal the "Replacement Cost" of the detailed exhibits in the summaries includes all expenses for tools and labor required to furnish each item in place, including contractors' contingencies and profits as of current date. To this cost a percentage varying with the different classes of work is added for expense of organization, engineering and incidentals.

The item of "Organization" includes such cost as general office expense, obtaining bids, awarding contracts, bills of material, purchasing material, salaries of officers chargeable to construction and legal expense chargeable to construction.

The item of "Engineering" includes cost of preparation of plans, drawings and specifications, together with expense of general supervision and inspection required in carrying out the plans and specifications.

"Incidentals" cover all general expenses that lie outside of contracted cost, such as might be included as extras on the contract price. These may be due to small changes in design, to interference with construction from various causes, such as strikes, uncertain foundations and to insurance against fire and accidents. The aggregate of these percentages vary according to the class of work.

These percentages are added to the subsummaries and the total represents the cost to the company of the property detailed in the exhibits.

Development includes cost of yardage, construction of the shaft bottom, and of room necks in "live" territory (usually between inside partings and working faces), and carrying charges during construction for a period of two to four years while opening the mine, including taxes, interest, and legal expenses.

Mineral rights owned are valued on "going value" of similar blocked-out acreages in the field, and leased acreages on the differential between the value of leases in connection with property and present "going royalties" in the field.

The additional labor involved in making an appraisal equivalent to an accurate inventory is well justified by the uses to which such a record may be put, for it may then be the official record for the purchasing agent in replacing or duplicating parts, for the sales department in the matter of sizes and preparation equipment, for the auditor for adjustment of fixed property value on the books, for the fire, tornado and other insurance policies, and the like. The best evidence of good field work by an engineer is a set of notes that can be readily interpreted by the office force without contact or explanation by the man who took them, but because of the number and variety of items in a coal mine inventory it is best to have the field men at least aid in the office calculations.

### Include Photos of Property

Small photos of the buildings and structures should always be taken, as a picture gives at a glance the character and type of the plant and permits of prompt general classification of the property. These photos should be neatly grouped and reduced down to not more than eight pictures to a standard sheet. Clear titles or descriptions should be written on each.

A map of the property should always accompany the appraisal and should be drawn on a scale small enough to permit of ready reference. A large-scale map is unwieldy and sufficient data usually can be incorporated in a neat, small drawing. These maps should show location of buildings and structures with governing dimensions (especially for fire insurance records), the surface owned and leased, the mineral rights owned and leased, worked-out area, etc. and if more than one workable seam is present it is often desirable to have a separate map showing property rights for each seam.

The replacement cost of equipment and development is simply a matter of calculation and reference to data sheets or files for unit prices. For check, the totals should be compared with similar items in other appraisals. If the engineer handling the work has no accumulated data or cost records on coal-mine equipment, it will be exceedingly difficult to place prices on the innumerable items entered on the inventory sheets, and though it is, of course, possible to obtain the information from the various manufacturers, the time and cost of such a laborious search generally rules out the unequipped engineer from this class of work unless approximate figures will suffice.

The valuation of underground development, entries, headings, etc. is a much disputed question, but in the absence of any standard or fixed formula for determining a fair value for this important item in the appraisal, it is my custom to credit the mine with the reduplication cost of the mine bottom, the partings, the advanced development inside the partings, and any item of construction that fairly and properly can be charged to capital account rather than operation, and then depreciated according to condition and mine life.

The rail, trolley wire, pipe, etc. between mine bottom and parting is given a depreciated replacement value but no credit is allowed for haulage roads or air courses between these two points on the theory that their very existence forms a penalty to the operating costs when considering replacement values for comparison with a new mine in virgin acreage. This method may not be scientific but it gives a fairly accurate figure on the cost of replacing the existing workings with an operation developed for the same output.

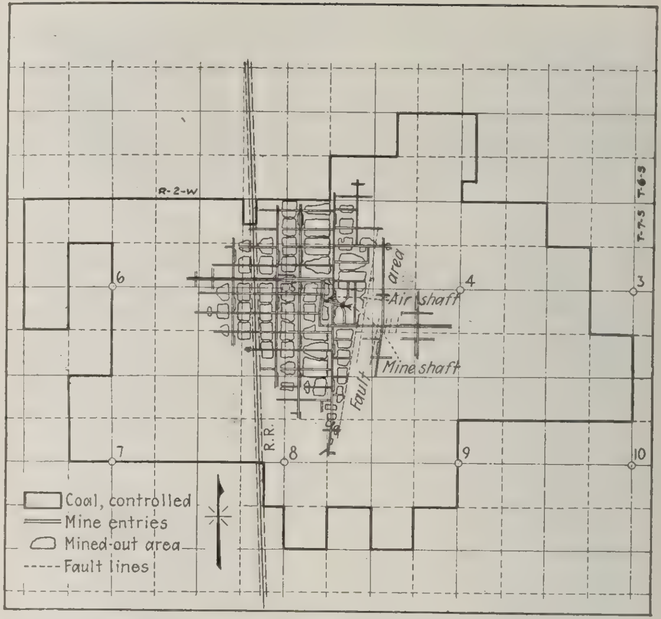
The acreage or mineral valuation is usually the most difficult part of the whole work. The variation of a few dollars per acre or a fraction of a cent per ton of coal in the ground may be sufficient, in a large tract, to wipe out the total replacement cost of the improvement, and there are so many theories of valuation of available mineral that a veritable maze of problems confronts the engineer in his efforts to absorb, consolidate and reduce to definite terms the demands of the conflicting interests and alleged authorities on this question.

### Should Establish Replacement Cost

However, if the engineer will only keep clearly in his mind the fact that his main effort is to set up a statement of replacement cost, the problem is reduced to its simplest terms and his value per acre automatically is placed at the going value of similar coal land in the field, and the price of land as established by recent deals becomes the basis of his calculations which are adjusted arbitrarily for local or special considerations.

On leaseholds it seems fair to base the values on the differential between the going royalty of the field and that specified in the lease, and if there is no differential it is the writer's custom to give no credit to the property for leased coal—always remembering that the appraisal is a replacement proposition and not a statement of value based on earning capacity which is an entirely different thing.

Accompanying every appraisal there should be a valuation as established on a basis of safely anticipated profits, capitalized on about a seven per cent annual dividend and refunding capital by reinvestment of a sinking fund at four per cent. This statement, when conservatively worked up as to days of operation, annual output and profit per ton, either assumed or determined from past records, provides a check on the physical value of the property and gives, under fixed assumptions, a good idea of the possibilities of the proposition from a business viewpoint.



**Relation of Mine Workings to Property**

This typical map, a valuable part of any good appraisal, indicates the size and location of the underground workings, some of the local geological conditions, the boreholes on the property, the location of the railroad that serves the mine, the surface boundaries and the like.

The capitalization of anticipated profits is merely the calculated worth of the business as an investment at seven per cent or ten per cent or whatever one may consider a fair return on his money. The engineer first finds the total available tonnage, assumes a fair running time, an annual output, and figures the life of the operation. With this basic data and an assumed profit per ton he may calculate the annual dividend and establish therefrom by reference to tables, if desired, the present worth of such a dividend.

If the assumptions as to output and profit are correct this method determines the true worth of the operation, and the replacement cost is merely a check to find the approximate amount of money necessary to establish a business that would provide similar ultimate financial returns.

The theory of zoning mineral rights available to existing operations and establishing values per ton or per acre on a sliding scale adjusted to time periods of extraction has no place in the scheme of things when replacement cost is considered, but is properly applicable to a set-up on a company's books for the purpose of scientific amortization of property, since the zone of the coal seam being worked at present is apparently of greater value to the operator than the coal in the zone ten years later.

The word "apparently" is inserted above to avoid committing myself to this theory which is provocative of much discussion and many seductive arguments. Space limits the elaboration or analysis of the zone theory as applied to coal land valuations.

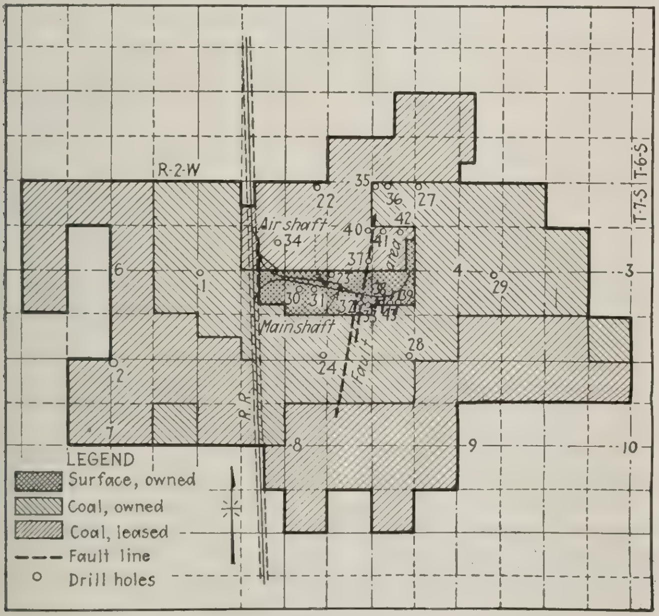
The logical answer to the various objections to appraisals forming the basis of a financial set-up is to provide an engineer's report which shall set forth clearly, fearlessly, and conservatively the governing, as well as the smaller factors that have to do with the operating and business phases of the proposition. Also an audit of the books should be prepared by auditors skilled in this special branch of industry. The auditor should be able to understand and appreciate the effect of war years and of "fat" but short contracts on the record of earnings, and so arrange his report as to reflect, if possible, the conditions of the business in normal periods. The engineer, if qualified for such service, will be governed in his analysis by normal conditions rather than either the subnormal or the exceptional.

Accuracy and knowledge of where to find the pertinent facts in the records, as well as ability to set them out properly in his report is the province of the auditor, for his work is mainly mechanical or clerical, insofar as this part of the job is concerned. He should not be expected to submit constructive criticism on the proposition as a whole as deduced from the figures on his balance sheets, for this requires a detailed knowledge of the operation which he, in all fairness, should not be expected to possess and is, without question, the obligation assumed by the engineer in accepting the commission of making a report.

### Engineer Should Accept Responsibility

A mining engineer's report has to do with any and all factors entering into the problem as a whole. The summation or conclusions in the report are often the only part read by the banker. This section should be clear, clean-cut, brief and free of qualifications. If it is possible, the engineer should say "yes" or "no" and accept responsibility. In other words, the engineer should either accept or reject, for the proposition is either good or not good from the viewpoint of an investor in bonds. There is no middle ground, for the first consideration of a mortgage is security and if any gambling element is introduced into the scheme of things, a bond issue should be automatically ruled out.

Engineers' reports on coal properties, if made in connection with a proposed bond issue or for sale and purchase, must of necessity cover almost every conceivable angle of the operation and, of course, no influence or prejudice of any kind whatsoever should affect or color either the statistics, recommendations, criticisms or remarks. The report on a mine should read alike for the buyer or seller and should be in its essence simply a statement of facts and conditions as found, together with an honest, unbiased analysis of the proposition in whole and in part, and a definite recommendation as to the main question if that is possible.



**Typical Property Map**

The engineer's appraisal should be accompanied by a good many illustrations like this, to show readily some of the main features of the proerty. This one, for instances, shows the surface owned, the coal owned and leased, a fault line that crosses the seam, drill holes, etc.

There is no reason why the engineer should confine his investigations and remarks to the purely technical or statistical phases of the work; in fact, there is every reason why a competent consulting engineer must not, and it should be both his privilege and his duty to adjudge the operation from the commercial angle, as well as the engineering. Often the physical property rates high in the scale of factors that make up the measure of the true worth of a mine, but because of high freight rate, lack of markets, labor shortage, over-production in the field, or other causes generally considered outside the province of a strictly engineering report, the operation may be hopeless so that any phase of the problem that affects the final answer of "yes" or "no" must be considered and weighed.

Investigations and reports that have to do with operating matters, efficiency, safety, the system of mining, fires, explosions or any of the different phases of mining are problems requiring special treatment and handling in each case. Although there may be some attempt at standardization as to the form of the report, there seems to be no such necessity as obtains in reports for the purpose of making a loan or a purchase. The maximum of pertinent data in the minimum of space should be the aim of the engineer in writing up his report and since it is read, as a rule, by those not versed in technical language, he should express himself clearly and simply so there shall be no ambiguity or possible misunderstanding.

### Summary of Report Important

The summary or recapitulation of the report is the bead of the assay and should be recorded only after a thorough and careful analysis, for the conclusion reached by the engineer should be the result of conscientious study of the problem at hand joined up with his judgment as obtained from good experience and expressed in definite terms and clear language.

The following structure is suggested as the framework for a report on a coal mining property, and its elaboration "up" or "down" is a matter of the requirements of the individual case and the judgment of the engineer. The schedule is submitted as fairly representative of the data required for what is known as a complete report but, of course, may be condensed or briefed if the client seeks information or advice only on specified items or sections. This entire structure should be completed in cases of purchase or sale, not only for protection of the engineer himself but for information of all concerned:

**Outline of Report on Coal Property**

*A—Location:*

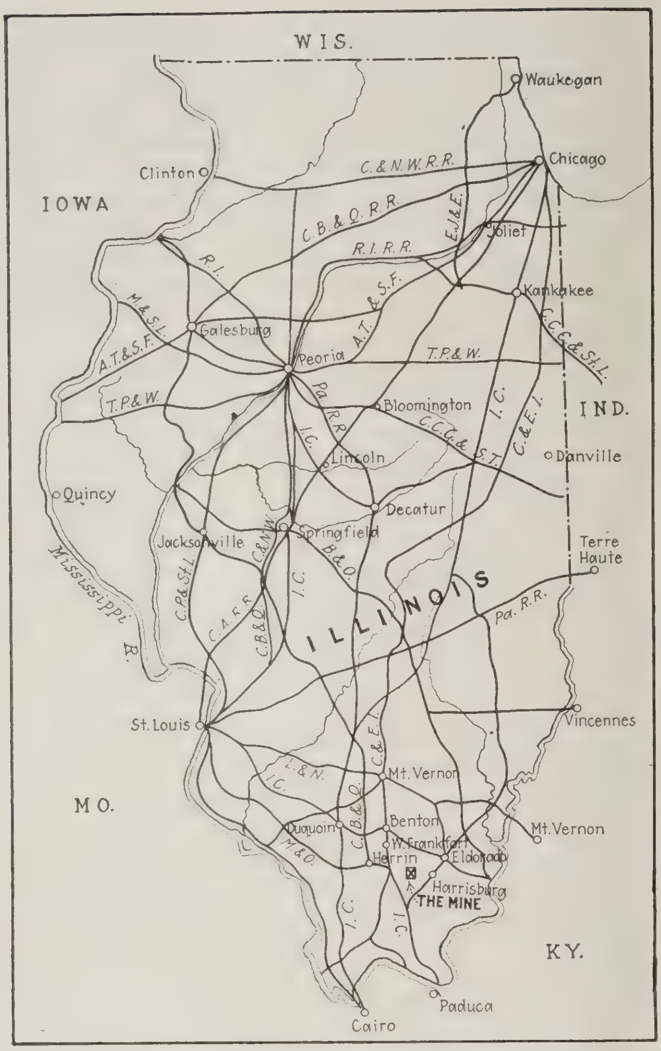
1. (a) Name of company, (b) geographical location, (c) coal field.

2. (a) Topography, (b) railroads serving property, (c) towns furnishing labor supply.

*B—Financial structure:*

1. When organized and under laws of what state.

2. Total capitalization: (a) Par value of common stock, (b) par value of preferred stock, (c) amount of each outstanding, (d) amount of each unissued, (e) bonds or other



**The Relation of Mine to Market**

This type of state map, which should always accompany a coal mine appraisal, shows at a glance the geographical relation of the property to its principal markets and its rail outlets.

securities issued and date of maturities; amount outstanding; amount in treasury.

3. Names of officers and directors.
4. Balance sheet to present date and copy of last certified accountant's report.
5. Contracts or commitments, if any.
6. Statement of contingent liabilities, if any.

*C—Acreage:*

1. Map showing mine property; also mine workings.
2. Acreage assigned to mine, separated into "owned" and "leased." If more than one mine, acreage assigned to each operation.
3. Additional acreage available, if any.
4. Unassigned acreage, if any.

*D—Coal seams:*

1. General geology of the district.
2. Description of each seam underlying the property: (a) Drill records, face sections, etc., showing roof, thickness of seam, floor; also persistent streaks or bands of impurities. (b) The lay of the seam; i.e., level, rolling, or pitching. (c) Gaseous or non-gaseous. (d) Wet or dry.
3. Analyses of face-cut samples; if possible, from four sides of mine workings, especially from sections in which the mine will operate during the greater portion of its remaining life. Also representative analyses of prepared sizes, if available with percentages made.
4. Purposes for which coal is adapted—coking, gas, domestic, steam.

*E—Recoverable coal:*

1. Tons of coal per foot per acre in place.
2. Percentage recovery, past mining and in field.
3. Probable recovery, tons.
4. Possible additional recoverable, tons.
5. Total recoverable tons remaining.

*F—Life:*

1. Yearly tonnage, days operation, and number of tons per loader and per day man employed for past five years at least.
2. Present average daily output and capacity tonnage.
3. Life of mine based on 200 days' active operation per year and average tonnage per day now being obtained.
4. Same data on maximum tonnage for which equipment is designed.
5. Same data on average running time of mine and field.

*G—Description of plant:*

1. Top buildings: (a) Type, suitability.
2. Top equipment: (a) Preparation plant, (b) Power supply, (c) Haulage and hoisting, (d) Ventilation, (e) Shops.
3. Type and size of opening; i.e., shaft, slope, drift.
4. Shaft bottom, size and layout.
5. Haulage: (a) Weight and width track, (b) Size and type mine cars, (c) System of haulage; i.e., trolley locomotives, storage battery locomotives, mules, horses. (d) Location of partings. (e) Grading.
6. Mining: Pick or machine; type of machines.
7. Loading: Hand or mechanical.
8. Underground power system.
9. Underground pumping system.

*H—Underground mining system and conditions:*

1. System of mining: Room-and-pillar, panel, longwall, combination of these or special layout.
2. Dimensions: Height and width of entries, chain pillar, barrier pillar, rooms, and number of rooms per panel or section.
3. Method of supporting roof: (a) Entries; (b) Rooms; i.e., props, cross-bars, pack-walls, cribs, top coal.
4. Ventilation system: Air courses, stoppings, overcasts.
5. Development: Scattered, systematic, adequate.
6. Safety provisions: Compliance with state laws; manways; refuge holes marked; condition of entries; sprinkling system; rock dusting; first-aid stations; type of lamps. (Note last report of state mine inspector.)

*I—Labor:*

1. Wage scale. Premiums above scale.
2. Actual number of employees and their classifications.
3. Housing facilities.
4. Class of labor available.
5. Can labor be handled more efficiently?

*J—Mine costs:*

1. Itemized monthly cost sheet, (actual and assumed*).
2. Itemized operating day cost, (actual and assumed*).
3. Itemized idle day cost, (actual and assumed*).
4. Itemized supply cost.
5. Itemized mine office and expenses.

*Assumed—based on knowledge of results obtained in efficiently operated mines in same or similar fields.

*K—Freight rates and car supply:*

1. Freight rates to principal markets and from competitive fields to same markets.
2. Discuss car supply of mine and field.

*L—General questions:*

1. Is the controlled coal acreage so situated as to be economically mined from the present openings and tipple?
2. Is the equipment, inside and outside, adequate, efficient and well maintained? If not, itemize necessary additions and approximate cost.
3. Can present production be maintained over a period of years without major expenditures? If not, itemize and estimate cost.
4. What limits output at this property?
5. Is coal preparation equal to that of competitive mines?
6. Is the physical condition of the coal seam, roof and bottom favorable to economical mining?
7. Are haulage roads, air courses and other underground elements in good condition?
8. Are there any fires, squeezes, areas of standing gas or water or other abnormal conditions present in the mine, and have any such conditions been encountered in the past?
9. Is the mine and local management experienced, capable and progressive?
10. In your judgment, is the quality of the coal, cost of production and freight rates such that coal from this mine can be profitably marketed in competition with coal from other mines in the field and in competitive fields?

*M—Summation:*

Criticism, suggestions and recommendations.

# Learning the Bottom Facts in Indiana

By J. H. Edwards
Associate Editor, *Coal Age*,
Huntington, W. Va.

KNOWING DEFINITELY, "what is on the bottom," before building the permanent top works is of great advantage to any coal operator. Especially is this true in this period of revolutionary changes in mining methods. An example of "proceeding with caution" is furnished by the development of the new King mine of the Princeton Mining Co., located about three miles south of Princeton, Ind. Although this development is designed for an ultimate capacity of 4,000 to 5,000 tons per day and thus will be one of the largest operations in the state, up to the present it is what might be termed an experimental mine. All loading is being done mechanically, four different makes of shoveling machines being now in use.

The shaft of the King mine is the deepest in Indiana, having a total depth of 439 ft. The coal mined is the No. 5 bed, lying under gray slate, and is of comparatively high quality. The measure worked averages 8 ft. in thickness and is free from partings. These features together with the fact that about 4,000 acres of this coal is available brings the King mine into prominence among the coal-producing enterprises of the state.

This mine was opened in August, 1923, but on account of the market conditions prevailing no attempt has been made to increase the production rapidly, although entries have been driven with rapidity. In the first six months of this mine's operation over six miles of entry was driven, not including breakthroughs. From this length of entry only a few rooms have been turned, or only enough to afford experimental working places for certain of the loading machines. The mine is under the management of Robert J. Smith of Terre Haute who several years ago managed a property of the Deep Vein Coal Co. near Princeton.

The headpiece accompanying this article and also Fig. 1, show recent views of the topworks of this mine. The only buildings of permanent construction are the hoist house, bath house, and fan. It is the intention to replace the present steam hoist with an electric machine when it becomes desirable to increase the production of the mine beyond the capacity of the existing equipment. The present tipple is highly temporary in nature but is fitted with shaker screens, and loads on two tracks. Alongside it is an elevated bin for storing that portion of the coal that is retailed direct from the mine.

Visitors are impressed by the fact that the King mine is being developed on the four-entry system, which is a decidedly uncommon plan of development in Indiana. The main entries are being driven along a line upon which test holes indicate that the bed gradually dips. The grades, however will be slight, for, generally speaking, the coal lies in a horizontal plane. The mine is gassy, but not to such an extent that it has been considered necessary to prohibit open lights in all sections, nor to prohibit the use of the ordinary types of electrical equipment.

## MACHINE LOADING THROUGHOUT

Four makes of loading machines are used in this mine, and no hand loading is being done. Altogether there are six machines installed, four are on narrow work and two in rooms. An idea of the production attained per machine may be gained from the April tonnage record. During that month only five machines were in use but the average daily output of the mine was 452 tons.

The last machine was installed so recently that no figures covering its performance are available. This machine, an Oldroyd, is shown in Fig. 2. This photograph was made as the loader stood on the supply track

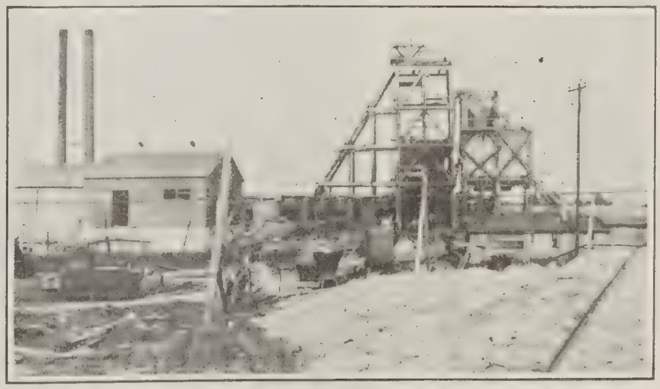


**Fig. 1—The Deepest Shaft in Indiana**

The officials of the King mine will "know what is on the bottom" before the permanent topworks are built. A steam hoist is now handling the output but it is planned to replace this with an electric hoist when the time comes for installing permanent, high-capacity equipment.

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The headpiece shows the King mine of the Princeton Mining Co. It is destined to be one of the large producers in Indiana. It is located three miles south of Princeton, and as yet is in the development and experimental stage. The only permanent structures are the hoist house, fan, and wash house. The latter is seen in the extreme right of the picture.

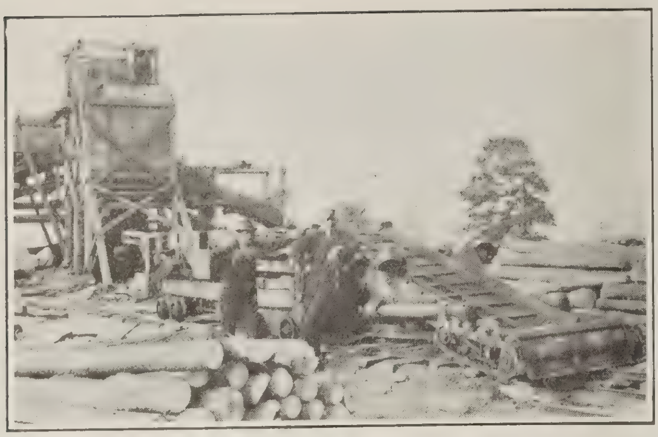


**Fig. 2—An Oldroyd Loader Going in for Trial**

Bruce Jeffers (left) and Bruce Rogers, superintendents at the King mine, have a few ideas of their own regarding mechanical loading. Their conclusions are based on actual experience with four types of machines.

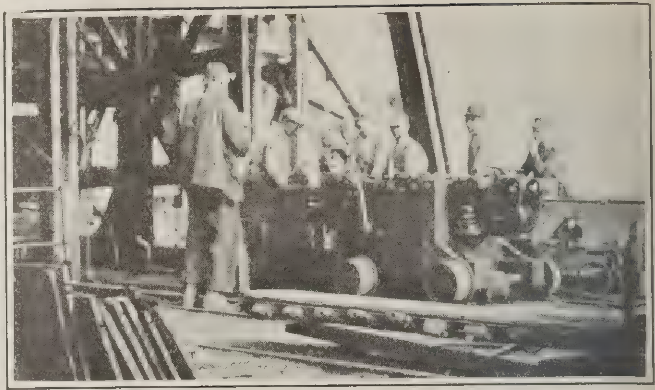


**Fig. 4—Moving the Oldroyd Cutter onto the Cage**

This machine is now used in conjunction with a loader of the same make. The cutter bar and its supporting goose-neck have been removed in order to get the machine onto the cage. The main body of the machine resembles a locomotive but the trucks are placed at one end in order to balance the goose-neck and cutter bar.

the day before it was taken apart and lowered into the mine.

An Oldroyd cutting machine is used in connection with this loader. Preparations for lowering the cutting machine into the mine are shown in Fig. 4.

Two Joy, type 4BU machines, were the first mechanical loaders to be put to work in the King mine. Since August, 1924, these machines have been operated two 8-hour shifts per day in entry driving. Fig. 3 shows one of these machines at the face waiting for the locomotive to spot an empty. Two men compose the operating crew: the other two shown in the picture are the inside superintendent and the fireboss.

It has been found that a Joy machine of this type will load an average of 22 cars or 66 tons per 8-hour shift, in an entry 10 ft. wide. About 18 in. of top coal is left to protect the roof in all entries. The production of 66 tons means that the machine must be moved four or five times during each shift. In one instance one of these loaders advanced an entry 35 ft. in a single shift.

Fig. 6 shows one of the two Jeffrey pit car loaders that were installed in October, 1924. Three men make up the crew of this machine. Three men shovel coal from the face onto the conveyor, but a considerable portion of one man's time is required to trim and spot the cars. The tonnage loaded by this machine depends entirely on the energy and initiative of the crew, inasmuch as the coal must be moved onto it by hand. Contrasted with the Joy machine the operating expense of the Jeffrey is much less, but the labor cost is roughly 50 per cent more.

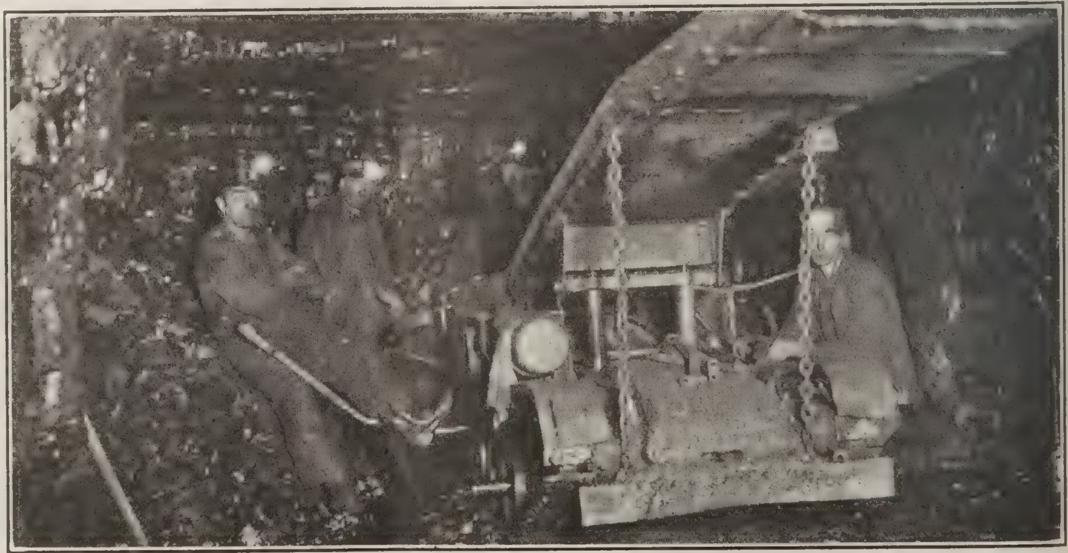
The fourth type of loader used in this mine is the Myers-Whaley. One of these machines was put to work in December, 1924. When the photograph, Fig. 5, was made the machine was working at a narrow point in a room where it crossed under a railroad. Rooms where this machine is regularly employed are 30 ft. wide and are driven 250 ft. long. Such places are double-tracked to facilitate the handling of cars. The full thickness of bed is taken in the rooms, no top coal being left. One cut 6½ ft. deep yields about 60 tons. Two men make up the machine crew. At present only one locomotive tends the loader, which limits its average production to 80 tons per shift. It is estimated that if two locomotives tended the machine, other conditions remaining the same, production could be increased to approximately 140 tons per shift. The conditions under which this Myers-Whaley loading machine is operating are experimental, and its present performance is not truly indicative of its capacity under more favorable circumstances.

One disadvantage of mechanical loading is the decreased efficiency of the mine cars, which results from the smaller loads carried. It has been found at the King mine that cars which, with hand loading,

FIG. 3

**Driving Entry**

This Joy type 4BU machine loads 66 tons per shift in a 10-ft. entry. Two men operate the loader. The other two in the picture are the inside superintendent and the fire boss. In this picture the machine is stopped and the crew waiting for the locomotive to spot another empty. Such delays limit the production but are inevitable in narrow work where the mine cars are brought to the face.



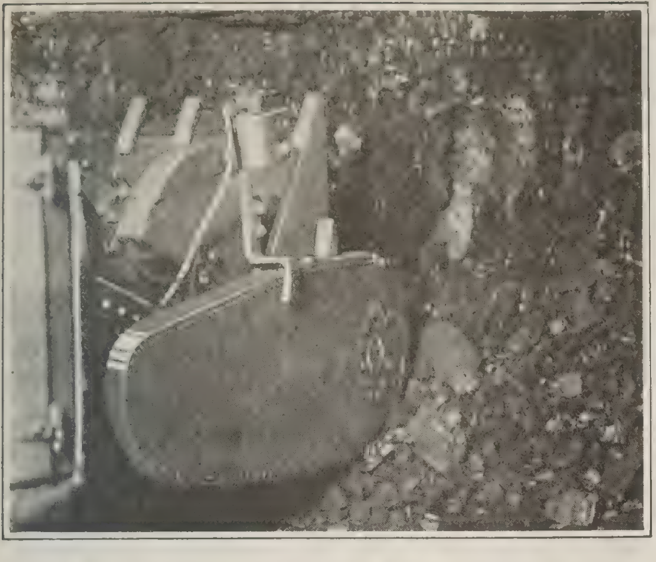


Fig. 5—"Business End" of the Myers-Whaley Loader

This machine is operating in 30-ft., double-tracked rooms. Here all of the 8-ft. bed is taken out. This loader is designed as a high capacity machine but on account of the experimental conditions and because but one locomotive is available for handling its output, the production averages only about 80 tons per shift.

averaged 4½ tons are averaging only about 3 tons when machine loaded. The effect of this decreased loading of the mine car is offset to some extent by the decrease in the length of time that each car remains at the face.

Apparently the officials of the Princeton Mining Co. are making the best of the present period of light demand for coal, to develop territory and to ascertain definitely what type of loading machine and method of mining are best suited to the local conditions encountered. When the time comes for building a permanent tipple and standardizing on loading methods they will have available a wealth of facts for their guidance.

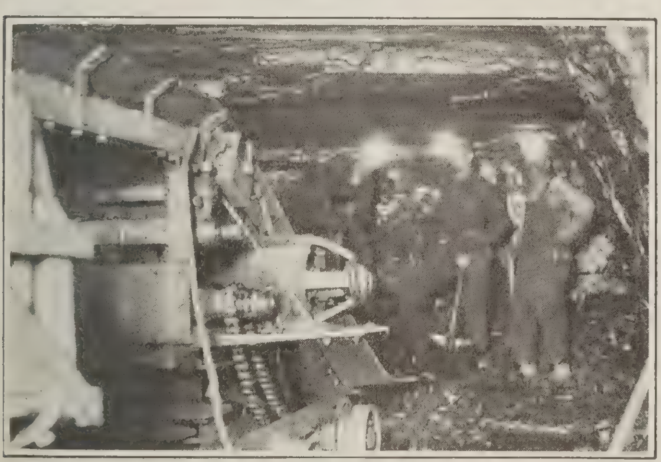


Fig. 6—Jeffrey Pit-Car Loader in Use

The coal averages 8 ft. in thickness and has no parting. Eighteen inches to 2 ft. of top coal is left in the entries to protect the roof. Three men make up the crew of this machine. Ordinarily two of them load coal onto the conveyor while one trims the car.

## Nebraska Has a Producing Coal Mine

More than thirty years ago it was known that Richardson County in the extreme southeastern corner of Nebraska, had some coal deposits, but little attention was paid to the deposit. Twenty-eight years ago a man named Cutler opened a mine near Rulo, Neb., but gave up the project when water began to seep in. Another man while digging a well accidently dug through a bed of coal.

About a year ago when C. Lewis inherited the Thomas G. Broker estate he opened up a mine, thus proving his farm to be underlaid with a strata of marketable coal. Since that time Mr. Lewis has incorporated a company and four miners have been working there since November, 1924. About 500 tons of coal have been taken out.

The mine is one and one-half miles from Kansas and one mile from the Missouri line. An analysis shows that the coal has 12 per cent of ash and 11,222 heat units to the pound.

## Rock Dust Now Used in 62 Pennsylvania Mines

The rock-dusting of coal mines to prevent explosions of dust or to limit their intensity has within the past year made a tremendous advance in the country at large and in Pennsylvania particularly. A year ago there were only four mines in Pennsylvania that had been subjected to treatment by this method; now there are sixty-two with others soon to be treated.

The Federal Bureau of Mines at least fifteen years ago made many practical tests of the method at the experimental mine at Bruceton, Pa., and demonstrated its value. A number of rather disastrous explosions in various sections of the country during the last three or four years has brought the subject again into prominence, and the Pennsylvania department of mines took the matter up with the district mine inspectors and began an intensive campaign among the operators. As a result great progress has been made in the last year.

The list of Pennsylvania mines now rock dusted follows:

| District | Company | Mine | County |
|---|---|---|---|
| 1 | Pittsburgh Coal Co. | Montour No. 10 | Allegheny |
| 1 | Bethlehem Mines Corp. | Mine No. 58 | Washington |
| 1 | National Mining Co. | National No. 4 | Washington |
| 1 | Ontario Gas Coal Co. | Ontario | Washington |
| 16 | Maryland Coal Co. | Maryland Shaft | Cambria |
| 13 | Springfield Coal Mining Co. | Springfield No. 1 | Cambria |
| 13 | Pennsylvania Coal & Coke Corp. | Ehrenfeld No. 3 | Cambria |
| 14 | Pittsburgh Plate Glass Co. | Creighton | Allegheny |
| 15 | Barnes Coal Co. | Lancashire No. 14 | Cambria |
| 15 | Pennsylvania Coal & Coke Corp. | Pennsylvania No. 18 | Cambria |
| 16 | H. C. Frick Coke Co. | Palmer | Fayette |
| 16 | Republic Iron & Steel Co. | Republic | Fayette |
| 6 | Hecla Coal & Coke Co. | Isabella Nos. 1 and 2 | Fayette |
| 16 | Eastern Coke Co. | Tower Hill No. 1 | Fayette |
| 16 | Tower Hill Connellsville Coke Co. | Tower Hill No. 2 | Fayette |
| 16 | Thompson Connellsville Coke Co. | Thompson No. 2 | Fayette |
| 16 | Orient Coal & Coke Co. | Orient | Fayette |
| 17 | Pittsburgh Terminal Coal Corp. | Pittsburgh Terminal Nos. 3-4-8 | Allegheny |
| 17 | Pittsburgh Coal Co. | Montour No. 4 | Washington |
| 19 | Westmoreland Coal Co. | Criterion | Westmoreland |
| 19 | Westmoreland Coal Co. | Adams | Westmoreland |
| 19 | Westmoreland Coal Co. | Biddle | Westmoreland |
| 19 | Westmoreland Coal Co. | McCullough | Westmoreland |
| 19 | Westmoreland Coal Co. | Export Nos. 1 and 2 | Westmoreland |
| 19 | Ocean Coal Co. | Ocean Nos. 1 and 2 | Westmoreland |
| 19 | Hillman Coal & Coke Co. | Edna Nos. 1 and 2 | Westmoreland |
| 19 | Keystone Coal & Coke Co. | Keystone Shaft | Westmoreland |
| 21 | Vesta Coal Co. | Nos. 4 and 5 | Washington |
| 21 | Crucible Fuel Co. | Crucible | Greene |
| 21 | Pickands Mather & Co. | Mather Collieries Nos. 1 and 2 | Greene |
| 22 | Pittsburgh Coal Co. | Banning No. 1 | Fayette |
| 22 | Pittsburgh Coal Co. | Forest Hill | Allegheny |
| 22 | Pittsburgh Coal Co. | Ocean No. 5 | Allegheny |
| 22 | Pittsburgh Coal Co. | Ocean No. 2 | Westmoreland |
| 22 | Pittsburgh Coal Co. | Gallatin | Allegheny |
| 23 | Buckeye Coal Co. | Nemacolin | Greene |
| 23 | H. C. Frick Coke Co. | Lambert | Fayette |
| 26 | Lincoln Gas Coal Co. | Lincoln No. 1 | Washington |
| 26 | Pittsburgh Terminal Coal Corp. | No. 9 | Washington |
| 26 | National Mining Co. | No. 1 | Allegheny |
| 26 | National Mining Co. | No. 2 | Washington |
| 26 | National Mining Co. | No. 3 | Washington |
| 27 | Pittsburgh Coal Co. | Somers No. 4 | Westmoreland |
| 27 | Pittsburgh Coal Co. | Arnold No. 2 | Fayette |
| 29 | Allegheny Pittsburgh Coal Co. | Springdale | Allegheny |
| 29 | Consumers Mining Co. | Harmar | Allegheny |
| 29 | Hillman Coal & Coke Co. | Oakmont No. 1 | Allegheny |
| 29 | Inland Collieries Co. | Indianola No. 1 | Allegheny |
| 29 | Republic Iron & Steel Co. | Bessemer No. 2 | Allegheny |
| 30 | Penelec Coal Corp. | Penelec No. 5 | Indiana |
| 30 | Bethlehem Mines Corp. | No. 78 | Indiana |
| 7 | Pittsburgh Coal Co. | Mansfield | Allegheny |
| 7 | Langeloth Coal Co. | Langeloth | Washington |
| 7 | Pittsburgh & Eastern Coal Co. | Pittsburgh & Eastern No. 2 | Washington |
| 7 | Carnegie Coal Co. | Atlas | Washington |

# Shaft Bottom for Mine Designed To Produce 13,000 Tons Daily

### Cars May Be Discharged at Either Shaft, Yet Be Returned to the Empty Track Facing in the Right Direction

TWO separate skip hoists, one in the main and one in the airshaft, a ladderway in the latter, a provision on the top of the airshaft skip to carry men and material and an air compartment that is driven only to a point above the coal and then so connected as to eliminate overcasts above the empty track are some of the unusual features of a shaft mine recently opened in West Virginia.

The dimensions of the main shaft, which contains two hoist compartments only, are 12x22 ft. in the clear. The airshaft is 13x33 ft. in the clear and contains two hoist compartments and one compartment for air. Both shafts are 630 ft. deep to the top of the coal, which is here from 6 to 9 ft. in thickness. The bed worked is what is known as the Beckley seam, which is a semi-bituminous smokeless fuel of excellent quality for bunkering, export, steam raising, smithing and domestic purposes.

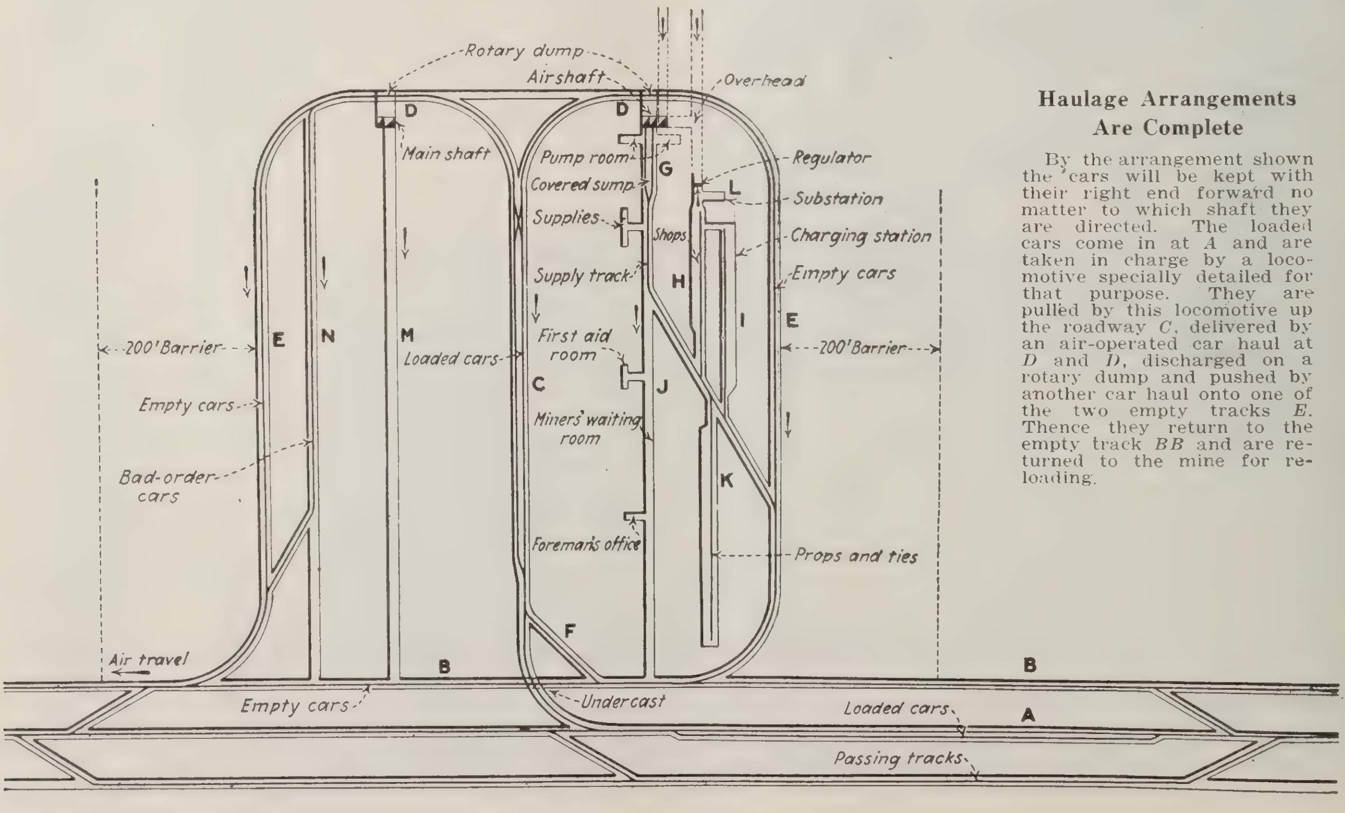
The shafts are 310 ft. apart and it is proposed to hoist coal from both by means of skips, rotary car dumps and solid-end cars of five tons capacity. The skips at the main shaft will hold 15 tons of coal each and those at the airshaft will have a capacity of five tons each. The hoists will be capable of making two and one-half trips per minute at the airshaft and one and one-half trips per minute at the main shaft.

With these figures in mind and assuming 6½ hours or 390 minutes of actual hoisting time per shift, it will be possible to handle 8,760 tons at the main shaft and 4,300 tons at the airshaft, after deducting 500 tons for a possible slate output. Both hoists combined will therefore be capable of delivering to the tipples 13,000 tons of coal in an 8-hour day. To produce this enormous tonnage it is apparent that the arrangements at the bottom for handling the mine cars must be unusually complete.

The mine engineers have given this matter careful consideration and have applied for letters patent on the plan shown in the accompanying illustration. The following considerations should be borne in mind: (1) Both shafts are to be used for hoisting coal. (2) Slate cars from any part of the mine must be directed to the airshaft dump. (3) All material will be taken in or out of the mine through the airshaft. For this purpose the skips installed in this shaft will be provided with an upper deck, or cage, upon which to carry men and materials. These cages will deliver their loads on the side opposite the dump. (4) All loads are to be readily available for dumping at either shaft. (5) Empty cars must be delivered to the empty storage tracks ready for the main-line locomotives. For this purpose it is proposed to keep a storage-battery unit in service on the bottom to handle loads from the double tracks to the cage room, and to deliver empty cars from the side wings to the empty tracks. This, however, will not be necessary until the tonnage becomes large.

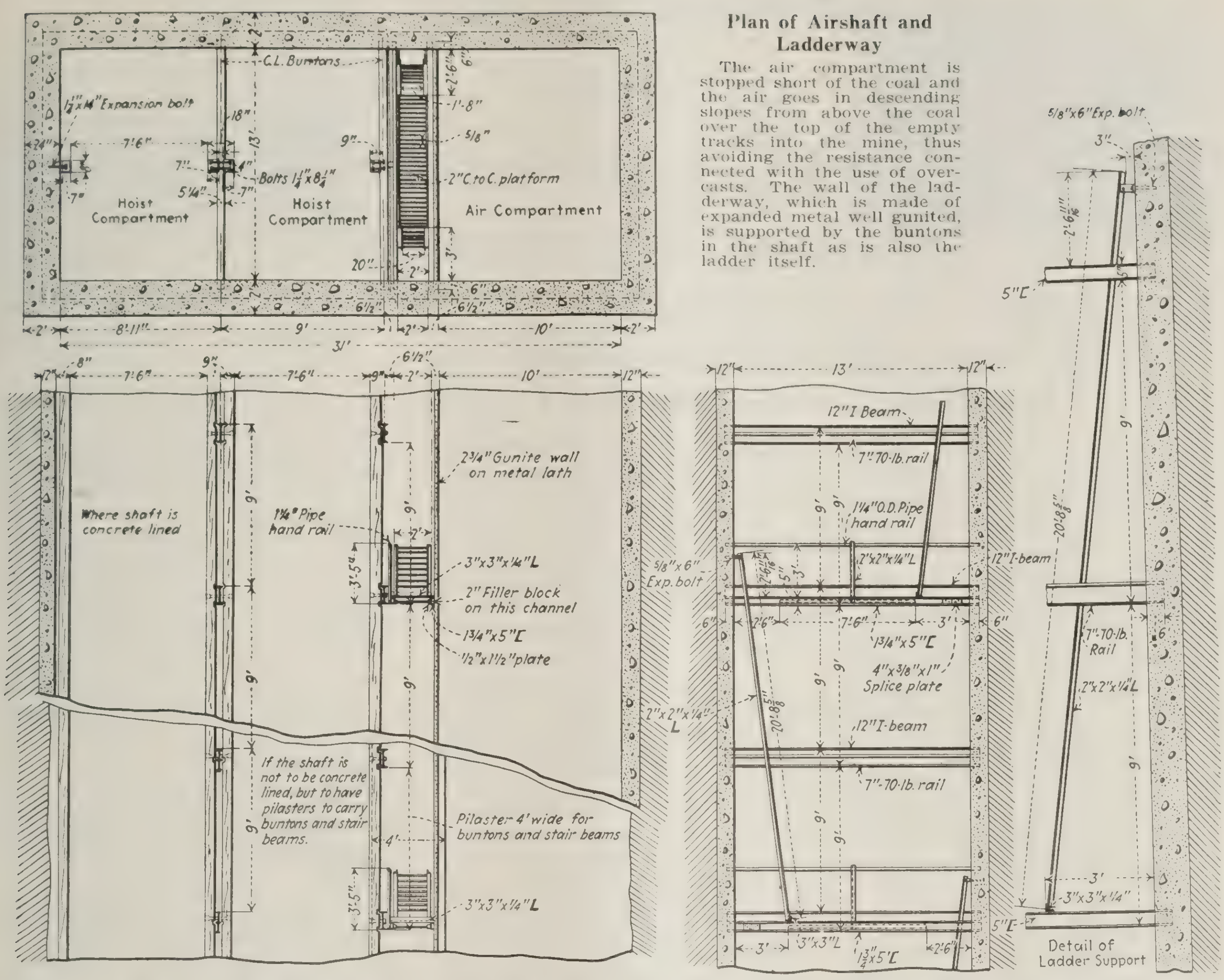
For a better understanding of the basic idea, the following explanation of the drawing will be of assistance: All loaded cars will be brought to the parting *A*. Here the main-line locomotives will cut off and pass through the designated crosscuts to the empty tracks *BB* and there pick up empties for the return trip. The inside, or bottom, locomotive will transfer the loads to the cage room *C*, which will be provided with double tracks and a diamond crossover. These tracks will be laid on a suitable down grade toward the shafts.

At *D* and *D* the cars will be picked up by air-operated car hauls that will pull them forward one car length to the two rotary dumps. Simultaneously similar ma-



**Haulage Arrangements Are Complete**

By the arrangement shown the cars will be kept with their right end forward no matter to which shaft they are directed. The loaded cars come in at *A* and are taken in charge by a locomotive specially detailed for that purpose. They are pulled by this locomotive up the roadway *C*, delivered by an air-operated car haul at *D* and *D*, discharged on a rotary dump and pushed by another car haul onto one of the two empty tracks *E*. Thence they return to the empty track *BB* and are returned to the mine for reloading.



## Plan of Airshaft and Ladderway

The air compartment is stopped short of the coal and the air goes in descending slopes from above the coal over the top of the empty tracks into the mine, thus avoiding the resistance connected with the use of overcasts. The wall of the ladderway, which is made of expanded metal well gunited, is supported by the buntons in the shaft as is also the ladder itself.

chines on the opposite sides of the dumps will push the empty cars forward an equal distance. This machinery will pull fifty loaded cars on the level and will push an equal number of empties up a 2½-per cent grade.

Materials coming down the air shaft will be discharged on tracks *G*. For the purpose of handling men and materials the upper platform of the airshaft skips will be level with the material tracks when the skips are at rest on the bottom. The shops are located at *H* and a motor-charging station is at *I*. At *J* is a restroom for the men. This will be provided with suitable seats. The room *K* is for the storage of props and ties intended for inside use. A substation is located at *L*, 2,300 volts being carried into the mine to this point through an armored, pick-proof cable.

The air compartment of the airshaft will stop before reaching the coal. From its bottom tunnels will be driven through the rock on a down grade to the floor of the coal. This will make it unnecessary to place overcasts above the empty track.

An entry, *M*, is driven from the main shaft to the empty tracks *B*, in order to provide an extra outlet for air and dust. Sprays will be installed at this point as well as at the airshaft, for the purpose of keeping down the dust when coal is being dumped. In the space *N* bad-order cars will be stored until they can be repaired.

It should be noted that cars cannot be turned around either during or after discharge, but always come right end foremost no matter which route they take. It is this arrangement for which originality is claimed. End-dump and side-dump cars can be handled by this method.

No attempt has been made to show the arrangement of inside entries, as the details of the shaft bottom may be modified to suit local conditions of grades, roof and drainage. Neither has it been attempted to show crosscuts for ventilation. In this particular instance it is proposed, with the consent of the State Mining Department, to drive long entries at the bottom by the aid of electric blowers and flexoid tubing. In some states the mining laws require that crosscuts be driven at certain intervals. In such a case it would be necessary to modify the plan to the extent of introducing parallel headings at proper distances apart.

The locations of the pumprooms, of storage for supplies, of the first-aid room and the mine foreman's office are indicated on the plan.

In the airshaft between the air and hoist compartments a ladderway is placed. This is provided with platforms at 18-ft. intervals. A partition of gunite will separate the ladderway from the air compartment. This gunite will be applied to expanded-metal lath provided with a peculiar V-shaped construction. It will be reinforced with rods laid vertically in V-grooves.

It should be remembered that the ladders and platforms are not supported by this wall, but rest on steel buntons properly placed to carry them. To these the curtain wall itself is affixed. Details of the airshaft and ladderway are shown in Fig. 2.

# News Of the Industry

## Lewis Refuses Citizens' No-Strike Plea Saying Operators Must Meet His Terms or He Will Not Confer

A fifty-ninth-second peace campaign by the business men of the anthracite region this week appeared to have failed by Tuesday night in its effort to prevent a strike of the miners next Sunday night, Aug. 31. At a public conference in Hazleton, Pa., Tuesday with the newly-formed Anthracite Business Men's Committee of 16, President Lewis of the miners refused to arbitrate and declined with some hauteur to promise that there would be no suspension. He would agree to resume wage negotiations with the operators only if they promise to consider increasing wages and adopting the check-off. The committee had no hope of getting the operators into a meeting with miners on that basis. Lewis made Tuesday a good propaganda day however.

President Lewis, of the miners, had pointedly told the business men of the anthracite region to keep their hands off the situation when they first held a Wilkes-Barre assembly Aug. 20 to see what they could do to stave off the business collapse they feared for their towns during the impending strike. But they proceeded to form their Committee of 16 anyway. Lewis declared that nothing could avert a strike except surrender by the operators to the miners' demands for wage increases and the check-off. However, when John H. Uhl of Wilkes-Barre, chairman of the no-strike committee, called on him in Philadelphia Monday, Aug. 24, he agreed to take his aides to the Hazleton meeting the next day. But he demanded to know whether the Committee was against an increase in miners' pay. Mr. Uhl declined to commit himself, saying he could not speak for the whole Committee. The 16 was nonpartisan, he said.

### Prepare for Suspension

Swift preparations for the suspension proceeded day by day. Production is rushing. Prices however, are not skyrocketing. Retailers in the largest anthracite markets are warning their customers against panic. Thus the situation in the anthracite field took on a new interest.

Meantime, in New England, the conference of governors which was called by Governor Fuller of Massachusetts, constituted itself a permanent body to do what it can to protect New England against suffering due to a shortage of anthracite, and elected John Hays Hammond its chairman. It was the consensus that New England can get along without anthracite if the people only will accept certain kinds of soft coal as other states have done and the conference will at once begin a movement to educate New Englanders to buy and burn these substitute fuels.

### Two Governors Attend in Person

Governors Fuller of Massachusetts and Brewster of Maine attended the conference in person. John W. Storrs, New Hampshire State Fuel Administrator, represented Governor Winant, and Ernest L. Sprague, Secretary of State, represented Governor Pothier of Rhode Island. John D. Sherburne represented Governor Billings of Vermont and Edward W. Goss appeared for Governor Trumbull of Connecticut.

The Anthracite Operators' Conference at Philadelphia was almost silent through it all. Maj. W. W. Inglis, chairman of the operators' sub-scale committee which served at Atlantic City before the miners broke up wage negotiations, sent a communication to Governor Fuller at Boston, reiterating the operators' entire willingness to have the anthracite dispute arbitrated. He declared once more that a suspension on Sept. 1 or on any other date "will be indefensible."

### *Hammond Chuckles at Strike Talk*

John Hays Hammond doesn't think much of the seriousness of today's strike talk because both operators and miners stand to lose and they both know it. "Two years ago," he said after the Boston conference of New England governors last week, "I told John Lewis, that I would defy him to call an anthracite strike. I said: 'Mr. Lewis, you are an intelligent man. You can call a strike but if you win you lose because you will find there will be no anthracite market left.' I haven't the slightest apprehension as to a strike of union bituminous fields. Competition between union and non-union regions is too keen."

## Nobody Is Demanding that Washington Take a Hand

By Paul Wooton

Washington Correspondent of *Coal Age*

Evidence reaching Washington indicates that the public is taking it for granted that federal intervention in the anthracite controversy is very unlikely.

When emergencies in coal have arisen before, New England has been ready to hurry delegations to Washington to demand preferential treatment, embargoes on exports or what not. It evidently has been so apparent that the federal government would keep hands off on this occasion that no single appeal has been sent to Washington and a determined campaign to help themselves has been initiated by the New England states.

Reports from other sections of the country reveal that the public is thoroughly apathetic. There is no sign that the rupture of the anthracite negotiations has aroused any anxiety or even interest. Comparatively few communications on coal from the public are reaching federal officials and there is no sign whatever of any public demand for federal activity in connection with the prospective strike.

Observers in Washington are sitting back wondering what John L. Lewis will do next. It is his move and it is being awaited with keen attention. Whether or not Mr. Lewis will attempt to make good his veiled threat to call out his bituminous men naturally is the feature of the situation on which greatest interest is focused. It is hard to understand how he could disrupt the operations of the mine owners who have faithfully met the scale, but Mr. Lewis is subject to an occasional unreasonable lapse. This adds to the uncertainty and, incidentally, to the interest of the situation. Some think the leader of the Mine Workers is getting desperate and may act on impulse.

Judging by what Mr. Lewis writes in his new book: *"The Miners' Fight for American Standards,"* he is entirely capable of calling out the bituminous miners Sept. 1. He fails to grasp the relationship between the high union scale and the highly successful competition of non-union shippers. There is not a hint of the principle long recognized by other unions, notably the clothing workers: that wages cannot exceed the ability of an industry to pay and that the union employer must be kept in business at all cost. The book holds that it is the union's business only to see that the employer pays the scale as long as he operates at all.

## Drainage Decision Makes Operation of Mines Hard In Fayette County Field

Litigation arising at Uniontown, Pa., which will have a direct bearing upon coal mining operations all over the United States as well as upon water companies has been decided in the local and state supreme courts of Pennsylvania against the coal companies. As a result coal mining operations in the Indian Creek valley, Fayette County, are virtually sealed and bottled up for the time being, at least. They represent an investment of upwards of $5,000,000.

The plaintiffs are the Pennsylvania R.R. Co., which maintains reservoirs to provide water for the railroad's engines, the Mountain Water Supply Co., the Dunbar Water Co. and the Westmoreland Water Co., serving domestic consumers in Fayette and Westmoreland Counties, and being affiliated more or less with the railroad company. The defendants in the case are a score or more of coal companies and individuals operating coal companies. The largest of these coal companies are the Melcroft, the Sagamore and the Indian Creek Coal and Coke Co.'s.

The water companies instituted litigation in the Fayette County courts some six years ago to restrain the coal companies from discharging mine waste into Indian Creek at points where this contamination would be carried into the reservoirs of the plaintiffs. The local courts about a year and a half ago found in favor of the mining companies. The state supreme court, on appeal, reversed the local courts and gave the mining companies six months in which to comply with the court's decree to cease the pollution of the stream. That six months' period has expired. The mining companies appealed to the local courts at Uniontown for a further extension of time and a decision last week held that the local courts were without authority to interfere with the findings of the supreme court and the appeal was denied. The effect of this decision is to force the suspension of mining operations on the part of the defendant coal interests.

### Try Many Remedies

The coal companies explained in detail a long series of engineering and scientific investigations in an effort to dispose of the mine waste. Chemical treatment of the discharge was discarded. Surface drainage was also held not feasible. Boring of deep wells it was found would not answer the purpose.

The engineers recommended the construction of a long, deep, underground tunnel through a lower coal seam. Into this tunnel manholes would be bored from the higher seams so that the waste would drop into the conduit. Waste from mines on the opposite side of the stream to the conduit would be piped into the tunnel. The local courts did not act upon the suggestion, however, holding that the supreme court decree giving six months in which actually to eliminate the drainage was not subject to change on the part of the lower courts. Further action on the part of the coal companies has not been decided upon.

This litigation will establish a legal precedent which may be the basis of much similar litigation all over the country and of new legislation in state assemblies and in Congress.

### Held to Precedents

The local court in its original opinion which found in favor of the coal companies held to the previous legal precedents in similar proceedings that, broadly speaking, water had the right to flow to its natural levels by the forces of nature and gravitation. The state supreme court disregarded these precedents and held for the water companies. Being an entirely intra-state litigation and not involving interstate commerce, the U. S. Supreme Court held that the decision of the state supreme court was not subject to review.

The effect of the state supreme court decision is to deny the coal companies any rights whatever in the streams. Its effect further would seem to be that every industrial concern whose operation involves waste discharge of a contaminating nature into streams of a public character or quasi-public character, have no rights whatsoever in those streams.

## *British Mine Chief Sees Revolution Ahead*

An English coal strike would have meant a revolution, A. J. Cook, secretary of the Miners' Federation, told an audience at Pontypridd, Wales, Aug. 17. Encouraged by the success of the coal miners in maintaining the present wage scale for at least another nine months, Cook declared a new era had been established, and that the words of Karl Marx about the workers of the world having nothing to lose but their chains and a world to gain, has been translated into deeds.

"Revolution will come," Cook continued. "I want a revolution that will have a disciplined army behind it—a revolution that will not only have discipline but one organized with an objective ahead of it, a revolution understanding its goal, a revolution where the mentality of the people will be free from the terrible curses of criticism and apathy."

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Minerals resources reports which heretofore have been written by geologists of the U. S. Geological Survey, in the future will be written in the division of mineral technology of the Bureau of Mines. This division is to become the clearing house of the bureau for economics and scientific reports which are to be used in conjunction with the statistics of the Minerals Resources division. Some of the annual chapters will be written in the division of mineral resources, as F. J. Katz, F. G. Tryon, J. M. Hill and Victor Heikes are geologists as well as statisticians. The research work on the non-metallics will continue to form a part of the work of the technological division.

## Central Pennsylvania is Ready to Gain Business If Anthracite Men Quit

Talk of a strike in the anthracite field has added a little stimulus to the mining of coal in central Pennsylvania and a few of the mines which have been idle all year are working part time. Central Pennsylvania can, according to Secretary Charles O'Neill of the Central Pennsylvania Coal Producers' Association, produce 1,750,000 tons of prepared sizes of coal each month that can be used as a substitute for anthracite. As a matter of fact, adjustments can be made at many of the central Pennsylvania mines that will materially increase this quantity. This would be low-volatile coal, which is desirable for domestic fuel. Some of it is practically smokeless.

Gains in production in central Pennsylvania up to the present time have been slight, however. During the week ending Aug. 15, the loadings were 13,572 cars as compared with 13,429 cars for the week ending Aug. 8. The loadings for the first two weeks of August totaled 28,229 cars, compared with 24,135 cars the first two weeks of July. All gains are being made in mines working under the 1917 scale. Prices remain the same.

In anticipation of the largely increased volume of coal transportation out of the central Pennsylvania region due to the possibility of a strike in the anthracite field on Sept. 1, the Pennsylvania R.R. has put a large force of car repairmen to work in the Hollidaysburg yard repairing coal cars.

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## Water Power Development Is Rapid in the East

The Department of the Interior, through the Geological Survey, has just released a report on the developed water power of the United States in 1925. The total 1925 capacity of water wheels installed in plants of 100 hp. or more, was about 10,038,000 hp., an increase of about 951,000 hp., or nearly 10½ per cent, over the total capacity of water-power plants in 1924 (9,087,000 hp.). Of this increase 99 per cent was in electric public-utility plants and 1 per cent in manufacturing plants.

The five leading water-power states in order of their rank and the developed water power for each are as follows: New York, 1,713,551; California, 1,531,480; Washington, 560,693; North Carolina, 534,600; Maine, 476,627. North Carolina has moved from fifth place in 1924 to fourth place in 1925. Based on present practice at fully developed water-power sites the undeveloped water power in the five leading states will permit of the installation of the following additional capacities in water wheels, expressed in horsepower: New York, 4,734,000; California, 7,145,000; Washington, 9,672,000; North Carolina, 526,000; Maine, 920,000.

The report indicates that water power development in the middle Atlantic, south Atlantic, and east-south Central states is progressing more rapidly than in any other sections of the country. New England's relative standing continues to decrease.

# First Two Pittsburgh Mines Open On 1917 Wages—District Union Is Forming—Ohio Reopens Two More

A movement to reopen union mines on a union basis but at 1917 wages is making a start in the Pittsburgh and the Ohio fields. The Pittsburgh Coal Co. on Aug. 20 opened Banning No. 2, which is 43 miles from Pittsburgh, and on Monday, Aug. 24, the Boggs mine of the Montour & Lake Erie Coal Co. near Imperial, Pa., started operations. In the Pomeroy Bend field in Ohio two more 1917-basis mines on Aug. 20 were added to the list of those operating.

In every case, the mines were reopened upon petition of the men. Thus the operators take the position that they are not breaking a labor contract. Instead, the contract based on the high-wage Jacksonville agreement is changed by agreement between both parties to it. The reopening of the Pittsburgh field mines represents the first fruits of the Pittsburgh Chamber of Commerce effort to induce union miners of that region to break away from the United Mine Workers, form an independent district union and go to work at 1917 wages. E. S. McCullough, a former international vice-president of the United Mine Workers is directing the campaign.

Almost simultaneously with the opening of Banning No. 2 mine of the Pittsburgh Coal Co., officials of the United Mine Workers at Pittsburgh called out on strike 70 men engaged in construction work at the Warden tipple of the same company, near McKeesport, Pa. The men were not digging coal. They were at work inside, cleaning up in connection with the building of the new tipple which is part of a $600,000 improvement project at the mine. It had been the policy of the company to give jobs in the repair project to many of its former employees, members of the United Mine Workers, in order to keep them from idleness.

The Banning No. 2 mine is at Whitsett Junction, on the Youghiogheny branch of the Pittsburgh & Lake Erie R.R., 43 miles from Pittsburgh. It normally employs 400 men. The first day operations were begun, 36 men were put to work and on Friday this was increased to 52.

The United Mine Workers had 100 pickets on hand the first day, but quietness was general. On the second day but 88 were on picket duty. The company put the men in the mine at work cleaning up and it is expected coal will be shipped soon. The coal from this mine is largely used for by-product purposes.

The Pittsburgh Coal Co. now has 39 other mines in the Pittsburgh district idle. Officials of the company were unable to predict when another mine would be opened, or where, declaring that it depended entirely upon the desires of the former employees of the company.

The petition signed by each of the men at Banning No. 2 reads:

> "I, being an employee of the Pittsburgh Coal Co. at Banning No. 2 mine, realizing that it is no longer possible to operate the mines under the Jacksonville scale, request that the company afford me employment at the November, 1917, wages.
>
> "It is my hope that the coal company will at once make every effort to procure sufficient business that will make possible my request, which I agree to abide by. It is understood that when a sufficient number of men at this mine have signed similar petitions so that work may be resumed, an opportunity will be afforded the representatives of the local union which we may form, to meet with the officials of the company for the purpose of negotiating wage and working conditions that shall govern."

Operating conditions in the Pittsburgh field under the Jacksonville scale appear to be as difficult as anywhere in the country. Mines reporting to the Pittsburgh Coal Producers' Association for the week ended Aug. 15 showed a total production of 58,057 tons, or 9.2 per cent of capacity. This compared with 9.7 per cent in the previous week and 28.6 per cent in the same period last year. Thirteen out of 80 mines were reported in operation.

The two mines that were opened on the 1917 basis in the Pomeroy Bend field Aug. 20, are the Pittsburgh Coal Co., Mine No. 17, where the tipple and power house were burned on June 17, and the Blackstone mine at Rutland, O., formerly the old Maynard Mine No. 4, where the tipple was destroyed recently. The first reopened with 75 men and the second with 80 men.

"We have all of the men we want to operate the mines," said an official of one of the companies. "And they are not imported from other fields. Neither are they farmers. They are men who formerly belonged to the union and who are willing to come back to work on the 1917 scale. We intend to operate on the 1917 scale and we will continue to operate. As fast as our tipples are burned we will reconstruct them and begin operations anew."

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## Union Trying to Organize Logan County Now?

The presence of several important United Mine Workers organizers including Van A. Bittner in Logan County, long an open-shop mining region, has stirred up great discussion there. Mr. Bittner is said to have wired President Lewis: "Plans are working fine. Outlook very encouraging" and to have shown the telegram around rather promiscuously. Just what "plans are working fine" operators say they do not know; however, it is generally believed that organizers have been quietly at work for a long time in Logan among non-union men and that loyal unionists have now been planted in most mines. If an organization drive actually makes a strong start there, it will be the first union effort since the miners' armed march on Logan several years ago. The union this time, however, apparently will have discarded the gun for within-the-law methods.

## *"Liquid Coal" Makes a German Stew*

Industrial circles in Germany are agog over a persistent rumor that Professor Bergius, of the Badische Anilin and Soda Factory, has discovered a way to liquify coal and that this is the reason for the Badische purchase of the Hugo Stinnes Riebeck Montan Co. This was one of the property sales by German banks from the former Stinnes holdings which incensed friends of the Stinnes family who say the banks sold too cheaply. It is generally believed by technical men that the secret of turning solid carbons into liquids is now held by the Badische concern though the results of the most recent tests were not published. It has been proved that 1 lb. of liquid fuel can generate the same amount of heat as 3 or 4 lb. of solid. It is pointed out that fluids are easier and cleaner to handle than solids with the advantage of lesser weight when transported.

## June Railway Fuel Costs Lower than in May

Figures compiled by the bureau of coal economics of the National Coal Association, from the monthly reports of Class I railroads to the Interstate Commerce Commission, show that the cost of coal, including freight charges paid thereon, used by those railroads in locomotives in transportation train service during the month of June was slightly lower than in May. The averages per net ton for June are as follows: eastern district, $2.73; southern district, $2.19; western district, $3.04; the United States, $2.70. These averages represent a decrease from May of 6c. per ton in the eastern and southern districts, and a decrease of 3c. per net ton throughout the whole country. Comparison with similar figures for June, 1924, reveals a reduction in average cost of 36c. per ton in the eastern district; 41c. in the southern district; 21c. in the western district, and 32c. for the entire United States.

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## Twin Cities Want Illinois Coal by River

A conference is to be held in St. Paul, Minn. between Twin Cities business interests and representatives of the Illinois Coal Operators' Association with Brig.-Gen. T. Q. Ashburn, chief in the inland waterways transportation. The subject is the use of the Mississippi River for transporting southern Illinois coal to the Twin Cities by barge. The question of terminals is to be discussed. It is claimed that shipping coal by barge would cut the cost $2 a ton. If the plan is feasible, it will mean a restoration of a considerable tonnage to the all-rail mines which have been nearly eliminated by the revised freight rates from Franklin County to the Twin Cities.

# West Virginia Sees Indications of General Soft-Coal Strike—Panhandle War Seems Definitely Lost by Union

West Virginia is plainly getting ready for another and more general labor conflict. The state is shot through with reports of labor activity leading many observers to the belief that the international officers of the United Mine Workers expect to carry out their threat of a nation-wide soft-coal strike Sept. 1. The actual strike within the state—that of the Panhandle region where the union has failed—is overshadowed by other impending events. In the region, where the strike is still theoretically in effect, the output from non-union mines during the first half of last week was 4,457 cars and that from union mines, 716 cars.

The conference of soft-coal union leaders in the Bellevue-Stratford hotel in Philadelphia last week, when a general survey of the anthracite and bituminous coal fields was made, has been much discussed in West Virginia. Those reported to have attended the conference were: International President John L. Lewis, Van A. Bittner, of Fairmont; Capt. Percy Tetlow, of Charleston, President of District No. 17; John O'Leary, of Pittsburgh, Pa.; Andrew R. Watkins of Yorkville, O.; Edward Dobbins, of Belleville, Ill.; C. C. Webster, of Terre Haute, Ind.; and D. K. Watkins of Albia, Ia., international executive board members, and Attorney Thomas C. Townsend, of Charleston, chief legal representative of the union in West Virginia.

It is believed that the union has done much preliminary work in the non-union fields of southern West Virginia. With hundreds of coal miners leaving the Central Competitive Field and working and intermingling in the non-union fields, it is difficult to ascertain whether they are actually there to remain at work or have been planted there to lead strikes.

The situation in northern West Virginia, formerly the union stronghold, has developed some peculiar aspects. Many of the miners, returned to work on the 1917 wage scale say they are through with the union, but the concensus is that while the union is on the rocks now it is apt to have a quick recovery, if operators do not use judgment. A large number of coal miners returned to work because of the pressure of circumstances and the ideals of the unions are as precious to them as before.

### Union Agents Talk to Miners

One of the reasons that non-union operators believe that another strike is apt to develop is the persistent manner in which agents of the union try to penetrate non-union mine properties to talk to the miners. In some cases men supposed to be selling butter, produce, vegetables were found to have no supplies to offer.

Quiet reigns in the Panhandle section of northern West Virginia from last reports. Lee Hall of Columbus, president of the Ohio miners, arrived in Wheeling, Aug. 19, and made an inspection of the tent colonies in Brooke and Hancock Counties. In commenting on the Panhandle strike, Mr. Hall said: "We are all very well pleased with the progress that is being made and the manner in which the miners are sticking to their colors. The salvation of the mining industry depends on signing the Jacksonville agreement. We expect to win the strike in West Virginia."

For some time there have been rumors in the region about the proposed investigation by the United States Senate of alleged contract-breaking in northern West Virginia. It is understood that certain miners' leaders have written to members of the Senate on that point. The belief is spreading here that International President John L. Lewis hopes to point out alleged contract-breaking in northern West Virginia, if the government authorities become involved in anthracite arbitration. Unquestionably the union miners are retaining this as a trump card.

### Cut Wages of Officials

How certain coal companies in northern West Virginia can afford to pay the union scale while others claim they cannot and, accordingly, adopted an open-shop policy is a problem that has been widely discussed in the region recently. It is understood that one company working on a union basis has been able to continue by making a slight cut in officials' wages for a limited period. Charges have been openly made that coal companies are manipulating weights in their favor but no proof has been offered. There are non-union coal operators, however, who are free to admit that their operating costs are high and in a number of instances believe that union mines can almost operate as cheap as they can.

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## Mineral Resources Division Staff Is Chosen

In connection with the organization of the division of mineral resources and statistics of the Bureau of Mines, Department of Commerce, under the direction of F. J. Katz, engineer in charge, W. W. Adams has been designated as executive assistant to the engineer in charge. Mr. Katz, in addition to his general administrative duties, will supervise the collection of statistics relating to metals and nonmetals (except fuels). F. G. Tryon will be in charge of the coal and coke section. The petroleum and natural gas section will be under the direction of G. R. Hopkins; mine accidents will be under W. W. Adams; and foreign mineral reserves under B. L. Johnson. The Salt Lake City, Utah, field office will be conducted by V. C. Heikes; the Denver, Colo., office by C. W. Henderson; the San Francisco office by J. M. Hill; and the Joplin, Mo., office by J. P. Dunlop.

With the transfer of the division to the Bureau of Mines, effective July 1, the distribution of the annual volumes, "Mineral Resources of the United States," and of the various separate chapters of these volumes, comprising annual reports on the production and consumption of the different minerals, passed to the Bureau of Mines. This will include the separate chapters already published and still available for free distribution, as well as the chapters and volumes to be published in the future. Announcement of the issuance of these documents will hereafter be given in the postcard notices of new publications of the Bureau of Mines.

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## *Not Planning Strike Says Illinois Union Head*

The more or less loose talk about a general soft coal miners' strike Sept. 1 in sympathy with anthracite men who expect to walk out on that date gives the radical members of the United Mine Workers their opportunity. One of them, in Illinois—William McCreysal—made a speech before a labor organization in Chicago the other day declaring the union miners of Illinois were all ready to join in such a strike and that the state officials had met and arranged it all. This brought a prompt and decisive statement from Frank Farrington, president of the Illinois district. Farrington denied that Illinois union officials had done a thing toward planning a strike. And there you are.

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## Sunlight and Verona Coal Companies Merge

Announcement has been made of the sale of the entire capital stock of the Sunlight Coal Co., with headquarters at Indianapolis, Ind., to Joseph E. Hitt, of Chicago. The announcement marks the consummation of months of negotiation for the merging of the Sunlight Company and the Verona Coal Co., of Chicago, with their Illinois, Indiana and Kentucky strip and shaft mines. The new company will retain the name Sunlight Coal Co. Appraised values of the combined properties of the new corporation are in excess of $6,000,000. Daily capacity of mines operated by the company total approximately 7,500 tons.

The Indiana office of the new company has been transferred from Indianapolis to Boonville, Ind., where the old Sunlight company owned and operated extensive stripping properties. Mr. Hitt, who is one of the most prominent and successful operators of the middle-western field in addition to being president of the Southwest State Bank of Chicago and director of several other Chicago banks and manufacturing corporations, will be president of the new mining company. Thomas C. Mullins, who was general manager of the old Sunlight company, will become vice-president and general manager of the new company. Samuel Ashby, of Indianapolis, was president of the old company.

## Illinois Miners' Engineer Backs "Giant Power" Plan

The report of an engineer employed by the United Mine Workers was made public at Springfield, Ill., Aug. 24. It approves the "giant power plan" of President Frank Farrington, head of the Illinois union miners, as "essentially practicable from an engineering standpoint," and urges that the project "be pushed with energy and enthusiasm."

Revival of prosperity for the coal industry of Illinois, more and steadier work for miners, a 20 per cent increase in the output of the mines, a cure of the smoke nuisance and electricity for every hamlet and farm in Illinois are a few of the benefits to come, if "giant power" plants become a reality, the report reads.

Otto M. Rau, a consulting engineer of Philadelphia, Pa., with a long record of service, was the author of the report. He brings to his support Prof. S. W. Parr, of the University of Illinois, acknowledged as a high authority on coal. Prof. Parr calls the Farrington plan "a step in the right direction."

Last year President Farrington proposed his plan at the Peoria convention of the Illinois mine workers, and won permission to retain Mr. Rau. Scoffers among miners were eloquent. They demanded to know how a plan that would conserve coal, and get more use from it, could help them, whose livelihood depended not on conservation of Illinois coal, but on consumption.

Farrington's plan is as follows:

"1. Create a semi-public corporation in which District 12 (The Illinois Mine Workers), the operators, the consumers, and the state would be represented, so as to safeguard the interests of all these factions.

"2. To establish through this corporation one or more "giant power" plants on the Ohio and Mississippi Rivers for the manufacture of electricity through burning Illinois coal.

"3. To form an integrated network of major and minor power lines to make electricity available to every hamlet and farm house in the state.

"4. To treat coal at the 'giant power' station in order to save and to sell the valuable by-products now wasted.

### Economics and Engineering Involved

"There appear to be two factors involved in the present crisis in the Illinois coal industry," says Mr. Rau in his report, "one an economic and the other an engineering factor. First, coal is being delivered into Illinois from foreign fields at a price lower than that charged the consumer for Illinois coal. Second, Illinois coal can not be stored as effectively as bituminous coal from other fields. The creation of a 'giant power' industry in Illinois would eliminate both of these factors.

"Freight rates constitute a large part of the cost to the consumer of delivered coal. By developing a method for the pre-treatment or distillation of raw coal at the mines and burning the poorer grades in 'giant power' plants, distributing the power thus produced over high tension wires, as is contemplated in the Farrington plan, a permanent and steadily-increasing demand for large quantities is insured, the delivery of this power can be made at less cost than the present wasteful way of distributing raw coal and there is no problem of coal deterioration during transport or storage.

"In addition to stabilizing the demand for coal from Illinois mines, the introduction of approved methods of pretreating raw coal would enable your 'giant power' plant to offer to the big cities of the state a form of semi-anthracite coal that is practically smokeless. When it is considered that not less than 15,000,000 tons of anthracite from Pennsylvania is shipped annually into the area which could be supplied from Illinois mines, the importance of manufacturing semi-anthracite within the boundaries of your state can at once been seen.

"Furthermore, the establishment of 'giant power' plants would open up a hitherto untouched market for power in the southern portion of your state and be of untold benefit to the farmers in that section."

Mr. Rau says that of 237,181 farm families in Illinois only 4 per cent now have electric service and that this market alone would lend considerable basis for 'giant power.'

## *Herrin Strip Pit Is "Snowbirding"*

The nororious Herrin strip pit, where a mob led by union men slaughtered 21 non-unionists in 1922, once more bobs into print. This time its cause is plead before the Chicago Federation of Labor by one William McCrysal. In his reported speech he urged all union men of Chicago to band together to buy coal from the Mammoth Coal Co. this winter at $2.25 a ton. The mine more than a year ago was bought by the Mammoth Coal Co., said to be financed by the Illinois district of United Mine Workers. At once a huge damage suit by the former owners against the union organization was withdrawn. And now Illinois is treated to the spectacle of a union-owned mine indulging in "snowbird" tactics to the detriment of other mines where union men are employed.

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Coal tonnage from the mines of Utah having direct railroad service is reported as follows by the district office of the United States bureau of mines, in co-operation with the geological survey, for June and the first six months of 1925, with comparisons with former years:

| Year | June | First 6 months |
|---|---|---|
| 1925 | 280,830 | 2,019,046 |
| 1924 | 261,975 | 1,946,766 |
| 1923 | 333,230 | 1,114,128 |
| 1922 | 337,629 | 2,100,251 |
| 1921 | 220,941 | 1,729,456 |
| 1920 | 531,600 | 2,863,450 |

## Strikers Wives Can Pray at Oklahoma Mines Now

Prayer meetings by striking miners in the Henryetta (Okla.) field were resumed Aug. 20 following a decision by the state criminal court of appeals that religious meetings were a legal form of picketing. Coal operators and a sheriff had held that prayer was masking union terrorism. Union miners and sympathizers opposing the operation of mines under less than the 1924 wage scale, formed a parade at Schulter and marched to the B. & A. mine, where prayers were offered and a resolution was adopted thanking the court, for its decision. The praying is done mainly by strikers wives while the men themselves in as large numbers as possible take up their position a stone's throw distant. While union leaders counsel peaceful picketing, state troops are still stationed there to prevent any disorder.

The reopening of Oklahoma mines on the 1917 wage scale brings more plants into operation every week. The most recent opening was at the McGinnis Coal Co.'s mine near Henryetta. The McAlester Fuel Co. on Aug. 10 opened its Bernice mine near Russellville, Ark., on a 1917 basis.

## Railroad Equipment Is in Excellent Condition

Railroads are in excellent condition to handle traffic of all sorts including coal in case of any sort of coal production difficulty this fall. Fewer locomotives were in need of repair on Aug. 1 this year than at any time since Jan. 1, 1924, according to reports filed by the railroads with the Car Service Division of the American Railway Association. The number in need of repair on that date was 10,658 or 16.7 per cent of the number on line. This was a decrease of 566 under the number in need of repair on July 15, when there were 11,224 or 17.5 per cent. It also was a decrease of 447 compared with the number in need of repair on Aug. 1 last year and a decrease of 897 compared with the number in need of repair on Aug. 1, 1923. Serviceable locomotives in storage on Aug. 1 totaled 6,313, a decrease of 218 compared with the number of such locomotives on July 15.

Freight cars in need of repair on Aug. 1 totaled 197,281 or 8.4 per cent of the number on line. This was a decrease of 2,391 under the number reported on July 15. Freight cars in need of heavy repair on Aug. 1 totaled 153,674 or 6.6 per cent, a decrease of 657 compared with July 15. Freight cars in need of light repair totaled 43,607 or 1.8 per cent. a decrease of 1,734 compared with July 15.

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Disturbances which had marked the wildcat strike of coal miners at Zeigler, Ill., last week, resulting in the death of one man, broke out afresh Aug. 18 when gangs stopped the few miners who wanted to go back to work in the Bell & Zoller mines. President Farrington, of the Illinois district of United Mine Workers, says the outbreak is mere sovietism and that he is going to compel the strikers to fulfill their contract or get out of the union.

# Practical Pointers For Electrical And Mechanical Men

## Home-Made Lathe Now Does Shop Work Which Tied Up Expensive Machine

About many mine shops the wood lathe is a machine that is conspicuous by its absence. Nevertheless, most such shops have enough work that can and should be done in a machine of this type to fully warrant its installation. It, doubtless, is reasoned, "why buy a wood lathe when the work can be done in an engine lathe?" Such reasoning takes no account of the time lost in turning wood by the more expensive machine that might be employed in work on metal.

At the No. 4 shops of the Kingston Coal Co., Kingston, Pa., some years ago the need for a wood lathe was keenly felt. Accordingly the machine shown in the accompanying illustrations was built. The bed of this lathe is made up of channel irons mitred together at the corners and fastened by means of angles and rivets. The headstock is of cast brass and was made in the company foundry, as was also the tail stock. The cone pulleys were originally part of an engine governor, but were salvaged from the scrap heap and put to use on this lathe. The live spindle was turned up in the shop.

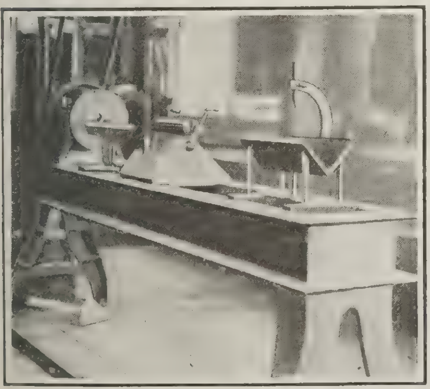


**Fig. 1—Front View of Lathe**

The bed of this machine is built up of pieces of channel iron mitred together at the corners and fastened by means of angle irons. Head and tailstocks are of brass cast in the shop foundry. The cone pulleys and lathe legs were salvaged from the scrap heap.

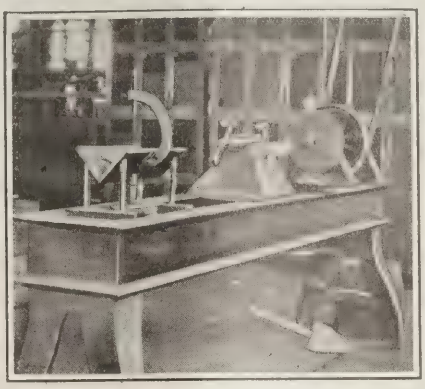


**Fig. 2—Rear View of Lathe**

This shows the device employed for holding track rollers during the boring process. The V-trough together with the C-shaped arm carrying the holding spike can be raised or lowered until the roller is in proper position. The whole device can then be fed forward against the bit or drill, carried in the headstock, by means of the tailstock spindle. After the gudgeon hole has been bored the tail spindle is backed off and the roller and its support withdrawn by hand.

Faceplates for both front and rear ends of the headstock were made from flanges. Work that will swing over the ways is, of course, turned on the front or smaller faceplate while larger work is turned on the rear plate overhanging the lathe completely, the tool rest being then supported from the floor. The regular tool rest consists of three pieces of strap iron bent and formed to proper shape and all bound together in the desired position by means of one bolt fitted with a hand-wheel nut.

One of the chief uses to which this lathe is put is the making of track rollers. At this mine props and other timbers are cut to approximate length on the surface. In this process the small ends of the sticks are cut off. These vary in length from a few inches to 4 or 5 ft. They are utilized in making slope rollers.

After they have been turned to uniform diameter on this lathe their ends are bored or drilled for the insertion of the gudgeons upon which they revolve under the action of the cable. To facilitate boring the roller ends, a special device has been made. This consists of an underframe that can be slid readily along the lathe bed, a V-trough that receives and centers the roller but which can be raised and lowered by means of a screw, and a device that keeps the roller from turning consisting of a movable spike working up or down through the end of a C-shaped arm.

When it is desired to bore gudgeon holes this device is inserted between the head and tailstocks of the lathe in place of the tool rest. A roller is then laid in the V-trough, the holding spike brought firmly against it and clamped in position by means of a set screw. The trough and roller may then be raised or lowered to the proper position, a bit or drill inserted in the live spindle and the roller fed against it by means of the tailstock center screw. When the hole has been drilled to the desired depth the tailstock screw is backed off and the roller withdrawn by hand. It can then be turned end for end and the process repeated.

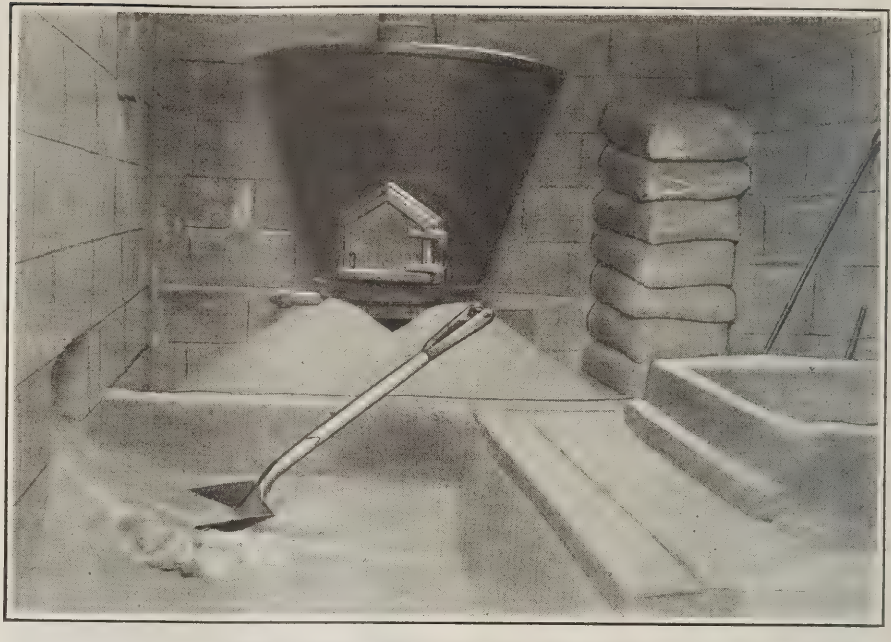
By the use of this lathe track rollers, patterns for castings and many other pieces of wood work can be turned up quickly and with all necessary accuracy. Use of this machine thus obtains results that are entirely satisfactory and a larger engine lathe is released from doing work to which it is not adapted.

## Sand Is Dropped Through Borehole to Mine

The scheme of dropping sand for haulage service through a cased borehole from the drying plant on the surface to a storage bin on a haulway underground is being looked upon with greater and greater favor. Its chief merit lies in the elimination of shoveling of the sand from the dryer into a sand car and the inconvenience and delay in transporting the sand by this means. Its application is limited to slope and snaft mines, of course, where a sand-drying plant may be erected adjacent to other buildings for convenience of attendance and yet be directly over a haulway frequented by all tram locomotives.

At the Lewis slope mine of the Hudson Coal Co., near Clarksburg, W. Va., is provided a useful arrangement for hauling and drying its sand. In the illustration is shown the drying plant which is constructed of concrete blocks. A storage bin, having a capacity equivalent to one railroad car, is separated from the drying compartment proper by a reinforced wall. In this wall at the floor line is a hole through which the sand is shoveled from the bin to the stove. Near the stove is a concrete well which converges downward to a 3-in. borehole casing. On the collar of this well, which extends about 10 in. above the floor, rests a screen with sides of wood. The screen may be lifted and overturned to dump over-mesh particles.

The borehole pierces the roof of a concrete storage bin in the mine, near the main bottom.

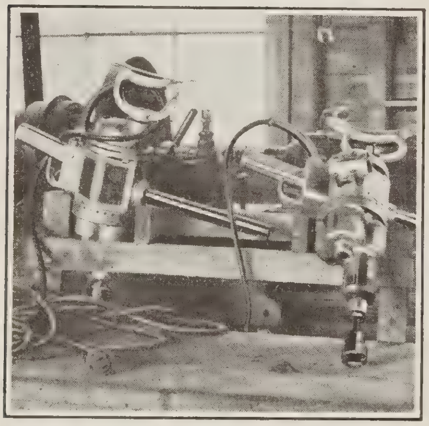


**Sand Drying Plant and Top of Borehole**

Storage is behind the wall at the left. Sand is shoveled from the inlet at the floor line into the stove. Dried sand is then dumped through the wooden-frame screen at the right into a hopper converging to a 3-in. cased borehole leading to a bin in the mine workings below.

## Power Tools Make Shop More Efficient

To assist in the repair and rebuilding of mine cars at the Detmold mine of the Maryland Coal Co., power tools are provided. The car shop is equipped with a power saw, a compressed-air chisel hammer and a combination portable power drill, socket wrench and screwdriver that has proved to be of material aid to the repair men. Any one of these three tools fits in the chuck of an electrically-driven machine, two of which are displayed in the accompanying illustration.



**Each of These Does Many Jobs**

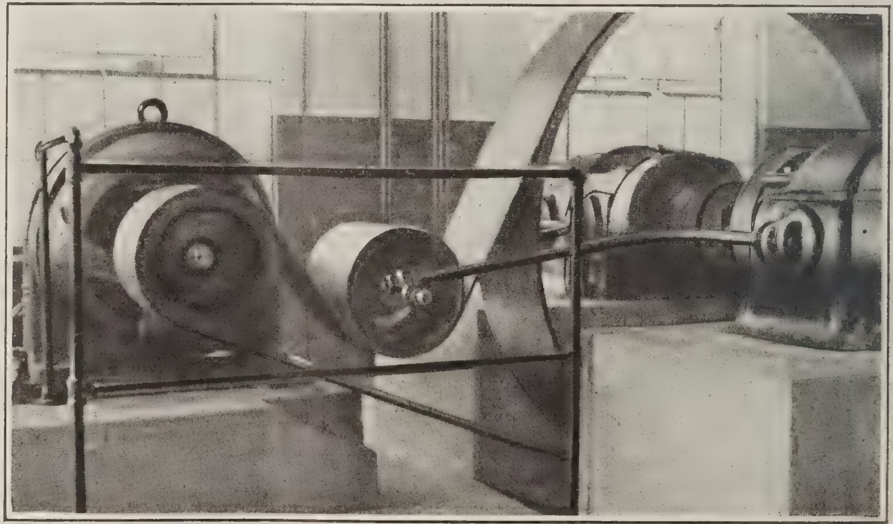
The Maryland Coal Co. does not believe in expecting men to do what machines will do more safely and quickly. Consequently it has installed two machines in the chucks of which may be inserted a drill, a socket wrench or a screwdriver.

ELKINS READ,<br>
General Supt.,<br>
Maryland Coal Co., Lonaconing, Md.

## Pulley, Well Adjusted, Runs Smoothly

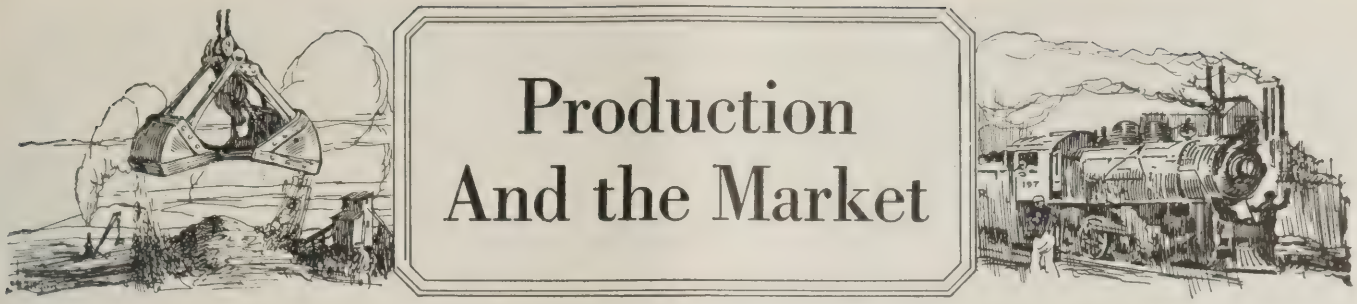
Throughout the mining field are many different types of speed reducers, but rarely do they operate as smoothly or can they be adjusted as easily as one at the Clifford shaft of the Hillside Coal & Iron Co., near Forest City, Pa. Usually each type has some particular application to which it is best suited. The greater use of equipment in modern mining methods has introduced machines of various speeds and such a condition has made necessary many belt drives. Unfortunately, it is not always that these reducers are properly maintained and adjusted.

At the Clifford shaft, an air compressor, which supplies air for drills and a hoist inside the mines, is connected to its motor through a belt. The motor is a 100-hp., 440-volt synchronous unit and is connected to the compressor by a belt with an idler pulley. The illustration shows the complete arrangement. The unusual feature is the smoothness with which the drive runs. The picture was taken when the motor was fully loaded and running at full speed. Note how steadily the idler runs. There is no jumping or flopping of the belt because the idler is mounted between two arms extending from the compressor cylinders. The idler may be adjusted in any direction.



**This Belt on a Compressor Drive Doesn't Flop About**

The photograph, taken while the machine was operating, shows how smoothly an idler can be made to run by properly adjusting its position on the supporting arms attached to the compressor.



# Production And the Market

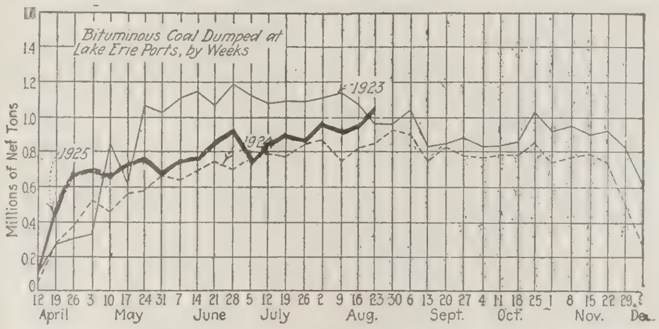
## Shadow of Oncoming Anthracite Strike Strengthens All Markets

The threat of an anthracite strike Sept. 1 cast a lengthening shadow over the coal markets of the country last week. To the bituminous producers, it was a very friendly shadow indeed, quickening demand both directly and indirectly and adding a firmer undertone to current prices. The influence, of course, was most strongly marked in the movement of soft coals suitable for domestic consumption, where the combination of the strike threat and the seasonal pick-up in that branch of the trade was felt over the entire broad stretch of territory from the Canadian border to Alabama and from Utah and the Continental Divide eastward to the Atlantic Ocean.

Indirectly this demand quickened the steam coal division of the industry, particularly industrial consumers of the higher grades of bituminous. Many of these have been trusting to day-to-day purchases in the open market to keep their plants running. Now, in a number of cases, they have entered the market to build up storage reserves against a draining of their sources of supply by alarmed eastern anthracite consumers. As a result, a number of contracts which have long been hanging fire have been closed. In one or two quarters—notably Baltimore—buyers normally dependent upon union or semi-organized fields have switched to out-and-out non-union mines to guard against interruptions to shipments.

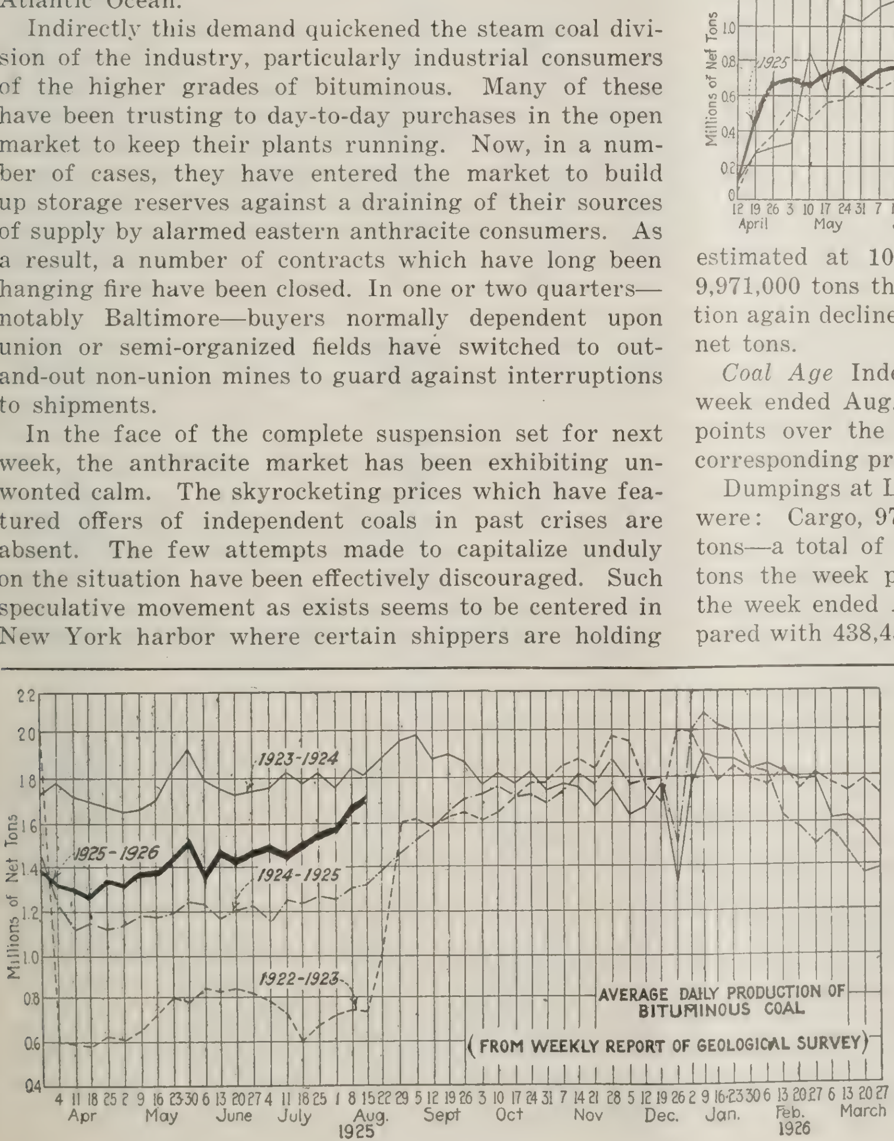
In the face of the complete suspension set for next week, the anthracite market has been exhibiting unwonted calm. The skyrocketing prices which have featured offers of independent coals in past crises are absent. The few attempts made to capitalize unduly on the situation have been effectively discouraged. Such speculative movement as exists seems to be centered in New York harbor where certain shippers are holding loaded boats for further advances in prices. The old-line companies are confining their domestic shipments to established customers and many of the independents have withdrawn quotations. Heavy drafts are being made on company stock piles of chestnut and pea to take care of orders for those sizes. Steam coals are firm all along the line, with only a limited supply of barley available.

Bituminous output for the week ended Aug. 15 is estimated at 10,244,000 net tons, as compared with 9,971,000 tons the week preceding. Anthracite production again declined, dropping from 2,061,000 to 1,904,000 net tons.



*Coal Age* Index of spot bituminous prices for the week ended Aug. 22 stood at 172, an increase of three points over the figure for the week preceding. The corresponding price was $2.08.

Dumpings at Lake Erie ports the week ended Aug. 23 were: Cargo, 978,457 net tons; steamship fuel, 50,035 tons—a total of 1,028,492 tons, compared with 949,052 tons the week preceding. Hampton Roads dumpings the week ended Aug. 20 totaled 513,780 net tons, compared with 438,456 tons the preceding week.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| Aug. 1 (*a*) | 7,723,000 | 9,457,000 |
| Aug. 9 (*a*) | 8,036,000 | 9,971,000 |
| Aug. 15 (*b*) | 8,167,000 | 10,244,000 |
| Daily average | 1,361,000 | 1,707,000 |
| Cal. yr. to date (*c*) | 283,782,000 | 295,751,000 |
| Daily av. to date | 1,474,000 | 1,539,000 |
| **ANTHRACITE** | | |
| Aug. 1 | 1,720,000 | 2,087,000 |
| Aug. 8 (*a*) | 1,664,000 | 2,061,000 |
| Aug. 15 | 1,386,000 | 1,904,000 |
| Cal. yr. to date (*c*) | 56,759,000 | 57,889,000 |
| **BEEHIVE COKE** | | |
| Aug. 8 | 89,000 | 123,000 |
| Aug. 15 | 95,000 | 123,000 |
| Cal. yr. to date (*c*) | 6,685,000 | 6,097,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Domestic Leads in Midwest

The Chicago market is showing signs of considerable activity, with special emphasis on the domestic sizes. Franklin County and southern Illinois generally have had no difficulty in maintaining $3.25 on 6-in. lump and 6x3-in. egg coal during the last week or so. In fact business has been coming in in such volume that a number of producers have withdrawn all prices on those sizes and are booking business only on the basis of price current at time of shipment. Buyers are willing to pay $3@$3.25 for 3x2-in. egg, and $2.50@$2.75 for 2x1¼-in. nut.

Indiana operators are gradually increasing prices on prepared coal, keeping them in line with the advances made by Illinois. Some of the producers of high grade Indiana No. 4, as well as the specialty coals of Indiana, have received as much business as they care to book on the $3 basis. Less favored coals from Indiana and Illinois are selling around $2.50 for 6-in. lump and 6x3-in. egg.

It is almost impossible to purchase anthracite. The few sales agencies who have it to offer are reserving their tonnage for old gilt-edged customers only, and even then are selling coal on the basis of price current at time of shipment. Good smokeless coals are moving freely at $4 for lump and egg, and $2.25@$2.50 for mine-run. Even on this basis few operators will commit themselves, except from day to day. High grade Kentucky coals are selling at $2.75@$3, with the demand very strong.

The position of steam coals on the Chicago market is still depressing. Good Indiana screenings can be had at $1.40, and high grade Illinois screenings in large quantities are easy at around $1.75. It is anticipated that there will be no change in the steam-coal market for the time being.

Business ranges from active to fair on domestic sizes in Williamson, Franklin and Saline Counties. Most mines are behind on lump shipments. It is feared so many mines will start up again to meet the demand that they will overdo the situation and thus bring on a price-killing production. Railroad demand is fairly good from both strip and shaft mines. The fine coal output is more than ample to take care of needs. The field as a whole is working three to five days. Prices on prepared sizes went up 25c. on Tuesday (Aug. 25).

In the Duquoin district three days a week seems to be the average. Nut and screenings drag but lump is well sold up. Prices are unchanged. In the Mt. Olive district increased domestic demand indicates what can be expected in September, but steam sizes are lagging. Working time averages two and three days a week. Idle mines have announced no reopening dates. Coal is still sacrificed in the Standard district, where mines are not averaging better than two or three days. Screenings are below $1; 2-in. lump is $2.10. Railroad buying is light.

St. Louis domestic for the better grades of Illinois coal continues good, but there may be an abrupt switch this week

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Aug. 25, 1924 | Aug. 10, 1925 | Aug. 17, 1925 | Aug. 25, 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.60 | $2.85 | $3.25 | **$3.75@$4.00** |
| Smokeless mine run | Columbus | 2.00 | 1.85 | 1.90 | **2.00@ 2.25** |
| Smokeless screenings | Columbus | 1.25 | 1.35 | 1.35 | **1.40@ 1.60** |
| Smokeless lump | Chicago | 3.60 | 3.25 | 3.25 | **3.75@ 4.00** |
| Smokeless mine run | Chicago | 1.85 | 2.00 | 2.00 | **2.00@ 2.50** |
| Smokeless lump | Cincinnati | 3.75 | 3.10 | 3.75 | 3.50@ 4.00 |
| Smokeless mine run | Cincinnati | 1.85 | 2.05 | 2.50 | 2.50 |
| Smokeless screenings | Cincinnati | 1.30 | 1.40 | 1.50 | **1.50@ 1.60** |
| *Smokeless mine run | Boston | 4.15 | 4.30 | 4.30 | **4.60@ 4.75** |
| Clearfield mine run | Boston | 1.85 | 1.75 | 1.75 | 1.65@ 1.90 |
| Cambria mine run | Boston | 2.45 | 1.95 | 1.95 | 1.85@ 2.10 |
| Somerset mine run | Boston | 2.10 | 1.85 | 1.85 | 1.75@ 2.10 |
| Pool 1 (Navy Standard) | New York | 2.85 | 2.55 | 2.55 | 2.35@ 2.75 |
| Pool 1 (Navy Standard) | Philadelphia | 2.40 | 2.60 | 2.60 | 2.45@ 2.75 |
| Pool 1 (Navy Standard) | Baltimore | .... | 1.85 | 1.85 | **1 90@ 2.00** |
| Pool 9 (Super. Low Vol.) | New York | 2.10 | 1.95 | 1.95 | **1.85@ 2.15** |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.00 | 2.00 | 1.85@ 2.20 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.95 | 1.75 | 1.75 | **1.70@ 1.85** |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.85 | 1.75 | 1.75 | **1.65@ 1.95** |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.70 | 1.70 | 1.65@ 1.85 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.70 | 1.60 | 1.60 | **1.60@ 1.70** |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.60 | 1.60 | 1.50@ 1.70 |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.40 | 1.40 | **1.40@ 1.50** |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.55 | 1.55 | 1.45@ 1.70 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.50 | 1.50 | 1.45@ 1.60 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.35 | 1.35 | **1.35@ 1.45** |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.40 | 2.45 | **2.50** |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.30 | 1.50 | 1.50 | **1.50@ 1.60** |
| Kanawha lump | Columbus | 2.10 | 2.00 | 2.00 | **2.25@ 2.65** |
| Kanawha mine run | Columbus | 1.40 | 1.40 | 1.40 | **1.50@ 1.70** |
| Kanawha screenings | Columbus | 1.05 | 1.15 | 1.30 | 1.25@ 1.35 |
| W. Va. lump | Cincinnati | 2.05 | 2.35 | 2.35 | 2.25@ 2.50 |
| W. Va. gas mine run | Cincinnati | 1.50 | 1.55 | 1.55 | **1.50@ 1.75** |
| W. Va. steam mine run | Cincinnati | 1.50 | 1.45 | 1.45 | **1.35@ 1.65** |
| W. Va. screenings | Cincinnati | 1.00 | 1.30 | 1.15 | **1.10@ 1.35** |
| Hocking lump | Columbus | 2.40 | 2.15 | 2.35 | **2.50@ 2.75** |
| Hocking mine run | Columbus | 1.55 | 1.55 | 1.55 | **1.50@ 1.80** |
| Hocking screenings | Columbus | 1.05 | 1.35 | 1.40 | **1.35@ 1.55** |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.25 | 2.25 | 1.95@ 2.60 |
| Pitts. No. 8 mine run | Cleveland | 1.80 | 1.85 | 1.85 | 1.80@ 1.90 |
| Pitts. No. 8 screenings | Cleveland | 1.20 | 1.40 | 1.40 | 1.35@ 1.45 |

| Midwest | Market Quoted | Aug. 25, 1924 | Aug. 10, 1925 | Aug. 17, 1925 | Aug. 24, 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $2.85 | $2.85 | $2.85 | **$3.00@$3.25** |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.85 | 2.00 | 1.95 | 1.65@ 2.25 |
| Central Ill. lump | Chicago | 2.60 | 2.60 | 2.60 | 2.50@ 2.75 |
| Central Ill. mine run | Chicago | 2.20 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central Ill. screenings | Chicago | 1.55 | 1.70 | 1.55 | 1.35@ 1.75 |
| Ind. 4th Vein lump | Chicago | 2.85 | 2.85 | 2.85 | 2.75@ 3.00 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.80 | 1.80 | 1.60 | 1.50@ 1.75 |
| Ind. 5th Vein lump | Chicago | 2.50 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.50 | 1.50 | 1.45 | 1.30@ 1.60 |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.25 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 2.00 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.15 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.20 | 1.30 | 1.30 | 1.25@ 1.40 |
| West Ky. block‡ | Louisville | 2.25 | 1.80 | 1.85 | 1.75@ 2.00 |
| West Ky. mine run | Louisville | 1.60 | 1.15 | 1.30 | 1.10@ 1.50 |
| West Ky. screenings | Louisville | 1.30 | .85 | .75 | .70@ .85 |
| West Ky. block‡ | Chicago | 2.30 | 2.00 | 2.00 | **2.00@ 2.50** |
| West Ky. mine run | Chicago | 1.60 | 1.35 | 1.35 | *1.15@ 1.25* |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.40 | 2.00 | 2.00 | 1.75@ 2.25 |
| Big Seam mine run | Birmingham | 1.75 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.00 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block‡ | Chicago | 2.60 | 2.55 | 2.55 | **2.60@ 3.00** |
| S. E. Ky. mine run | Chicago | 1.75 | 1.70 | 1.70 | **1.85@ 2.10** |
| S. E. Ky. block‡ | Louisville | 2.10 | 2.50 | 2.80 | **2.75@ 3.25** |
| S. E. Ky. mine run | Louisville | 1.50 | 1.55 | 1.55 | **1.50@ 1.75** |
| S. E. Ky. screenings | Louisville | .95 | 1.15 | 1.15 | 1.10@ 1.25 |
| S. E. Ky. block‡ | Cincinnati | 2.50 | 2.55 | 2.55 | **2.50@ 2.90** |
| S. E. Ky. mine run | Cincinnati | 1.50 | 1.50 | 1.55 | **1.50@ 1.75** |
| S. E. Ky. screenings | Cincinnati | 1.00 | 1.30 | 1.15 | 1.10@ 1.25 |
| Kansas lump | Kansas City | 4.50 | 4.10 | 4.25 | **4.25@ 4.50** |
| Kansas mine run | Kansas City | 3.50 | 3.10 | 3.10 | 3.00@ 3.25 |
| Kansas screenings | Kansas City | 2.50 | 2.50 | 2.50 | 2.50 |

* Gross tons, f.o.b. vessel, Hampton Roads.

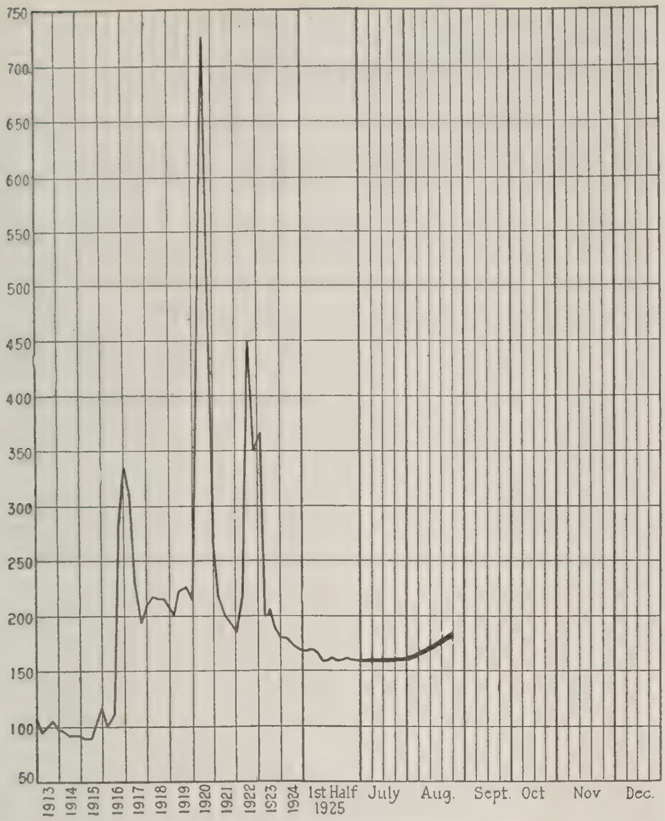
† Advances over previous week shown in **heavy type**; declines in *italics*.

‡ The term block is used instead of lump in order to conform to local practice, but the same coal is being quoted as heretofore.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | August 25, 1924 | | August 17, 1925 | | August 24, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ............ | $8.00@$9.05 | ............ | $8.20@$8.90 | ............ | $8.20@$8.90 |
| Broken | Philadelphia | 2.39 | ............ | 8.90@ 9.05 | ............ | 8.25@ 8.90 | ............ | 8.25@ 8.90 |
| Egg | New York | 2.34 | $8.50@$9.00 | 8.65@ 9.05 | $9.50@ 10.00 | 8.65@ 8.90 | **$9.75@10.25** | 8.65@ 8.90 |
| Egg | Philadelphia | 2.39 | 9.00@ 9.70 | 9.00@ 9.05 | 8.90@ 9.70 | 8.70@ 8.85 | 8.90@ 9.70 | 8.70@ 8.85 |
| Egg | Chicago* | 5.06 | 8.09@ 8.20 | 8.03@ 8.10 | 8.17@ 8.60 | 8.03@ 8.28 | 8.17@ 8.60 | 8.03@ 8.28 |
| Stove | New York | 2.34 | 9.00@ 9.50 | 8.65@ 9.30 | 10.00@ 10.60 | 9.15@ 9.40 | **10.00@10.75** | 9.15@ 9.40 |
| Stove | Philadelphia | 2.39 | 9.35@10.00 | 9.05@ 9.10 | 9.15@ 10.75 | 9.15@ 9.30 | 9.15@10.75 | 9.15@ 9.30 |
| Stove | Chicago* | 5.06 | 8.40@ 8.50 | 8.43@ 8.53 | 8.71@ 8.90 | 8.48@ 8.80 | 8.71@ 8.90 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 8.50@ 9.00 | 8.65@ 9.15 | 9.50@ 10.00 | 8.65@ 8.90 | **9.75@10.25** | 8.65@ 8.90 |
| Chestnut | Philadelphia | 2.39 | 8.85@ 9.80 | 9.00@ 9.05 | 9.15@ 10.15 | 8.85@ 8.90 | 9.15@10.15 | 8.85@ 8.90 |
| Chestnut | Chicago* | 5.06 | 8.18@ 8.33 | 8.28@ 8.34 | 8.35@ 8.60 | 8.28@ 8.50 | 8.35@ 8.60 | 8.28@ 8.50 |
| Pea | New York | 2.22 | 4.25@ 5.25 | 5.50@ 6.00 | 5.00@ 6.00 | 5.00@ 5.55 | **5.50@ 6.00** | 5.00@ 5.55 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | 5.50@ 5.90 | 5.00@ 5.50 | 5.50@ 5.90 | 5.00@ 5.50 |
| Pea | Chicago* | 4.79 | 5.23@ 5.55 | 5.36@ 5.91 | 5.18@ 5.36 | 5.05@ 5.36 | 5.18@ 5.36 | 5.05@ 5.36 |
| Buckwheat No. 1 | New York | 2.22 | 2.00@ 2.25 | 3.00@ 3.15 | 2.25@ 2.60 | 2.50 | **2.30@ 2.60** | 2.50 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | 2.50@ 2.75 | 2.50 | 2.50@ 2.75 | 2.50 |
| Rice | New York | 2.22 | 1.70@ 2.00 | 2.00@ 2.25 | 2.10@ 2.30 | 2.00 | 2.10@ 2.30 | 2.00 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | 2.00@ 2.25 | 2.00 | 2.00@ 2.25 | 2.00 |
| Barley | New York | 2.22 | 1.15@ 1.40 | 1.50 | 1.50@ 1.75 | 1.50@ 1.60 | 1.50@ 1.75 | 1.50@ 1.60 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | 1.50@ 1.75 | 1.50 | 1.50@ 1.75 | 1.50 |
| Birdseye | New York | 2.22 | ............ | 1.60 | 1.60@ 1.90 | ............ | ............ | ............ |

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Aug. 24 | Aug. 17 | Aug. 10 | Aug. 24 |
| Index | 172 | 167 | 166 | 165 |
| Weighted average price | $2.08 | $2.02 | $2.01 | $2.00 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to he proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

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following the advances in southern quotations. If so, Mt. Olive and middle grade coals will probably come in for a larger share of business. Outside of deliveries on apartment and school contracts, Standard coal is in doldrums. Neither carload nor wagon steam trade is active.

## Demand for Kentucky Coals Broadens

The Louisville market is humming along at a good pace despite a 50c. advance on all grades. Domestic and gas coal demands are expanding and even the steam trade is more lively.

Eastern Kentucky mine-run has jumped from $1.25@$1.35 to $1.50@$1.75. Screenings are firm at $1.10@$1.25, with little tonnage for sale under the maximum. The general run of 4-in. block is quoted at $2.75@$3; some off grade stuff can be had at $2.65 or less; fancy grades bring up to $3.25. Lump and egg are $2.25@$2.50.

Some western Kentucky operators ask $1.85 for August and $2.05 for September delivery for 6-in. block; the general market is $1.75@$2. Lump and egg are $1.60@$1.85; nut, $1.35@$1.65; mine-run, $1.10@$1.50; screenings, 70c.@85c.

Western Kentucky is showing marked improvement in production, but with the increased movement in prepared sizes screenings have worked lower. Eastern Kentucky, while advancing prepared prices, has maintained quotations on steam coals.

Milwaukee coal circles report a steady improvement in demand for all grades of fuel. Cargoes are arriving steadily. Lake receipts to Aug. 20 aggregated 1,984,537 tons—452,534 tons of anthracite and 1,532,003 tons of bituminous coal. Anthracite receipts were 15,389 tons less than a year ago but bituminous receipts were 372,642 tons greater than last season.

## Northwestern Improvement Continues

Retailers at Minnesota and North Dakota points have been ordering on moderate tonnages from the docks at the Head of the Lakes, and industrial companies over the Northwest have also been better buyers. The railroads are still helping out the docks by removing storage coal to their fueling depots over the territory. Northern Minnesota hydro-electric utilities are putting out feelers for bituminous coal to operate auxiliary plants called into play by the dry weather.

The consuming public is showing supreme indifference over an anthracite strike next week. Even the regular users of hard coal have been backward in ordering fill-ups. Retailers throughout the territory have been complaining that until very recently they have not had enough orders to keep their delivery outfits going. The indifference to the strike threat is attributed to the growing use of substitute fuels. The Northwest bought liberally of Pocahontas last season for domestic purposes, and new-won customers are being held. The use of mixtures of coke and buckwheat or pea, and briquets has also been gaining.

The movement of coal from Lake Erie ports is keeping up well but the anthracite run has completely dried up. Thirty-eight cargoes of bituminous coal were unloaded at the docks last week and eleven cargoes including one of anthracite were en route. Prices are firm and unchanged.

While the approach of fall has stimulated buying at the Twin Cities, no wild enthusiasm is displayed. Demand from the interior has been fair for some time. In the cities, there is the usual pick-up to be seen in August. Despite the expectation of a hard coal strike, there is no great attempt at stocking beyond a modest amount.

The figures as to the dock stocks for the season assure the Northwest of a reasonable supply of coal of all kinds. Up to Aug. 1 there had been received 6,611,000 tons of coal, including the carry-over, a gain of 500,000 tons over the preceding year. While the docks may count upon somewhat greater demand this winter than last, yet the greater tonnage and the probabilities that August will also show a gain, means that there will be sufficient for all probable needs.

The price situation holds steady. Prices have not varied during the season. Southern Illinois coal is holding at the new figure of $3 for the larger size, and $2.75 for the smaller. Other all-rail prices are the same as they have been. Dock prices are steady, with no change noted.

## Southwestern Domestic Demand Expands

The domestic market in the Southwest is improving as autumn approaches. Dealers are buying more extensively and there is a heavier call from consumers. Some recent price lists quote Kansas shaft lump as high as $4.50, while none quote it at less than $4.25. Improvement in the screenings market has been more marked than in the domestic and still necessitates the extensive crushing of shovel mine run.

There has been a substantial improvement in both domestic and steam demand in the Colorado fields, pushing operations up to an 85 per cent basis. Some of the larger producers are booked up through September and the orders are coming in so fast that a further increase in production will be necessary to insure prompt deliveries. Walsenburg domestic lump is now quoted at $5.25; washed nut, $4.50; washed pea, $3. Nos. 1 and 2 Crested Butte anthracite bring $7 and Nos. 3 and 5 (base burner size), 50c. more. An advance of 25c. is predicted for the first of the month. Outside of some of the smaller fields, such as the Canon City district, the labor situation is quiet.

The Utah coal trade continues draggy, but prices are steady. Winter storage orders are hanging fire in spite of the efforts being made by retail dealers, backed by the operators, to get the public to store coal. The weather is cooler, however, and a little coal is being bought for immediate consumption. There are less no-bill cars on the tracks than there were due to strict policing by the carriers.

The mines served by one big railroad suffered a slight loss of working time last week as a result of car shortage. It is feared that this shortage will become serious and general as the heavy crops begin to move, which will be at an early date.

The slack situation continues fairly easy. A few of the big consumers have been short, but are taken care of now.

The metal mining and smelting industries continue to be the biggest industrial consumers.

### Strike Threats Help West Virginia

Reports from the mining centers of West Virginia indicate that both the low-volatile and the high-volatile fields in the southern part of the state are enjoying a larger share of the nation's coal business as a result of the strike threat in the anthracite region. Heavier orders from eastern markets have enabled the producers in the Pocahontas and New River fields to approach an equalization in the prices on prepared sizes for eastern and western deliveries. Mine-run, too, is attracting more attention in eastern quarters and slack also has become firmer in price. The Winding Gulf field, with its principal outlets in the East, has been compelled to speed up production to care for demand.

Under present market conditions, southern West Virginia high-volatile producers are finding their territory of distribution larger and more diversified than has been their lot for some time. Inland demand is keeping up at a good rate and there is a healthier undertone to the tidewater market. Increased production of prepared sizes to take care of domestic and the specialty steam trades has not broken down the prices on slack. It is estimated that the Kanawha and Coal River sections are now shipping at the rate of 350,000 tons a week and the Logan district, with night shifts at some operations, is doing 50,000 tons better. The Kenova-Thacker field, with weekly shipments approximating 200,000 tons, is operating close to a 67 per cent basis.

Despite the continued efforts of the United Mine Workers to cripple activities in the northern counties because the operators have broken away from the uneconomic terms of the Jacksonville-Baltimore agreements, that section of West Virginia is now loading more coal than at any time since February, 1924. The greater part of the tonnage is coming from open shop mines. There has been some increase in the organized Scott's Run field, but the total output from that district, even under the most favorable circumstances, is relatively small. It is estimated that the output for the northern region as a whole is now in the neighborhood of 500,000 tons a week. Approximately one-half of this total comes from operations on the Monongah division of the Baltimore & Ohio R.R. Mines on the Monongahela line are averaging about 180,000 tons.

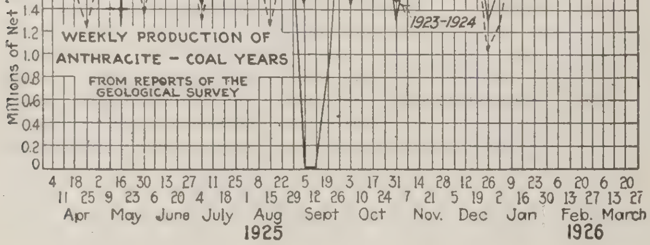
### Smokeless Booming in Cincinnati

Demand for smokeless coal in the Cincinnati market exceeds the supply. Practically all the big companies are oversold. Although the chief call is for domestic grades, steam sizes are almost equally active. Much of the tonnage is moving at old contract rates, but spot sales on domestic sizes are about $1 per ton higher and operators refuse to quote for September delivery. Mine-run at tidewater has reached the highest point in several years and is still climbing.

High-volatile coals are in less urgent demand, but current supply is readily absorbed and the prices are firmer. A good deal of this coal is going to upper Mississippi Valley points. The South also is buying, largely from southeastern Kentucky, and paying higher because of the limited competition.

Local retailers are favoring smokeless and the better grades of high-volatile, fearing an anthracite tie-up may divert these coals to the East. Retail prices have been increased 50c.

Industries which have long permitted their reserves to run low, depending on spot purchases, have begun to buy for stocking fearing a continuously rising market.



Coal movement through the Cincinnati gateway last week —14,727 cars—constituted 53.5 per cent of the total freight tonnage handled. This was a gain of 697 cars over the previous week and of 5,272 cars over the corresponding week last year. There were 3,352 cars consigned to lake ports.

Quotations f.o.b. mines are: Smokeless slack, $1.50@$1.60; mine-run, $2.25@$2.50; nut-and-slack, $2.25@$2.75; lump and egg, $3.50@$4. High volatile nut-and-slack is quoted at $1.10@$1.35; mine run, $1.35@$1.75; egg $1.85@$2.25; 2-in. lump, $1.85@$2; 4-in. block, $2.25 to $2.50, with premium coals up to $3@$3.30. Low volatile mine-run is bringing about $4.60 gross at tidewater.

Improvement, particularly in domestic demand, has taken place in Ohio. Retailers are asking for immediate shipments to replenish depleted stocks as householders come into the market for their winter's supply. Columbus retail prices have advanced to $8.25@$8.75 for smokeless and $7.50@$8 for high volatile West Virginia. Ohio coals run a poor second for domestic favor.

Steam business has also shown more life. There is practically no distress coal on the market and the surplus in Toledo and Detroit has been cleaned up. Some contracts are being closed as large users are showing some anxiety as to their fuel supply. Some railroads have signed up and utilities are making inquiries, but general industrial demand still lags.

Production in the southern Ohio field is now about 30 to 35 per cent of capacity.

### Shift to Non-Union Operations Continues

The shift to non-union operations in the central Pennsylvania field continues. Outside of the operations of the three large companies that have clung to the Jacksonville scale and scattered mines here and there, the field, for the time being at least, seems definitely committed to the 1917 wage scale. The steady increase in output in recent weeks is attributed to that scale, which has allowed operators to compete on more near equal terms with West Virginia coals.

Demand for coal in the Pittsburgh district showed distinct improvement in the past week. Consumption has increased somewhat and there is a little more disposition to accumulate stocks. Domestic coal is seasonably active. However, there has been no broadening of the area of distribution.

Gas lump has stiffened to $2.50 flat, against $2.40 @ $2.50 a week ago and $2.30 @ $2.50 for a long time previous; slack hangs at $1.50 @ $1.60; mine-run is still easy at $2.10 @ $2.25, because there are so many mines which cannot screen conveniently. Steam coal is no stronger in price, but is easier to sell.

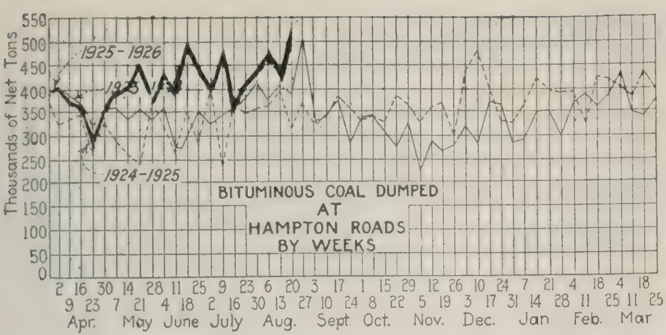
Domestic coal, according to quality and popularity, ranges from $2.40 @ $2.60 for 1¼-in.; $2.60 @ $2.75 for 2-in. and $2.75@$3.00 for 3-in. lump.

### New England Market Stronger

A distinctly firmer trend was in evidence in New England last week. Accumulations at Hampton Roads were reduced, and a few of the agencies had steamers waiting more than two to three days for coal to arrive. There was even a demand for small lots to clear some of this tonnage, and prices re-acted under a mild pressure for spot supply. Where a week ago the range could hardly be said to touch $4.50 gross f. o. b. vessels, the level is now up to $4.60 @ $4.75 for prompt coal of Navy Standard grade. There are those who doubt whether today's firmness can be maintained, especially in view of the increased production that heretofore this season has invariably followed each advance in price, but should the anthracite suspension materialize there would surely be a better demand for prepared coal for domestic use.

On cars Boston and Providence there has been a similar tendency to higher prices. Enough buyers have been in the market to make advances of 15 to 25c. easily secured, and at both points there have been sales of small tonnages all the way from $5.75@$6. Along with spot coal there have been more than a few contracts undertaken for delivery through the winter on about the same basis. It gives the impression that shippers and other distributors are still inclined to hedge a little on the future.

As yet there has been only slight change in minimum prices of steam coal all-rail from Pennsylvania. There continues to be moderate demand for deliveries west and along the line, but very little buying has developed here.



Pocahontas and New River are still low enough in price to dominate the large area accessible to tidewater.

The Buffalo bituminous market pays no attention to strike possibilities in the anthracite regions, and neither prices nor demand show any material change. Current quotations are as follows: Fairmont lump, \$1.60@\$1.75; mine-run, \$1.40@\$1.50; slack, \$1.25@\$1.40; Youghiogheny gas lump, \$2.25; Pittsburgh and No. 8 steam lump, \$2@\$2.25; slack, \$1.30@\$1.60; Allegheny Valley mine-run, \$1.75@\$2.

### Strike Threat Tones Up New York Market

Increase in demand and prices featured the bituminous trade at New York. Less coal was available at the minimum quotations, and consumers showed greater readiness to place orders. There is every indication that there will be a much stronger market the next few weeks due to fall buying and requirements of industrial plants.

Although most shippers believe it will be at least a month before the effect of an anthracite strike will be felt in the soft coal industry, many consumers are taking advantage of the current prices to increase their reserves.

Measured by increased demand, bituminous trade in the Philadelphia market is on the up-grade. Prices, however, have not kept pace and little improvement is forecast in that direction for some time. The anthracite strike threat is reflected in heavier buying of soft coal, not alone for local industries, but from New England and Canadian consumers.

The tidewater market is still quiet and no signs of a boom are apparent. Hope that there may be a sudden boom in shipments to New England and other northern points, however, is still cherished. No clearances were reported last week.

Bituminous market conditions at Baltimore suffered a reversal of form last week. Demand for home consumption took the lead and export and bunker trade slide towards the nadir in business. Industrial buyers, believed to be influenced by the strike threats in the soft-coal regions, showed a revival of interest in the market and a number of contracts for Cambria County coals were closed. Competition for business, however, is still keen, but quotations have advanced 5 to 15c.

### Alabama Movement on Up-Grade

While there has been no rush of orders, the Birmingham market has shown unmistakable improvement the past week. Domestic demand, after weeks of abnormal sluggishness, is picking up. Inquiries and spot orders are more numerous, while the movement of contract is more satisfactory. Retail trade is still slow, as the weather is extremely warm.

Spot bookings of steam coal are improving and there is some increase in shipments against contracts. The cotton gins, ice plants and cement mills are using coal in increasing volume while the dry weather forces heavier power plant consumption. The anticipated anthracite strike is indirectly being felt here in a small way as more coal from Kentucky is going north, leaving a bigger tonnage to Alabama in the Southeast.

Bunker coal business is ahead of last month. There is a small export movement to South America and Cuba.

Quotable prices have shown no change

### Would Substitute Welsh Coals

Outside of the rapid advance in demand and a corresponding increase in quotations on independent anthracite, the outstanding feature of the market at New York last week was inquiries as to the possibilities of importing Welsh coal. Most of these inquiries come from New England and it is likely that considerable Welsh anthracite will find its way to this country soon after Sept. 1 if there is a shut-down in the hard-coal region.

Some individual operators are refusing orders. Some of the larger companies are pro-rating their output.

The demand at tidewater is fully as strong as along the line. Many loaded boats are in the harbor and freights are advancing. Egg is apparently as strong in demand as stove. Chestnut also is more active, while pea is moving easily. Some producers are loading pea and nut out of storage.

Steam sizes are firm, with barley tonnage very limited.

The Philadelphia trade is working on the theory that Sept. 1 will usher in an indefinite suspension in anthracite mining. Solicitation of business ceased a fortnight ago and some of the larger companies now refuse to book anything but steam tonnage, which is increased to such an extent that the producers are drawing upon their storage piles. This demand, however, has not developed premium prices.

The domestic consumer views the situation calmly. Aside from stove there is no great pressure for deliveries by the householder. Retail stocks are not being depleted at a great rate because buying has been fairly active all summer.

Baltimore exhibits no signs of panic at the pendency of an anthracite strike. Retail stocks are fair, with current receipts in excess of deliveries. Cellar reserves, while not as great as in some former periods, are comfortable. At worst the market expects no long suspension or sees no necessity for rationing.

There is a rush for anthracite in the Buffalo market and all the distributors are short of coal. There ought to be a chance to see if the consumer wants coke or smokeless coal. He has been buying a little more of both than is common in summer and he may hesitate now till he needs to start up his furnace. Coke sells at \$4.50@\$4.75 at the ovens, domestic size, on a \$3.28 freight rate. At the curb the price is \$9@\$9.50. Smokeless coal, curb price, is \$6.

Anthracite lake shipments were light last week totaling 39,600 tons, of which 10,700 tons cleared for Fort William, 9,700 tons for Duluth, 6,700 tons for Chicago, 6,500 tons for Milwaukee and 6,000 tons for Escanaba.

Freight rates are 55@60c. to Chicago, 50c. to Milwaukee, Escanaba and 40c. to Duluth, Fort William.

### Connellsville Coke Advance Halted

The Connellsville coke trade has taken another sudden turn. A fortnight ago there was a spurt of activity after a long period of stagnation, and furnace coke advanced sharply. Last week there was practically no live inquiry of any consequence. The market simply held at \$3.25. Heating coke had advanced nearly if not quite to \$3.25 and it is now relatively dull.

Some members of the trade now have suspicions that eastern consumers have obtained some special information leading them to doubt whether there will be much of a suspension. The important buying had been largely by gas companies in the East, who do not like to switch from anthracite to coke, but who would hardly balk at a 25c. or even a 50c. advance in price, as the price of coke, when so much below that of anthracite is merely a sort of detail.

During the excitement two blast furnace interests concluded to cover for fourth quarter without delay, one paying \$3.50, the other \$3.75. Last June third quarter contracting was done at an average scarcely as high as \$3, some business running over fourth quarter at but a slight advance.

Foundry coke has been unaffected by the stiffening in furnace coke, spot remaining quotable at \$3.75 @ \$4.25, with buying increased but little, if any.

Late production figures show little change.

### Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Aug. 8, 1925 | 1,051,611 | 189,761 |
| Previous week | 1,043,063 | 180,936 |
| Week ended Aug. 9, 1924 | 942,198 | 149,482 |

| | Surplus Cars | | Car Shortage |
|---|---|---|---|
| | All Cars | Coal Cars | |
| Aug. 7, 1925 | 238,474 | 72,054 | |
| July 31, 1925 | 263,876 | 80,661 | |
| Aug. 7, 1924 | 296,496 | 146,840 | |

# Foreign Market And Export News

## August Bank Holiday Contributes to British Market Sag

Much British coal business has been lost through the diversion of orders to Germany and America. It is, perhaps, fortunate that the sudden reversal of the postion should have occurred on the eve of the August holidays, during which the pits in any case would have been entirely closed for Monday, Tuesday, and Wednesday. Colliery salesmen realized the futility of maintaining quotations on the basis of those of the last fortnight of July, and in many cases reverted to the figures ruling previously, involving a general drop in values of about 1s. 6d. to 2s. per ton. Whether this will attract business or not remains to be seen. There has not yet been an adequate opportunity of testing conditions since the settlement.

Though the crisis is over in the Newcastle coal, and work at the pits is continued as usual, the coal market conditions are very unsatisfactory. Business for early August shipment is exceedingly scarce. Exporters are offering coal freely and indicating to the clients abroad that prices will now be on a lower basis. When the question of Government subsidies has been settled, it is expected that several of the pits recently closed will reopen.

British production for the first week in August dropped to less than 3,000,000 tons because of the August bank holiday, a cable to *Coal Age* states.

### French Coal Market Improves Slightly

The situation of the French collieries has slightly improved recently. This is not a rally but is due to a faintly better consumption in the metallurgical, textile and glass-making industries. Domestic fuel business is quite satisfactory.

In the Sarre, after a week of strike the men took up work again, after accepting the governmental proposals of an increase of 5 per cent in salaries and an improvement of piece-work rates. This is what had been offered by the Minister before the conflict.

During the first twenty-five days of July, German indemnity fuels in France totaled 506,900 tons, including 268,500 tons coal, 216,500 tons coke and 21,900 tons lignite briquets, which make a daily average of about 20,300 tons. Coke reparations from the Ruhr totaled 232,926 during July.

### Hampton Roads Expects Big New England Business

Coal agencies at Hampton Roads are predicting an increase in tonnage of transient prepared coal from West Virginia to New England via Tidewater as a result of the Interstate Commerce Commission's recent rate decision. Already there has been considerable talk of handling methods to transfer the coal from cars to ships without breaking it up. Some are of the opinion that this handicap will be overcome now that the rates are favorable.

### Bunker Coal Shipments Rise

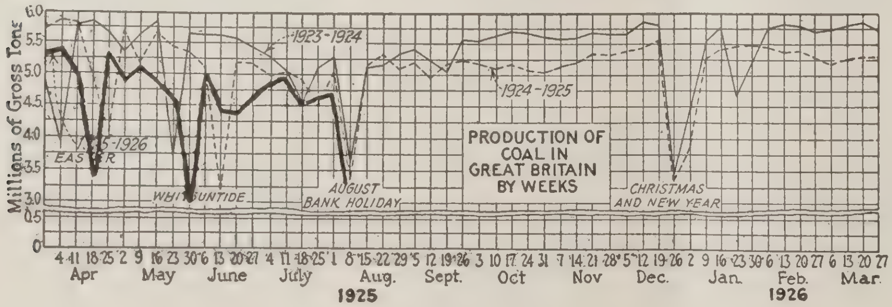
United States bunker coal laden on vessels engaged in foreign trade totaled 1,137,997 long tons in the second quarter of 1925 compared with 933,567 tons in the first quarter, an increase of about 214,000 tons or 23 per cent, according to the Coal Division of the Department of Commerce.

The following table shows in long tons the quantity of bunker coal sold in the principal customs districts for the first two quarters of 1925:

| Customs Districts | January, March | April, June |
|---|---|---|
| New York | 269,422 | 301,869 |
| Philadelphia | 75,975 | 84,828 |
| Maryland | 46,647 | 47,854 |
| Virginia | 376,874 | 468,795 |
| St. Lawrence | 927 | 16,984 |
| Florida | 42,825 | 43,821 |
| Mobile | 21,181 | 26,686 |
| New Orleans | 50,734 | 44,523 |
| Ohio | 1,902 | 36,234 |
| Michigan | 35 | 13,064 |
| Other districts | 47,045 | 63,339 |
| Total | 933,567 | 1,147,997 |

### Belgian Market Strengthens

In spite of the continuance of the metallurgical strike a very slight industrial improvement in the Belgian market is noticeable, with regard to industrial descriptions. The demand for dry smalls and for coking smalls is stronger. Better qualities of briquets have risen by 10 francs, and even industrial beans, have benefited by a comparative rally. Domestic fuel is really and truly at last on the mend.



Coal difficulties in the domestic mines of Chile are still troubling that country. Prices are well maintained in that country on import coal. Pocahontas and New River is selling there for more than $8 at northern ports and is rising. Aug. 1 Cardiff Admiralty coal was quoted there at $8.38 and for August shipment the price was set at $8.50.

The United States had exported a total of 1,654,202 tons of anthracite during 1925 to June 30 as compared with 1,752,900 tons during the same period last year. Soft-coal exports totaled 6,398,419 tons this year and 7,131,968 tons for the period in 1924 but coke exports rose from 286,317 tons to 351,895 tons.

### Export Clearances, Week Ended Aug. 22, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Italy: | |
| Ital. Str. Vallarsa, for Porto Farraio | 7,377 |
| Jap. Str. Vancouver Maru, for Genoa | 7,718 |
| For Nova Scotia: | |
| Nor. Str. Speed, for Halifax | 1,932 |
| For St. Lucia: | |
| Nor. Str. Fram, for Casterus | 3,707 |
| For Brazil: | |
| Br. Str. Betwa, for Rio de Janeiro | 5,049 |
| Ital. Str. Attualita, for Rio de Janeiro | 8,059 |
| Br. Str. Kingsbury, for Rio de Janeiro | 5,404 |
| Br. Str. Beatus, for Rio de Janeiro | 6,889 |
| Br. Str. H. H. Asquith, for Pernambuco | 6,700 |
| For France: | |
| Br. Str. Bankdale, for Marseilles | 2,716 |
| For Egypt: | |
| Br. Str. Rhesus, for Port Said | 1,308 |
| For Cuba: | |
| Nor. Str. Blaamjra, for Manati | 3,004 |

### Hampton Roads Pier Situation

(Gross Tons)

| N. & W. Piers, Lamberts Pt.: | Aug. 13 | Aug. 20 |
|---|---|---|
| Cars on hand | 1,335 | 1,316 |
| Tons on hand | 80,842 | 82,776 |
| Tons dumped for week | 140,504 | 168,183 |
| Tonnage waiting | 15,000 | 10,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 618 | 835 |
| Tons on hand | 49,450 | 59,750 |
| Tons dumped for week | 98,503 | 98,435 |
| Tonnage waiting | 22,424 | 13,118 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,524 | 2,075 |
| Tons on hand | 122,195 | 103,775 |
| Tons dumped for week | 152,472 | 192,114 |
| Tonnage waiting | 12,565 | 12,825 |

### Pier and Bunker Prices, Gross Tons

| | Aug. 15 | Aug. 22† |
|---|---|---|
| PIERS | | |
| Pool 1, New York | $5.25@$5.55 | $5.25@$5.55 |
| Pool 9, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 10, New York | 4.50@ 4.65 | 4.50@ 4.65 |
| Pool 11, New York | 4.25@ 4.50 | 4.25@ 4.50 |
| Pool 9, Philadelphia | 4.65@ 4.90 | 4.65@ 4.90 |
| Pool 10, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 11, Philadelphia | 4.25@ 4.30 | 4.25@ 4.30 |
| Pool 1, Hamp. Roads | 4.40 | 4.40 |
| Pool 2, Hamp. Roads | 4.25 | 4.25 |
| Pools 5-6-7, Hamp. Rds. | 4.15 | 4.15 |
| BUNKERS | | |
| Pool 1, New York | $5.45@$5.75 | **$5.50@$5.80** |
| Pool 9, New York | 4.95@ 5.20 | **5.00@ 5.25** |
| Pool 10, New York | 4.70@ 4.85 | **4.75@ 4.90** |
| Pool 11, New York | 4.45@ 4.70 | **4.50@ 4.75** |
| Pool 9, Philadelphia | 4.80@ 5.05 | 4.80@ 5.05 |
| Pool 10, Philadelphia | 4.60@ 4.80 | 4.60@ 4.80 |
| Pool 11, Philadelphia | 4.45@ 4.65 | 4.45@ 4.65 |
| Pool 1, Hamp. Roads | 4.50 | 4.50 |
| Pool 2, Hamp. Roads | 4.35 | 4.35 |
| Pools 5-6-7, Hamp. Rds. | 4.25 | 4.25 |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Aug. 15 | Aug. 22† |
|---|---|---|
| Admiralty, large | 30s. | *25s.* |
| Steam smalls | 17s.6d. | *13s.6d.@14s.* |
| Newcastle: | | |
| Best steams | 16s.9d. | *16s.3d.* |
| Best gas | 25s. | *24s.9d.* |
| Best bunkers | 16s.@18s.6d. | **17s.9d.** |

†Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

The Alabama Public Service Commission has ordered a reduction of 10c. per ton from coal mines on the Frisco System in Group No. 1 to Florence, Sheffield and Tuscumbia, and allowed an increase of 5c. per ton to the same points from Group No. 3 mines. The commission also ordered a general reduction in coal rates from all mines on the Frisco System in Alabama to all points on the Memphis division of the Southern Ry. This represented action on complaints filed by the Florence Chamber of Commerce.

## COLORADO

Because charges that their daily production had not been up to standard could not be proved against four miners by the Clayton Coal Co., of Weld County, the men, Gus Brock, John K. Davis, W. T. Lambert and T. J. Preecs were ordered reinstated to their old positions at the mine by the state industrial commission, following a hearing on the case Aug. 14.

The total production for Colorado for July is 602,000 tons compared with 616,000 tons a year ago which is a decrease of 14,000 tons. The decrease is due to the production in the lignite fields. The month of August may show a substantial increase over the same period a year ago.

The Colorado Fuel & Iron Co. has filed with the state industrial commission notice of a wage agreement between the company and employees in ten of its coal mines in Las Animas and Huerfano Counties, and the coke ovens at Segundo. Between 3,000 and 4,000 men will be affected by the new scale. The scale agreed on is approximately 11 per cent below present wages, which scale was adopted several months ago on a 20 per cent reduction. The commission announced the new scale will leave the wages of Colorado Fuel & Iron employees slightly higher than other operators in the same counties.

## ILLINOIS

Wasson Mine No. 1, Herrin, which had been closed down six weeks, resumed work Aug. 10.

Approximately 2,000 southern Illinois miners in Williamson and Franklin Counties were scheduled to resume work last week. This means there will be more miners working in those counties than at any time during the past two years. Mines that will resume are: Consolidation Coal Co. Mine No. 7 at Herrin, the Valier mine, at Valier, Old Peabody No. 3 at Marion, the Orient No. 1 mine and one of the Old Ben mines at West Frankfort and another mine of the Old Ben Coal Co. at Christopher. Several smaller mines in that district were also scheduled to begin operations last week.

Much conversation concerning a proposed merger of Standard district and Mt. Olive region mines in Illinois continues to be heard around St. Louis, Mo. The plan involves properties capable of producting about 30,000,000 tons annually. The Consolidated Coal Co. of St. Louis, the Mt. Olive & Staunton Coal Co. and the Rutledge & Taylor Coal Co., holding some of the choice mines of the proposed consolidation have not yet agreed to go in, so that many insurmountable obstacles may yet arise. In this merger the name of H. E. Bell, of Bell & Zoller Coal Co. of Chicago, one of the biggest southern Illinois producers, has been mentioned as a negotiator. This gives rise to the rumor that Franklin County interests are encouraging the plan as one means of lessening the cut-throat competition their own output now meets.

The Wallsend Coal Co., of Delaware, early in August acquired the holdings of the old Wallsend Coal Co. at Wallsend, and plans expenditure of about $60,000 on improvements, including a coaling station for the L. & N. R.R. Co., miners' homes, etc. The work will be in charge of J. D. Roper.

Electric Mine No. 1, west of the Kistler Hill on the Danville-Champaign road, sustained a slide of about 100 car loads of earth July 30, which cost the lives of two miners. The large 250-ton steam shovel was practically buried. A careful check-up of the mine's payrolls showed that no further casualties were to be expected.

## INDIANA

Receivership for the Joan Coal Mining Co., operating a mine near Riley, was asked Aug. 14 in two suits on account filed against the firm by the Bruns Powder Co. and the industrial Supply Co. in superior court in Terre Haute.

The opening of several of the larger coal mines in western Indiana and the possibility of resumption of operations at other mines, indicates a partial return, at least, of prosperity in that section of the state. A mine operated by the Fort Harrison Mining Co. is being cleaned up preparatory to opening. The mine suspended last March 16. Preliminary operations for reopening the Baker mine in the Sullivan field also are reported. Reports from Terre Haute banks show the volume of payroll money is gaining each semimonthly period.

A coal bed 16 ft. thick has been struck on the farm of Frank Harter, in Spencer County, one mile north of Newtonville. The coal is said by experienced mine men to be of excellent quality. Most of the beds uncovered in this section range from 4 to 6 ft. thick.

## IOWA

Iowa's much-discussed coal mine merger appears to have failed to develop. The original plan was to consolidate most of the producers of Appanoose and Wayne Counties into a group controlling about 25,000 acres of coal. Options were given on forty-nine properties. The Iowa Southern Utilities Co. took a hand and early in August it was said the merger was nearly complete. Since then, however, the usual difficulties involved in determining valuations arose and the effort has been given up.

## KANSAS

The Lone Star Coal Co. has leased 400 acres of coal land four miles west of Pittsburg and has ordered a large shovel to put on it. The tract will afford work for twelve or fifteen years. The officers of the company are R. G. Nesch, president; L. G. Schmaltz, vice-president; and J. J. Nesch, secretary-treasurer. The same men own the N. & S. Coal Co., which operates a steam shovel mine at Hume, Mo.

Two Kansas coal mines that have been idle since soon after the World War are swinging back into action. The Hamilton Coal & Mercantile Co. has resumed operation of its mine No. 9 near Cherokee, employing 200 men. The Domestic Coal Co. is electrifying its shaft No. 3 north of Gross, preparatory to having it operated by a lessee.

The Western Coal & Mining Co. has leased its mine No. 21 near Scammon to John Lyons of Pittsburg and Francis Fern of Scammon and has leased its No. 14 at Fleming to Wilbert & Schreeb, who operate a mine west of Pittsburg. While the cream of production has been taken from both mines a large tonnage remains, J. D. Delaney, superintendent of the Western company, says. The Western has let contracts for sinking shafts for two large mines, No. 22 north of Arma and No. 23 near Minden.

## KENTUCKY

Announcement was made at Covington, Aug. 8, of a voluntary petition in bankruptcy by the Daisy Coal Co., of Krypton, listing liabilities of $4,010 and assets of $3,524. The company operated in Perry County.

The mine of the bankrupt Co-Operative Coal Mining Co., at Nebo, in western Kentucky, near Madisonville, is being dismantled, the equipment sold, and the mine mouth will be sealed. The company at one time produced a fine grade of steam coal, but had a bad roof, and excessive production cost.

Judge Charles I. Dawson in the United States District Court recently issued a restraining order against Sheriff L. R. Ray, of Hopkins County, preventing him from collecting taxes and penalties assessed against the St. Bernard Coal Co. for 1924. The decision was based on a suit brought by the St. Bernard Coal Co. against the county on the grounds that the assessment was made on August 8, 1924, when the State Tax Commission had no power to act as a State Board of Equalization.

Plans are being made by the West Kentucky Coal Co. to drill new oil wells on its property in the Suthards section, where it recently brought in a well at 2,200 ft. The well now is producing oil of 41 per cent specific gravity and of a fine grade. It is still on test.

The Hawley-McIsaac Coal Co. which recently acquired almost 10,000 acres of coal land in the region of Nebo, including 700 acres of stripping land, has already spent $60,000 remodeling the old top works of the Circle City mine. A conveyor, crusher and fifteen electric motors have been installed. Three dinky engines and cars for hauling the coal to the tipple and a switch engine for use in the yards complete the equipment for one of the finest top plants in that field. In addition a steam shovel has been purchased to remove the overburden and a smaller shovel to load the cars. There will be about 70 men employed in the operation of the stripping plant. It is planned to have a 40-car daily output.

The Dawson Daylight Coal Co., near Dawson Springs, while rebuilding its burned frame tipple, is producing mine run and some sizes over a temporary loading tipple. Following the fire at this plant, which was one of three in western Kentucky field, within a period of a few days, mines posted armed guards and no other fires have been reported.

## MINNESOTA

The 350 ft. extension to the Inland Coal & Dock Co.'s plant at Duluth may be completed by Oct. 1, with part of it scheduled to be ready Sept. 1. Officials of that company are looking forward to an active period this fall and winter.

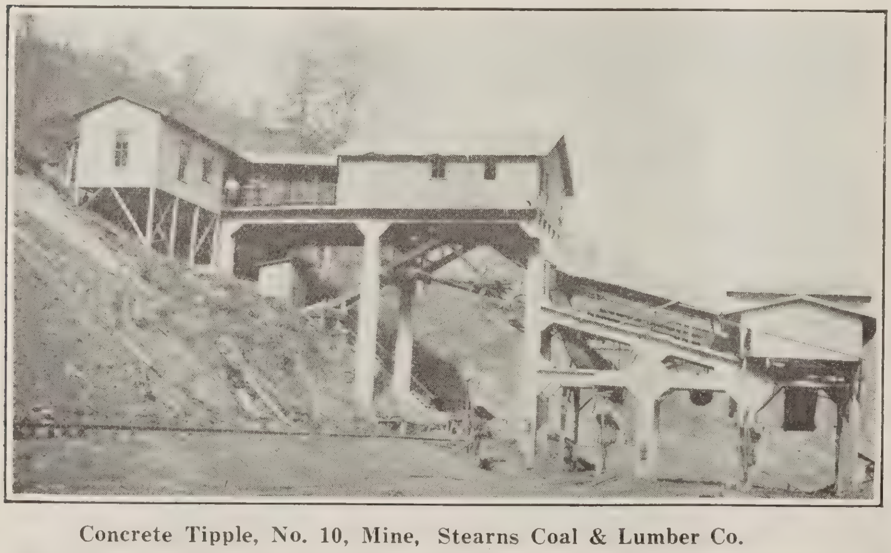
The Berwind Fuel Co. set a record one day during the first week of August by unloading 10,000 net tons of bituminous coal from the steamer Fred G. Hartwell in 7 hrs.

Whitney Bros., contractors of Duluth, have completed a coal dock for F. B. Spear & Sons at Marquette, Mich. It has a storage capacity of 300,000 tons and is to be equipped with a 5-ton 300-ft. unloading bridge. It will be ready to go into commission by Oct. 1. It is of pile and concrete construction.

## MISSOURI

Coal has been struck at a depth of 236 ft. a mile east of Pattonsburg, giving that town the thrill of its life. A seam about 4 ft. thick was encountered by drillers working for a company formed by W. G. Cline of Chillicothe. Pattonsburg people are interested in the company and hope they will soon see coal produced there in commercial quantity.

State Labor Commissioner Roye B. Hinkle has started a campaign to urge Missourians to use coal produced in that state. He believes that miners in the state will benefit from the drive. "Missouri's coal ranks with that of other states," Hinkle said, "but there has been little demand for it." "Have you bought your Missouri coal for next winter?" is the question Commissioner Hinkle propounds to all persons he meets or has correspondence with.



**Concrete Tipple, No. 10, Mine, Stearns Coal & Lumber Co.**

This simple but sturdy and relatively incombustible tipple is located at Yamacraw, Ky.

## OHIO

About 1,000 men employed by the Ohio Collieries Co. at Glouster, walked out Aug. 20 as a result of a disagreement with the company officials over the hiring of 750 idle miners living in the Sugar Creek district nearby. The miners employed by the Ohio Collieries Co. desiring to aid their fellow miners, took them into their local and wanted to split the work with them. The company agreed to hire all but the drivers. As a result the men walked out. Lee Hall, president of the Ohio Mine Workers' organization was on the ground and is trying to make a settlement. Four large mines are effected.

Michael Gallagher, of the M. A. Hanna Co., after visiting with President Coolidge at the "summer White House" in Swampscott, Mass., last week told interviewers that he had not talked about the coal situation with the President.

On bids opened recently the Columbus Purchasing Department has awarded a contract to the Hisylvania Coal Co., for 7,000 tons of nut, pea and slack, to be delivered to the Columbus Water Works. This is to be Ohio coal, as was burned in years past, except when other coal was all that was available. The Hisylvania company's bid was $1.24 f.o.b. mines, although there is $1.26 freight rate attached to this. This supply will last until Jan. 1.

Two mines of the Clarkson Coal Co. near St. Clairsville have resumed operations after being closed a week. These mines employ nearly 800 men and other mines in Belmont County resuming during August will bring the total returning to work up to 2,500. The Taplan mine of the Morgan Coal Co. at Bennock, idle three years, is to resume, and the Diamond mine at Neff, idle several months, will be started during the week.

The work of dismantling the equipment of Tropic mine, near Crooksville, has been completed and about 900 acres of coal land has been abandoned. The mine has not been in active operation for more than two years.

The Ohlinger & Wolfe Coal Co. has opened its mine on Brush Fork, which had been closed down for months. The Powell Creek Coal Co., in the same vicinity, also is arranging to open its mine. The announcement is made that both will be operated on the Jacksonville wage scale.

Papers have been filed with the Secretary of State increasing the capital of the Peerless Elkhorn Coal Co., of Columbus, from $150,000 to $200,000 in order to provide capital for the purchase of equipment at the mine located at Betsy Layne, Ky. F. G. Hatton is president and George F. Schwartz is secretary of the company. Both are connected with Hatton, Brown & Co., Inc., of Columbus, and the product is sold through the Hatton-Brown company. The output is about 2,000 tons monthly.

Among the mines in the Crooksville field recently placed in operation are Mine No. 9 of the Sunday Creek Coal Co., at Corning, employing 200 men, and Mine No. 19 of the same company, at Buckingham, employing about 225 men. Mine No. 24 of the Northern Fuel Co., at Jackson, has resumed, giving employment to 100 men, and Mine No. 226 of the George M. Jones Coal Co., at Hollister, employing about 300 men, also has resumed. Mines that are being cleaned up preparatory to operation are: Gosline Coal Co., at New Lexington, to employ 200 men; Mine No. 25 of the Pittsburgh Coal Co., at Chauncey, to employ 250 men, and Mine No. 10 of the Sunday Creek Co., at Mortonville, to employ about 250 men. In addition several small railroad mines between New Lexington and Moxahala have resumed.

## OKLAHOMA

Intrastate rates on coal in Oklahoma have been ordered reduced by the state corporation commission. The new rates take effect Sept. 15. Rates of common carriers for the transportation of coal between points in Oklahoma were ruled "unreasonable and unduly prejudicial" by the commission's findings and new rates were prescribed. Mines were regrouped as to shipping points by the order.

## PENNSYLVANIA

When asked about the huge merger of coal companies in Pennsylvania, the story of which appeared in the New York papers, officials of the Pennsylvania Coal & Coke Co., operating large mines in central Pennsylvania, stated that they had received no information about it and had no intention of entering such a combine.

Operators in central Pennsylvania believe that the district has received its worst blow in years in the decision that has been rendered by the Interstate Commerce Commission establishing joint all-rail rates from West Virginia to points in the Middle Atlantic states. They have not yet determined what action will be taken on the decision. The district joined the northern railroads, including the Pennsylvania and the Baltimore & Ohio, and the associations of operators in Somerset and Westmoreland Counties and in Pittsburgh, in opposing the proposal, during the course of the hearings which concluded on April 4, 1924. The effect of this decision, coming just previous to another anticipated suspension, is obvious. It places West Virginia coal in direct competition with central Pennsylvania throughout the region east of Rochester, N. Y., and Harrisburg, Pa., where, heretofore, the same competition was restricted to points on or near the coast.

The gross tonnage of revenue bituminous coal transported by the Reading Co. during the month of June, 1925, was 1,494,346 as compared with 1,196,126 for June, 1924.

Governor Pinchot has not intimated what part he will play in the event of a strike in the anthracite region. It is believed he will offer his services or at least those of the industrial relations board of the Department of Labor and Industry. The Governor of Pennsylvania has refused to discuss the situation other than to say he is keeping in touch with it through the State Department of Mines and in other ways. Before leaving the Capitol this week he conferred several times with Joseph J. Walsh, Secretary of Mines, who has been one of his official observers at Atlantic City, although he has not been there for the past two weeks.

**Guild Hall, Edgewater Mine, Tennessee Coal, Iron & R.R. Co.**

Edgewater, Ala., is an attractive town and it is only fitting that a place of assembly such as this should be of neat and inviting appearance. Brick, slate and white trimmings assure an effect that is pleasing to the eye.

The time limit for holders of D., L. & W. Coal Sales Co. stock to deposit their certificates in exchange for equal shares of Glen Alden Co. stock with the financial agents of the latter concern in New York City expired at 3 o'clock Aug. 17. According to reports the required number of shares had been deposited to insure carrying out the provisions of the plan for absorption of the sales company by the producing company.

The Pittsburgh Terminal Coal Corporation reports net income of $98,646 for the quarter to June 30, equal, after preferred dividends, to 32c. a share earned on the $12,000,000 common stock outstanding.

Several hundred men and boys who were idle Aug. 12 at the colliery of the Alden Coal Co., Alden Station, returned to their posts the next day. The strike was called when a number of miners refused to enter the mine and work an 8-hr. shift near the scene of the mine fire that has been burning for several months past. The men, it seems, have only been working in short shifts at the scene of the fire but since the fire has been gotten under control the company requested the men to go back to the 8-hr. shift basis.

Flushing of the 8-ft. vein of the Se-Rob Coal Co.'s workings in West Scranton, located in an area which has been devastated by mine caves, was started Aug. 1 by the city in co-operation with the Se-Rob and Glen Alden Coal Companies. The Se-Rob company is doing the inside work which includes the erection of "batteries" in the workings. The Glen Alden company is furnishing machinery and labor for the work on the surface and the city is providing the ashes. The flushing is being supervised by City Mine Cave Engineers Frank Davenport and Frank Gaffney.

Four independent coal and coke companies at Uniontown ordered 600 coke ovens put into blast Aug. 20. They include the Century Coke Co., Puritan Coke Co., Lincoln Coal and Coke Co., and the Rich Hill Coke Co.

It is reported that an additional 1,000 ovens will be ordered in at independent coke operations before Sept. 1. One 6,000-ton order of coke is reported by a large steel company.

## UTAH

Otto Herres, assistant to the vice-president and general manager of the United States Fuel Co., of Salt Lake City, has been promoted to the position of assistant manager of the company, a new office in the organization. Mr. Herres, who is a mining engineer, and for sometime was superintendent of the Hiawatha mine of the company, has been with the United States Fuel Co. about nine years.

R. M. Magraw, general superintendent of the United States Fuel Co., of Salt Lake City, has resigned and will be succeeded by J. B. Forrester, chief engineer of the company and acting general superintendent during Mr. Magraw's recent absence in the East where he went because of ill health. Mr. Magraw had been with the company about 10 years.

## WASHINGTON

To meet the necessity for a larger output of Bellingham coal important improvements costing upwards of $50,000 have just been completed at the mines in Bellingham. These mean an increase of 50 per cent in capacity, bringing the daily coal output up to 1,500 tons from this oldest mine in the state of Washington. Announcement of these improvements was made by John C. Eden, president of the Bellingham Coal mines, who commented particularly on the unique feat of mining engineering which was accomplished in driving an 1,800 ft. slope from both ends and meeting at a central point not an inch out of line. The work was carried to completion by James H. Pascoe, mining engineer, under the direction of E. P. Lucas, mine superintendent.

## WEST VIRGINIA

Four carpenters retimbering the airshaft at the Lochgelly mine of the New River Coal Co., near Fayetteville, were killed Aug. 19 in a fall of 200 ft. down the shaft when the scaffolding on which they were working gave way.

The Jamison Coal & Coke Co. has awarded a contract for forty miners' houses, twenty at mine No. 9 and twenty at No. 8 in the Farmington section.

Five barges of the 30 ordered by the Ohio River Coal Co., the river transportation department of the West Virginia Coal & Coke Co., were delivered Aug. 19. The company's boats and barges will be used on the Ohio

River and the Kanawha River, chiefly between Huntington and Cincinnati, although some of the barges will be used to transport coal from points on the Ohio River.

A new daily leading record was attained recently at the Lowsville mine of the New England Fuel & Transportation Co., when 800 mine cars were loaded.

In the week ended Aug. 15, the mines of northern West Virginia produced 537,150 net tons, which is the largest weekly coal production since any week early in 1923. The maximum weekly production in northern West Virginia is 763,200 net tons.

The Kay Moor mines, which were acquired a short time ago by the New River & Pocahontas Co., have been breaking records recently. June was the banner month with an output of 23,000 tons.

Thomas DeVenny, superintendent of the Portsmouth By-Products Coke Co., with operations in the Williamson field, recently announced that the company would immediately increase its production schedule from 40,000 tons to 60,000 tons a month because of an increase in the demand for steel products manufactured by the American Rolling Mills Co., at Middletown, Ohio, one of the owners of the company.

Approximately one-half of Mine No. 41 of the Bethlehem Mines Corporation, at Barrackville, is rock-dusted and the remainder will be completed within a month. As soon as the work has been finished in this mine rock-dusting will be started at the Dakota mine of the same company.

Although no definite announcement has been made, indications point to the fact that coal not long ago discovered on the C. & I. branch of the Western Maryland near Elkins in a section where it was not known coal existed in commercial quantities, may be developed. Prospecting has been in progress for some time and the fact that those in charge of such work are seeking permanent quarters is taken to mean that development will be undertaken. Surveys are being made on lands where the coal has been discovered. The coal is said to be in the Sewell seam, though the northern West Virginia section is far removed from the New River and Winding Gulf districts where such coal usually is found.

The Arnetteville mine of Robert Talbott & Co., at Arnetteville, Monongalia County, will resume on an open-shop basis early in September. The slope was recently concreted.

An improvement program requiring expenditures of approximately $150,000 has been outlined by the Berwind-White Coal Co. to provide facilities at Kenova for handling coal for river shipments from mines of the company in the Norfolk & Western fields. The company has acquired 50 acres of river front property. Improvements contemplated under the program include the erection of coal docks near the foot of Sixteenth Street on the Ohio River. Construction is to begin at once. Improving the river transportation facilities at Kenova is said to be the forerunner of a plan of the Berwind-White Co. to open up new mines on the Levisa Fork of Big Sandy River, which is served by the Chesapeake & Ohio Ry. The company now operates a number of mines in Mingo and Mercer Counties, and also controls the Pocahontas Consolidated Coal Co.

Several changes have been made in the staff of the Coal River Collieries Co. John Barrett has resigned as sales manager. F. L. Smith, of Cleveland, has been appointed acting sales manager. Col. A. B. McCutcheon, formerly assistant sales manager, has been transferred to the fiscal department, and is working in the St. Louis territory. R. E. Edginton, who has been with the company for some time, is now assistant sales manager.

The Sitnek Coal Mining Co., has awarded a contract to the Fairmont Mining Machinery Co. to install shaker screen and other equipment at the new wooden tipple to be erected by the company at its Katherine mine, at Lumberport.

M. A. Jolliff, Fairmont business man, has purchased 300 acres of undeveloped Pittsburgh coal land in the vicinity of Fairview, from the Kennedy, Price and Yost heirs and from Lon Underwood. The coal land is in the McCurdysville section.

Operations have been resumed at the Raymond City Coal mines in Putnam County, the affairs of the company having been placed in the hands of a receiver. The company has offices in Cincinnati. Approximately 1,500 men are employed at the Raymond City mines.

### WYOMING

The Union Pacific Coal Co. is sponsoring a baseball tournament among eight southern Wyoming teams which will be held in Rock Springs, Aug. 28 to 30. E. R. Jefferis, stores manager, has charge of the tournament, assisted by M. F. Roberts, chief operator of that company's power plant at Rock Springs, and A. Reynolds, a newspaper man.

James Morgan, Secretary of United Mine Workers, District No. 22, Wyoming, and George Young, vice-president, spent a few days in the Rock Springs sector recently conferring with several commercial companies upon labor conditions growing out of the introduction of mechanical loading devices.

### CANADA

Because of the strike menacing the Pennsylvania fields, the price of American anthracite advanced 50c. a ton in Montreal, Aug. 15. The rise is an annual event at this season, but in years past the advance has been made on Sept. 1. From Aug. 15 on the price of American household sizes was $16 a ton instead of $15.50. Careful survey of coal stocks in Montreal leads dealers in American fuels to the opinion that a one-month strike would hardly disturb the local supplies in the fall. Two months' cessation of mining, however, would prove troublesome.

More coal is to be developed on Hat Creek by a company now driving slopes into a hillside tract about 15 miles east of Pavilion on the Pacific Great Eastern Ry. The company, mainly composed of Vancouver men, is drilling the balance of a large acreage, claiming the results indicate one of the biggest deposits in Canada. The two tunnels now driven are 115 ft. and 165 ft. in length.

Welsh anthracite mine owners are anxiously assessing the prospects of a strike on the Pennsylvania coal fields, since they consider it will throw the Canadian market open to them. It was the previous American strike which gave Welsh hard coal its first chance in Canada. and since that time the trade has grown steadily. Senator Lorne Webster, of Montreal, is in London making arrangements for increased supplies of Welsh coal in the event of a United States coal strike. The only fly in the ointment of the Welsh colliery owners is that they have labor troubles of their own. The "red" movement among the hard coal workers has resulted in the last few weeks in great damage to mines by flooding and other causes.

## Traffic

### Belleville Operators Get Rate To St. Louis Suspended

Belleville district coal operators have succeeded in temporarily blocking a freight reduction of 3½c. a ton on the rate to St. Louis, Mo., from other southern Illinois mines. The Interstate Commerce Commission has suspended the new rates announced by the Missouri Pacific, Illinois Central and Chicago & Eastern Illinois lines until Dec. 17, pending an investigation. The Belleville operators insisted that the 22½c. differential in favor of the inner group of mines established in 1920 be maintained. The Belleville rate to St. Louis is $1.16 per ton and from other southern Illinois mines $1.38½c. per ton.

### Freight Traffic Is Heavy

Freight traffic during the first six months this year amounted to 212,509,796,000 net ton miles, according to reports for the first half of the year filed today by the carriers with the Bureau of Railway Economics. This was an increase of 7,782,890,000 net ton miles or 3.8 per cent over the corresponding period last year but a decrease of 12,974,000.000 net ton miles or 5.8 per cent under the corresponding period in 1923, when the volume of freight, measured in net ton miles, was the greatest on record for any corresponding period.

## Obituary

**Charles J. Fischer**, secretary and treasurer of the Underhill Coal Co., died Aug. 18, from complications following an attack of influenza. He had been with the company for more than 30 years and was about 55 years old and unmarried. He left no near relatives but his brother, John A. Fischer, with whom he lived.

## New Companies

**The New North Coal Mining Co.,** 1700 N. 11th St., Springfield, Ill., has been incorporated with a capital of $50,000, to mine and sell coal by Bette Scheibner, Chas. H. Sutton and C. I. Scheibner. Correspondent: B. L. Carton, 205½ S. Sixth St., Springfield, Ill.

**The Whitelye Creek Coal Co.,** of Diliner, Pa., has been organized under the laws of West Virginia with a capital stock of $10,000. Principally interested in the new company are C. H. Burnside, D. W. Lewis, O. C. Hillberry, J. S. Shelton and Charles Jeffries, all of Morgantown, W. Va.

**The Southern Illinois Coal Co.** was incorporated in St. Louis, Mo., the latter part of July, by John S. Steuber, 5,426 Ruskin Street, and others.

**The Wickens-Haas Mining Co.,** Elba, Ohio, has been chartered with an authorized capital of $50,000 to mine and produce coal. Incorporators are John H. Arnold, E. W. Haas, Way Wickens, J. P. Heldman and P. J. Way.

## Industrial Notes

**The Kuhlman Electric Co.,** of Bay City, Mich., has appointed the Stevens Sales Co., of 134 West Second South Street, Salt Lake City, Utah, as district representative for the State of Utah and parts of Idaho and Nevada adjacent to Utah. The Stevens company will handle Kuhlman power, distribution and street-lighting transformers.

**The W. A. Jones Foundry & Machine Co.,** Chicago, has inaugurated a new sales arrangement for Minneapolis territory with an office at 614 Builders Exchange, F. S. Van Bergen, district sales manager. The territory covered includes all of Minnesota, North Dakota and South Dakota, also parts of Iowa and Wisconsin which adjoin Minnesota.

## Coming Meetings

**American Institute of Mining and Metallurgical Engineers.** 132d meeting, at Salt Lake City, Utah, Aug. 31 to Sept. 3. Secretary, H. Foster Bain, 29 West 39th St., New York City.

**Oklahoma Coal Operators' Association.** Annual meeting, Sept. 10 at McAlester, Okla. Secretary, A. C. Casey, McAlester, Okla.

**New York State Coal Merchants' Association.** Annual convention, Sept. 10-12, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**Association of Iron and Steel Electrical Engineers.** Annual meeting at Philadelphia, Pa., Sept. 14-19. Secretary, John F. Kelly, Empire Bldg., Pittsburgh, Pa.

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries,** Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**American Welding Society.** Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering,** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

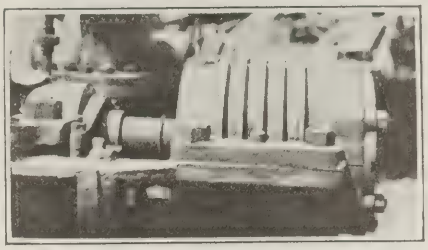
# New Equipment

## Roller Bearings Function In Centrifugal Pump

One of the main difficulties with the operation of centrifugal pumps has been to obtain successful operation of the bearing on the suction end of the casing. For the first time rollers have been used in this important bearing with good results. In all types of centrifugal pumps, regardless of the type of bearing, an end thrust must be taken care of. Various types of bearings other than rollers have been designed to take this end thrust, and although some have been successful, these types have, under certain conditions, given considerable trouble.

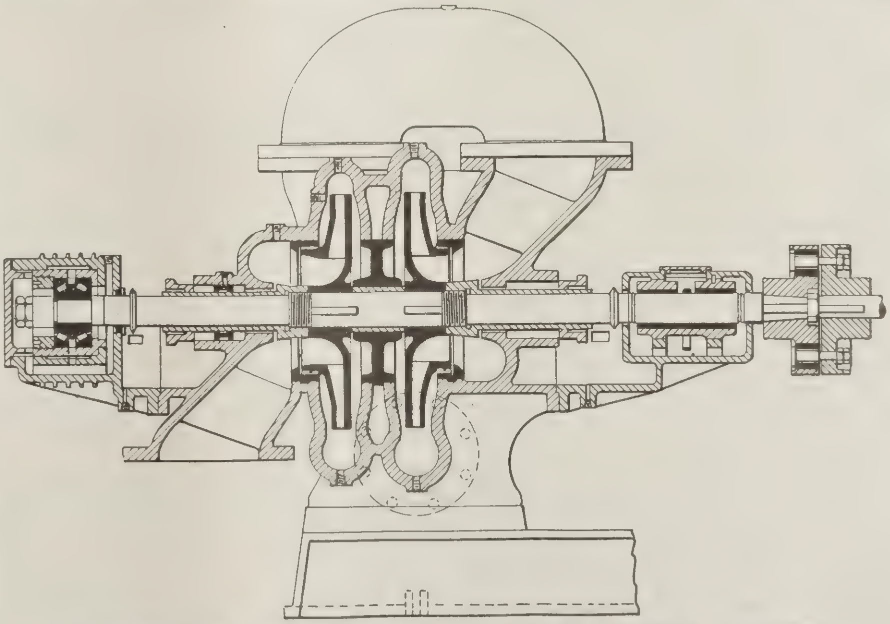
With pumps used for handling acidulous mine water the difficulty is usually magnified. Most of the bearings previously used have been cooled by water usually taken from one stage of the pump and conducted to a jacket around the bearing. With such a bearing an arrangement has to be made in the pipe connection between the pump and water jacket to prevent air from entering the casing, when the pump is being primed ready for operation. A ball check valve is often placed in the water line but soon becomes corroded. Besides, the spillage of water around the water jacket is usually unsightly. Where the water contains much acid the water-feed pipe in time corrodes or becomes blocked, even if the pipe is of brass.

To overcome these difficulties, the Goyne Pump Co., of Ashland, Pa., in developing its new line of centrifugal pumps, has incorporated in its pumping units an end-thrust bearing which has proved to be remarkably successful. It consists of a double Timken roller bearing arranged to take end thrusts in either direction. One of the accompanying figures shows an outline of a pump and how the bearing is mounted. Instead of being lubricated with grease, as is common with most bearings of this type, this bearing is lubricated with oil. The oil jacket is arranged so that there is practically no leakage.


**Inclosed End-Thrust Bearing**

Instead of being lubricated with grease this bearing runs in oil. Fins on the outside of the housing aid in dissipating heat.

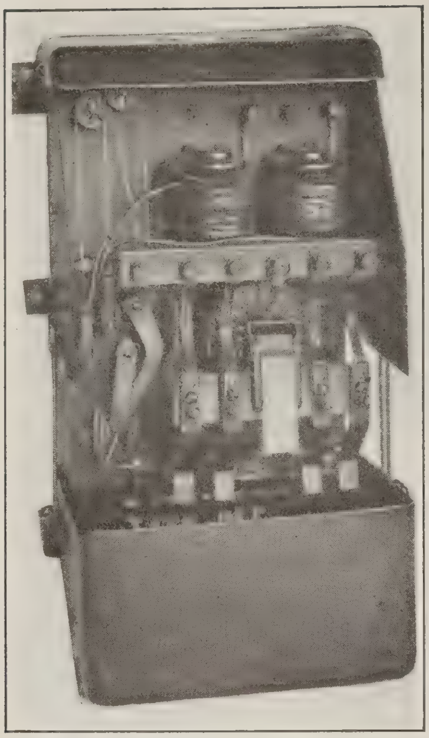
The other illustration shows the housing around the bearing. The ribs or fins were placed on the bearing to aid in dissipating any heat which might be generated. The success obtained by bearings of this type on centrifugal pumps has been such that the bearing is considered one of the most important recent improvements on centrifugal pumping units.


**Bronze Type Roller Bearing Pump with Back-to-Back Impellers**

Although this pump is well balanced, because the impellers are arranged back-to-back, a heavy thrust bearing has been added. This Timken tapered bearing has now been made a standard feature on this type pump.

## Oil Starting Switch Protects Induction Motors

The Electric Controller & Manufacturing Co. has just announced a new push button operated oil switch for starting squirrel-cage induction motors directly across the line. This device, known as the type ZO starting switch,



**Switch Gives Automatic Protection**

All conditions of overload, phase failure and no voltage are taken care of by this switch.

is controlled from one or more push button stations which may be located at convenient points. The starting switch is provided with four pairs of heavy contact fingers three of which handle the main line in the case of three-phase or two-phase three-wire motors, and the fourth pair handles the control circuit to the push button when the switch is arranged for no-voltage protection. In the case of two-phase four-wire switches all four lines are disconnected in the "off" position when the switch is wired for no-voltage release. When wired for no-voltage protection one line runs directly to the motor.

The starting switch uses an accurate inverse time element temperature overload device which consists of two alloy wires, each attached at one end to an adjusting screw, and at the other end to a multiplying lever which operates a quick make-and-break contact circuit. The wire is connected across the secondary of a small current transformer. The gage of the expansion wire and the winding of the secondary of the transformer remains the same regardless of the horsepower ratings or voltage of the switch. The size wire and number of turns of the primary is proportioned to suit the rating of the motor.

An increase in current or an overload on the motor produces an increase in the current flowing in the secondary circuit, this causes the expansion wires to lengthen and, if the overload is severe enough or is of sufficient duration the wires lengthen sufficiently to trip the overload relay causing the starting switch to open and disconnect the motor from the line. The wires then cool and the overload relay contact automatically resets, if the switch is wired for no-voltage protection. A hand reset of the overload device by means of a small button projecting through the case is provided on switches arranged for no-voltage release.

The overload device protects the motor against injury due to phase failure. If an attempt is made to start the motor with one phase open, the switch will open in less than five seconds, and the manufacturer states that it is impossible to burn out a motor due to phase failure or overloading when protected by this starting switch.

The oil tank is drawn from a single piece of sheet steel and cannot leak. The tank latches are arranged so that the tank can be lowered and left suspended to catch oil dripping from the contacts while the switch is being inspected.

On account of creepage of oil due to capillary attraction and from splashing when the magnet surfaces engage, all moving parts of the switch are kept lubricated, which protects the switch from corrosion when installed in corrosive atmospheres. The switch is arranged for conduit connection and is compact.

## Trade Literature

**Classification and Washing.** The Dorr Co., New York City. Bulletin 11. Pp. 20; 6 x 9 in.; illustrated. Discusses the general subject of classification and describes its application in many industrial processes.

**Zeolite Water Softener.** Graver Corporation, East Chicago, Ind. Bulletin 509. Pp. 7; 8½ x 11 in.; illustrated. The advantages claimed for this softener are the rapidity with which the capacity of the zeolite can be utilized and the very short installation period.

The Crouse-Hinds Co., Syracuse, N. Y., has issued a folder illustrating its **Screw Cover Junction Condulets.**

**Conveying and Storage Equipment.** The Stearns Conveyor Co., Cleveland, Ohio. Pp. 8; 6 x 9 in.; illustrated. Describes the roller-bearing troughing idler pulley, with high-pressure grease lubrication; roller-bearing return roller; "Holotile" storage bin and self-propelled self-reversing belt-tripper.

**Messiter Conveyor Scales.** The Stearns Conveyor Co., Cleveland, Ohio. Pp. 8; 6 x 9 in.; illustrated. Describes this scale for weighing material while in process of being conveyed.

The Griscom-Russell Co., New York City, has issued a leaflet on its new **Stratton Separator,** which has been improved with a larger helical path and a spatter cap on the outlet pipe to increase the separating efficiency. The leaflet is No. 408.

Detroit Stoker Co., Detroit, Mich., has issued Bulletin No. 1018, of 32 pp., describing its **Stokers of the Single Retort Type.**

**Allis Adjustable Delivery Motor Drive for Alternating Current.** The Louis Allis Co., Milwaukee, Wis. Pp. 7; 8x10½ in.; illustrated. Describes the multi-speed motor, control drum, contactor panels and principle of operation.

**The Automatic Operation of Centrifugal Pumps.** Barrett, Haentjens & Co., Hazleton, Pa. Pp. 24; 8½x11 in.; illustrated. Describes the methods used to make centrifugal pumps start, stop and run without constant attention.

**Everything for Mine and Industrial Safety.** Mine Safety Appliances Co., Pittsburgh, Pa. Catalog No. 3. Pp. 126; 7¾x10½ in.; illustrated. A very complete book describing safety appliances used in and around the mines.

The L. J. Wing Co., New York City, has issued Bulletin No. 77, of 32 pp., describing its **Turbine Blowers.** This contains some new information not included in the previous bulletin, including data relative to the application of the blowers to stokers and graphic representation of their use for hand-fired boilers.

## Publications Received

**Analyses of Utah Coals.** Bureau of Mines, Washington, D. C. Technical paper 345. Pp. 90; 6x9 in.; tables. Prepared under a co-operative agreement between the U. S. Bureau of Mines and the Industrial Commission of Utah. Besides the analyses a brief description of the geologic structure of the coal fields, a summary of the mining methods used, uses and markets of the coal and a statement of production by counties as compiled by the U. S. Geological Survey, are included.

**Coal Losses in Alabama,** by J. J. Forbes, School of Mines, University of Alabama, in co-operation with U. S. Bureau of Mines and U. S. Coal Commission. Bulletin No. 1. Pp. 52; 6x9 in.; illustrated.

**Year Book American Engineering Standards Committee,** 1925, 29 West 39th St., N. Y. City. Pp. 72; 8x10 in.

**Our World Trade,** January-March, 1925. Foreign Commerce Department, Chamber of Commerce of the United States, Washington, D. C. Pp. 15; 6x9 in.; tables. Value and volume of principal exports and imports between United States and chief foreign markets are included.

**Investigation of Antennae by Means of Models,** by J. Tykocinski-Tykociner. Engineering Experiment Station, University of Illinois, Urbana, Ill. Bulletin No. 147. Pp. 60; 6x9 in.; illustrated. Discusses the theoretical considerations involved in the use of such models.

**The Coal Resources of New South Wales,** by the Staff of the Geological Survey, New South Wales. Pp. 154; 6x9 in.; illustrated. Parts I and II; the former covering geology, and the second part, coal analyses and byproducts.

**Thirtieth Annual Report of the Mineral Resources of Tennessee.** Department of Labor, Division of Mines, Nashville, Tenn. Pp. 148; 6x9 in.; illustrated.

**Home Environment and Employment Opportunities of Women in Coal-Mine Workers' Families.** Women's Bureau, U. S. Dept. of Labor, Washington, D. C. Bulletin No. 45. Pp. 61; 6x9 in.; tables.

**Small Hose Streams for Fighting Mine Fires,** by L. D. Tracy and R. W. Hendricks. Bureau of Mines, Washington, D. C. This paper represents work done under a co-operative agreement between the U. S. Bureau of Mines, the State Geological Survey Division of the State of Illinois and the Engineering Experiment Station of the University of Illinois. Technical paper 330. Pp. 23; 6 x 9 in.; illustrated.

**Permissible Explosives, Mining Equipment and Rescue Apparatus Approved Prior to Jan. 1, 1925,** by J. E. Crawshaw, L. C. Ilsley, D. J. Parker and A. C. Fieldner, Bureau of Mines, Washington, D. C. Technical paper 376. Pp. 35, 6 x 9 in.; tables.

**Cleaning Tests on Central Illinois Coal,** by Thomas Fraser and H. F. Yancey. This paper represents work done under a co-operative agreement between the U. S. Bureau of Mines, State Geological Survey Division of the State of Illinois and the Engineering Experiment Station of the University of Illinois. Technical paper 361. Pp. 23; 6 x 9 in.; illustrated. The data reported in this paper indicated what results may reasonably be expected from washing the coal mined in this field, in so far as the samples tested represent average conditions.

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# COAL AGE

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Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. Dawson Hall
*Engineering Editor*

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## The Public and the Anthracite Strike

THE SILENCE OF SUSPENSION has settled down upon the anthracite mining districts of northeastern Pennsylvania. The frantic peace efforts of the business men of the region, who must become the unwilling financiers of the contest, have gone the way of the conciliatory words of the producers put forth after President John L. Lewis of the United Mine Workers had returned to Atlantic City in a thunder of ultimatums. Barring intervention, victory is promised to the side with the longest purse and the greatest endurance—and the odds, under such conditions, are not chalked up against the miners at the figure the public commonly thinks.

A shrewder psychologist than his opponents, Mr. Lewis was quick to seize the opportunity to use the efforts of the committee which he had insulted in his first comments on the activities of the business men as a medium for the promulgation of some effective propaganda designed to rehabilitate the union cause in the public eye. The operators, displaying more intellectual honesty than finesse, passed by the opportunity to reply to Mr. Lewis in kind. The union leader was left dictating terms of resumption which the operators could accept only with their tongues in their cheeks and they could not bring themselves to reopen negotiations on a basis of hypocrisy.

Although the public now moans that the miners and the operators have completely disregarded its interests in the controversy, the fact is that the public, by its earlier inaction, has definitely stated its position. The operators entered the wage conferences with two announced objectives—arbitration of all questions upon which the conferees could reach no agreement so that a suspension might be avoided and opposition to any changes which would increase the cost of coal to the consumer. To neither proposal would the miners give their assent. To the first proposal they voiced a most vigorous, not to say bitter, dissent. After trotting out a few old friends, such as freight rates, profits and the hazards of the industry, the miners made it plain that they would not agree to the stopping of the steady advance of wages.

The public was frankly enamoured with the proposal to check increases in fuel prices. It seemed, for the most part, strangely indifferent to the suggestion to avoid a suspension. Its attitude, reflected in the nonchalance in evidence at Washington and Swampscott, was one of "let 'em fight it out; we should worry." When the public and the administration might have thrown the weight of their influence on the side of arbitration as public protection against an interruption to the production of hard coal, both were silent.

Since the public, in the weeks during which the operators and miners were meeting at Atlantic City elected to adopt a "hands off" policy, the industry today has the right to demand that the public and the administration at Washington continue that policy of noninterference. The pressure that in times past has compelled the operators to agree to settlements framed in a spirit of fear should not be exerted. Friendly offices, of course, are always in order, but the public has surrendered whatever right it may have had to dictate terms. A sense of fair play should keep Washington as calm when excited New England Congressmen descend upon it with the cry of "peace at any price" as it is today. The public acted as if it knew what it wanted: let it not later complain of the bargain.

## Don't Hamstring the Bureau of Mines

THE LONG DELAY in choosing a director for the Bureau of Mines has created a situation in Washington that merits some attention from the coal industry. The proposal has been put forth that this bureau and the Bureau of Standards be directed by the same executive. Opposition to this should rise at once from men and organizations interested in coal. The Bureau of Standards is a laboratory engaged largely in experiments of a physical or chemical character. Some of these experiments have a direct application to mining but these are by no means the controlling activities of the Bureau.

The Bureau of Mines is performing and must continue to perform a valuable service to the coal industry as well as to other industrial groups whose business interests are bound up with the nation's mineral resources, and it certainly should not be made subservient to or dominated by any other government bureau. The industry should make it clear to everybody in Washington that it has little patience with bureau rivalry or personal ambitions.

An opportunity now exists to centralize the mining activities of the federal government where there is a good chance to have it made a grand division of a department with recognition of mining in the department's title. Now that it is settled that the Bureau of Mines is to be under the jurisdiction of a friendly secretary, it is felt that the industry has everything to gain and nothing to lose by strengthening and building up its service.

## Time to Make Repairs

NOW THAT THE anthracite industry is shut down, many opportunities are presented for improvements. When things are going strong little time is available for planning changes which will result in better operation, but during a suspension the officials and engineers will have a chance to look around and survey the properties with this idea in mind.

Some will say that these men will be supervising the care of pumps, hoists, etc. or keeping the important equipment in repair and thus will find little time to do constructive work. However, isn't this an occasion to plan for the future? These men will now be out in the field where they will be able to obtain for themselves first-hand information of the conditions surrounding the places and systems that should be improved.

But aside from these men there are always many others who can be employed repairing apparatus which, during the great push before the suspension, was taxed up to or even beyond its limit. Even in the ordinary work of taking care of equipment during the suspension, occasions will be found to do the work better and thus put the equipment in good condition for resumption of activities. For example, a storage battery on a locomotive rarely receives proper attention during operating periods, but now it can be replenished with acid and charged so as to bring it back to good condition. Then again, consider the mine locomotives: nearly every one of them has something that should be repaired; headlights, brake shoes and bearings could all be repaired or at least adjusted.

With the resumption of work, regardless of the results of the present wage controversy, the mines must in future be operated so as to keep the selling price of coal as low as possible. Therefore, the day has arrived to take time by the forelock.

## Make Haste Slowly

OF ALL REVEALING things few are more interesting than the slow "movie" that shows us motions slowed down to meet the imperfections of the human eye. Those motions could not in most cases be duplicated at such speed. Gravity and muscular effort work more rapidly, so that the screen picture is an impossible one.

This furnishes an illustration in the art of modern mining. A few companies are trying to test roof action with certain specific conditions of operation and are using the ordinary slow methods of loading coal in order that they may discover what will be the roof action with those same conditions and with more rapid loading methods. But with such experiments they can get only misleading results. The slow "movie" represents nothing truly. Something essentially different would happen if we tried to imitate those motions at such slow speed. Similarly the roof undermined slowly will not act as it would if speedily undermined.

Nothing is more certain than that roof action is complicated in the extreme. It is a progressive series of movements, and they take place in a serial order. One action must wait for another and all of them take a certain length of time. This is no theory. Experience has shown that speed in operation modifies roof action profoundly and what would be a failure with slow extraction is a complete success when coal is removed with speed.

## Personnel Building

OPPORTUNITIES for improving the personnel at the mines are offered by these lean times in industry, and they should be used whenever possible. Men who are habitual risk takers, should be let out of the organization. The bootlegger, the man who is a bad citizen or who has a record for working short time should be dropped when any men are let out.

An industry is no better than its personnel. A business that has the record of having rough characters working in it does not stand well with the public. If the coal industry had a better class of miners, the operators would be in better favor and have fewer strikes. Some men may argue that they will get more coal from roughnecks than from men with less of fire in their blood, but those who act on that principle will find before long that all their men will be of that class.

Selective employment is the basis of success. A big burly, rough man may be a good tonnage producer, but he may, nevertheless, destroy the morale of the personnel and so be of more harm than good. When a man finds that standing to order is necessary to retain his job in a mining village he will straighten up and the town will be made endurable to the peaceable citizen and his wife. If the roughneck finds the atmosphere restraining and displeasing let him take the open road. The coal industry is judged by the men it hires and by their wives and families.

## Soft Coal's Job

THERE IS A CERTAIN pleasure in turning from anthracite's troubles to a contemplation of soft coal's service to the country. The harvest is on. The nation is filling its elevators, its warehouses, its storage yards. It is advancing into the autumn with a confidence born of economic virility. One excellent indication of this condition is found in the most recent Car Service Division report from the American Railway Association.

For the fifth consecutive week, loading of revenue freight exceeded one million cars a week, the total for the week ended Aug. 15 having been 1,064,793 cars. This could mean nothing less than business health for the country. The number of cars loaded with revenue freight up to date this year has exceeded all previous years and the week of Aug. 15 was the greatest week of 1925. It was 111,385 cars in excess of the corresponding week last year and 24,855 cars ahead of 1923.

The movement of coal to market is, of course, important in these figures. Coal loading for the week totaled 190,979 cars which was 45,716 cars greater than the same week a year ago and 1,800 cars over 1923. However, it is not coal alone that swells the freight movement to its unwonted flood. Livestock loadings were 2,153 cars ahead of last year. Less than carload freight totaled 259,210 cars which exceeded last year by 17,272 cars and two years ago by 17,922 cars. Here is a sure indication of business strength. Miscellaneous freight was 33,934 cars ahead of 1924 and 30,308 cars in excess of 1923. And so it goes.

All this heavy flow of the nation's freight is moved by soft coal sold to the railroads at an average price low enough to satisfy anyone barring possibly the hard-boiled railroad coal buyer whose profession it is to be absolutely insatiable. The tremendous volume of manufactures represented by the freight flood was produced with the aid of coal which has been lower in price this summer in proportion to the cost of production than ever before—this week the *Coal Age* national average is but $2.10 even after the autumn rise had set in. Coal's service deeply effects the whole economic fabric of the land and, for once, coal cannot be petulantly blamed for chaos in industry generally, for there is no chaos.

Soft coal is abundantly available at low cost as the country begins another winter and the railroads are admirably equipped to deliver it. We can only hope that John Lewis' blind lust for combat will not impel him to risk calling his men out of bituminous mines this fall for punitive purposes or for any other reason. Soft coal ought not to be deprived by the miners of its full opportunity to continue serving America.

# Utah Storms Burst Futilely About Meeting of Rocky Mountain Coal Mining Institute

## Washouts Do Not Upset Program at Price—Engineers and Executives Discuss Loading Machines, Conveyors, Rock Dust and Other Technical Subjects Important to the Industry

**By R. Dawson Hall**
Engineering Editor of *Coal Age*

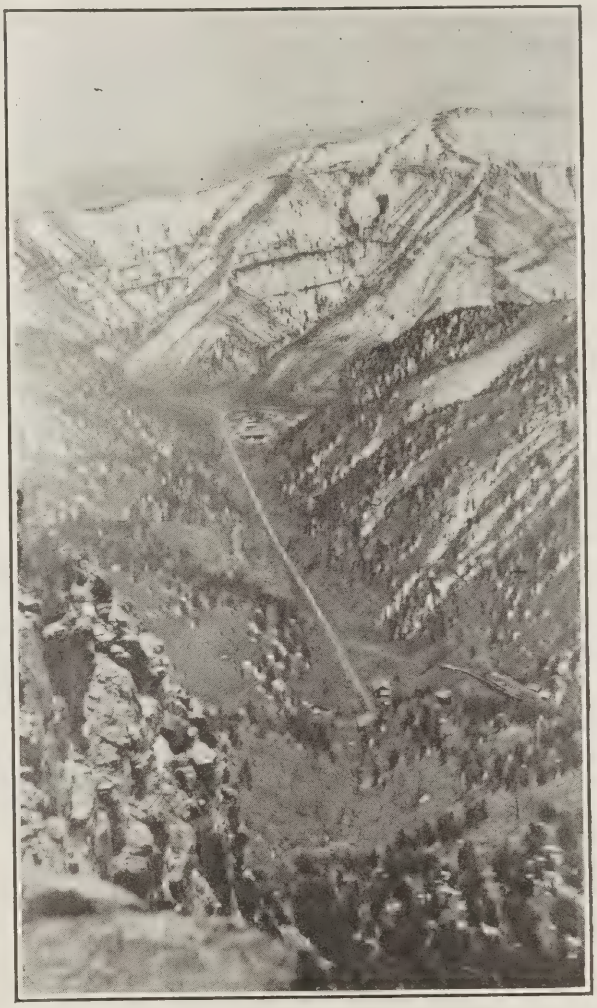
TYPICAL Utah August storms with half-hour floods ruining roads and disrupting railroad service did not stop the summer meeting of the Rocky Mountain Coal Mining Institute at Price, Utah, Aug. 26, 27 and 28. Engineers, executives, and other coal mining men including a good many representatives of machinery and equipment companies assembled in large number and made the town a busy place with their discussions, their dinners and their group goings and comings to nearby mines which have made Carbon County noteworthy in coal production. Rock dusting, machine loading and the use of underground conveyors were the main subjects considered, but these by no means filled the program.

Despite the absence of J. B. Marks, the president, who telegraphed that he could not be present because of extreme pressure of business, the Institute measured this year fully up to its former records, a large crowd having gathered in the Star Theater when the meeting was opened by Benedict Shubart the secretary. George B. Pryde presided. The slides for the paper on "Electric Shotfiring" not having been made and the paper itself having been delayed in the mails, the article by Robert Williams, Jr. could not be presented. A film made by the E. I. duPont de Nemours Co., entitled "The Story of Dynamite" was shown by A. E. Anderson.

J. M. Jennings described the New Hiawatha tipple of the United States Fuel Co. which the Institute planned to visit in the afternoon. During the night the road between Price and Hiawatha had been washed out, but as the weather was propitious in the morning the road commissioners managed to provide an easy detour down into and up out of the arroyo where the washout occurred. The trip to Hiawatha over the desert was pleasantly accomplished but the smiling little village was barely reached when a heavy storm broke. However, the guests were afforded a fine spread in the amusement hall, and after it was over they visited the tipple which is one of the finest in the West.

In the evening the visitors paraded the street from the Savoy Hotel to the Tabernacle of the Latter Day Saints where an informal banquet in the basement of the building was addressed by the mayor of Price and several leading mining men, the entrance to the banquet hall being decorated to look like a mine and the passageways being labeled like its underground workings. On the way one of the distinguished guests was seized and treated to first-aid, the ambulance being requisitioned to carry him to his destination. The evening closed with a ball in the City Hall.

At the morning meeting of Thursday A. W. Dickinson presented an interesting review of the many forms of loading machines, including the Hamilton machine, the Jeffrey entry machine, the O'Toole and McKinley cutting and loading machines, the Thew "S" loader, the Joy loaders 4, 5 and 6 B.U., the Coloder, the Myers Whaley, the Riley, the Stockley, the Burnell, the Goodman Hydraulic loader, the Goodman types A and B scrapers, the Ace, the MacEachen and the Jeffrey Pitcar loaders. He also gave much information regarding the Movor, Fairmont, Echoff, Link-Belt, and Jeffrey sectional conveyors and the Jeffrey 44-A conveyor loader. Clearances, lengths and power required were given for each loading machine.



**In the Coal Wilds of Utah**

Looking down the incline from the Standardville mine in bottom foreground to the town and tipple in the middle ground at the foot of the snowy mountain.

Mr. Dickinson then read Glen A. Knox's paper on the operations at the Sweetwater mine of the Gunn-Quealy Coal Co., where conveyors have been used with great success. Modifications of longwall are being used. At first the faces were made at an angle about half way between the strike and pitch, the conveyors proceeding down the pitch as the cutting progressed. Later the faces were made at a similar angle, but the main conveyors were moved along the strike. Finally the faces were aligned with the pitch, the main conveyors being laid in the direction of the strike.

At the conclusion of Mr. Knox's paper O. G. Sharrer read an interesting account of his experiences with mechanical loaders in central Pennsylvania, describing his early operation of Joy loaders while with the Pennsylvania Coal Co., declaring that there were no particular advantages in a complicated track system as the expense of laying and repairing eats up the profits that might accrue due to greater speed in handling cars. He also described experiments with scrapers where the coal was only 30 in. thick. Difficulties arose because the method of operation could not be modified to suit the scraper, because the mines worked irregularly and because a scale could not be obtained for this type of work. Other tests of the Myers-Whaley and Jeffrey heading machines were described. The V-system of West Virginia did not seem suitable for Pennsylvania conditions, according to Mr. Sharrer.

Mr. Sharrer said that too many men should not be put on the job at first, because if the number is reduced later misunderstandings arise. He declared that it was difficult to use enough water to prevent the creation of excessive dust. In his opinion the haulage problem was not the principal difficulty and that loaders were so erratic in performance that it would not pay to give maximum haulage facilities till it was made clear that the loading equipment would work without delays other than those arising from haulage. With all Mr. Sharrer's criticism he was confident that the future of the machine loader was assured, and that success would be achieved "in the next few years."

In the haste to reach the lunch provided by the Spring Canyon Coal Co., the address by G. A. Murphy, general manager of the company was omitted.

### Discuss Mechanical Loading

In the evening a session was held in the Carbon County High School at which the articles on mechanical loading were exhaustively discussed. Benedict Shubart favored the use of metal conveyors and said that belt conveyors, though much used in England, were almost unknown for face operations in the United States. He regarded the H. C. Frick Coke Co. belt at Colonial Mines as something more than mere main haulage. It corresponded more nearly to railroad transportation and the continued operation of the belt without injury was largely due to the fact that the coal was not being deposited on the belt at all sorts of angles but was being carried forward without disturbance on its flat surfaces.

John Forrester said that, in his belief, the reason why metal conveyors were preferred was because they could be lengthened and shortened at pleasure and so they could be operated with greater flexibility than belt conveyors. W. C. Holman said that to obviate brushing where the coal was low the Phelps Dodge Co. was using two Jeffrey belt conveyors in tandem.

The time-honored question as to whether the introduction of longwall and conveyors had resulted in a larger percentage of the smaller sizes of coal was introduced and J. M. Jennings said that Mr. Knox was getting unusually large coal with conveyors, as long as he sought to get the larger sizes. Later the market required smaller coal and accordingly he had it broken up smaller with heavier shooting.

Otto Herres said that with longwall working such as that in operation at Sweetwater the coal would be broken up into smaller sizes due to the crush. George B. Pryde took a different view. Longwall was not as destructive to the integrity of coal as shooting from the solid and that was the practice at Sweetwater. He would say that the present methods had not increased the percentage of slack.

The discussion then shifted to hazards. Mr. Dickinson said there was an increase of dust in machine loading, especially with the McKinley loading and cutting machine which was extremely dusty. Mr. Forrester declared that more dust was to be expected because, when loading by machine, the coal is shot harder in order to make it easier for the machine to pick it up. However, he believed there was less hazard because, with the closer supervision possible by reason of the concentration of operations, it was easy to keep down the dust.

### Concentration Has Dangers

Eugene McAuliffe believed that machine loading was more dusty than hand loading. D. Harrington thought the hazards greatly increased by modern methods of loading. Not only did the methods increase the quantity of dust but they also increased the rapidity of mining and the increased quantity of coal broken down caused large quantities of gas to be released. The number of motors on loading machines and conveyors greatly added to the hazard. No more dangerous places could be found for such motors than at the working face where there were excessive quantities of pure coal dust and where there was more gas than at any other point. In reply to Mr. Herres' suggestion that machine loading was safer because of the concentration and the possibility of close supervision that went with such concentration, Mr. Harrington said that he believed concentration likely to prove a source of danger rather than its preventive. At Dolomite, Ala., a number of men had assembled and as a result what was a relatively small explosion killed a large number of men. Concentration, he said, is not without its dangers in mine operation.

To Mr. McAuliffe these arguments did not appeal. Few places, he averred, were better sprinkled than the working places in a machine-loading mine. There was more supervision there, and there could be more ventilation. In this belief the machine loading would increase safety by that very concentration that Mr. Harrington deplored.

At the close of this discussion on the safety of mechanical loading D. Harrington read an article on rock dusting practice in the Rocky Mountain region and L. C. Clare one on "Mudite's Relation to Nature." Mr. Harrington said that owing to a lack of funds the U. S. Bureau of Mines had made no experiments in the Bruceton mine in the use of mudite.

H. A. Wylan, of Superior, Wyo., said that the wetting down of empty cars was more important than the sprinkling of loads. Cars should be sprinkled when entering the mine as well as when leaving them. The "empty" car distributed more dust and finer dust than the loaded car.

E. K. Judd said that though gypsum had been found disposed to fall off the ribs when being applied, he believed that its merits as an inert material should not be overlooked because it absorbed heat rapidly and that seemed a primary quality in a good explosion-preventive dust. The Bureau of Mines had made endeavors to ascertain the temperatures reached momentarily in mine explosions. Gold and silver foil were suspended in the Bruceton experimental mine. The first was melted only once and the second frequently was found to be fused, showing that the temperature was sometimes above 1,832 deg. F.

The specific heats of earthy bodies used for rock dusting range generally from 0.19 to 0.22. Taking the larger figure and assuming the temperature to rise 1,765 deg. the number of British thermal units absorbed will be 388 per pound of dust. Dry gypsum contains 21 per cent of water of constitution which, at as low a temperature as 250 deg. F., begins to be expelled. Let us assume that the whole of the water of constitution is drawn off at 250 deg. F. Then the heat absorbed in British thermal units will be: 47 in raising the temperature of the gypsum to 250 deg. F., 48 in decomposition, 203 in evaporation, 237 in heating the calcium sulphate to the temperature of 1,832 deg. and 166 in raising the steam to the same temperature—a total of 701 B.t.u.

Limestone has also been regarded with favor. Does not limestone also break up under heat? Unfortunately the temperature at which that dissociation occurs is so great that it is doubtful if the action ever takes place during an explosion and much more doubtful whether, if it should occur, it would progress in any great measure. Only at 1,700 deg. F. and under exceptionally favorable circumstances does the limestone begin to lose carbon dioxide. Prior to that time 352 B.t.u. are absorbed, the decomposition adds to this 765 B.t.u. and the heating of the products to 1,832 deg. F. adds to the heat absorption 30 B.t.u., making a total of 1,138 B.t.u. This is an impressive figure 1,138 as against 388 for the indecomposable bodies and 701 for gypsum.

Mr. Judd believed, however, that under actual conditions the limestone would absorb no more heat than any indecomposable dust such as silica sand, leucite or shale and that gypsum was the more desirable material. Gypsum might make ideal tamping. The experiments being made by J. K. Mabbs up to the present showed that gypsum was by far the least absorbent of moisture of any of the inert bodies tested, that limestones varied greatly, some being slightly more absorbent than gypsum and some far and away more absorbent. Silica sand was quite highly disposed to take up moisture.

On Friday morning a paper on "Domestic Fuel Stokers," written by Joseph Harrington, was read by the secretary of the Institute, Benedict Shubart. The author asserted that much cheaper coal could be used with a stoker and that about 25 per cent less coal would be needed for the same purpose. The stoker would also be more flexible, raising the temperature rapidly if desired and holding that temperature at any level which might seem necessary. With such a mechanism for continuous feeding it would be possible to eliminate smoke when burning the smokiest of fuels.

Mr. Herres said that the Pacific Coast Coal Co. had a small stoker furnace that was more simple than the Harrington. Pulverized coal equipment was being adapted to use in apartment houses. Two other stokers were mentioned, one developed, but not being commercially manufactured, by Mr. Garrison, the state engineer of Utah, who resides in Salt Lake City, and one which Mr. Mageath, of Omaha, Neb., has been manufacturing. Mr. McAuliffe said that Mr. Mageath recommended his small unit only for Rock Springs coal.

A short discussion on rock dusting followed, Mr. Harrington declaring that nearly all the operators were dusting too lightly for safety. With Utah coal it was necessary to have the dust in the roadways 75 per cent inert matter. R. M. Magraw stated that on inquiry at the Bureau of Mines he had been told that about 5 tons of dust should be used for 1,000 tons of output.

**Hiawatha Has a Fine Tipple**

The Institute journeyed from Price to Hiawatha in spite of storms and washed-out roads. This plant, of the United States Fuel Co., one of Utah's best, was visited. It receives coal from an incline on which 16-car trips operate. It can size, clean and load 400 tons an hour. Nearly 20 sizes are within the range of the horizontal screens.

T. C. Harvey then read a brief description of the Columbia tipple and mine. The secretary announced that detours had been arranged around three bad washouts between Columbia and Price and that cars were ready to take the visitors to the former place where an elaborate luncheon had been prepared by the Columbia Steel Co. At this mine all the coal was being crushed, the picking tables not being in operation when the visitors went through the tipple. The coal at this mine and at Sunnyside does not have an equal quantity of resin with that of Hiawatha and Spring Canyon; in fact it is believed by some to be part of a different seam. After lunch the automobiles returned to Price after a short visit to the historic tipple at Sunnyside.

On one occasion when the Sunnyside tipple burned, the smelters of almost the entire West were deprived of fuel. Ten days after the fire the tipple was re-erected and was crushing coal as merrily as ever, the Denver & Rio Grande R.R. having disrupted its service to get the material from Salt Lake City to Sunnyside. On another occasion a shovel got into the disintegrator and the sparks that resulted though merely the result of mechanical violence served to explode the dust. Evidences of the burning of the shales due to the crop fires in the coal should be seen near the tipple. This was the Institute's last mine visit.

# West Tries Everything in Rock Dusting

**By D. Harrington**
Consulting Engineer, Salt Lake City, Utah

PRACTICALLY every method of rock dusting coal mines is now used in the Rocky Mountain states. Experience and strict mining safety laws have driven mining men to this form of explosion prevention—and most of them are convinced water is also a necessary safeguard. They have tried all the dusting processes known and it is interesting to note that the most successful have turned clear back to the practice of 1916 as it was developed, beginning in 1912, at the Delagua mine of the Victor-American Fuel Co. in Colorado. This was the first extensively rock-dusted coal operation in this country.

In 1916, while in the Bureau of Mines service, I made an underground study and a report to the Bureau on this mine. There were then some 10 miles of entry in that mine which had been kept well rock dusted for at least four years. The dust used was "adobe" or surface soil screened from sweepings of the dry surface wagon roads through a screen with ⅛-in. openings, the dust giving about 20 per cent through 200 mesh and about 10 per cent of approximately ⅛ in. size. The material was collected during dry weather by contract at $1 per ton (sacked) and was accumulated in summer and stored for winter and spring use.

The dust was scattered through haulage entries by hand or by an electrically operated blower and was held on shelves along the ribs or between and on timber caps with from ¼ in. to 2 in. thickness of the rock dust. The cost of maintaining the 10 miles of entry well dusted was about $1,500 per year or $150 per mile per year. Total cost of the rock dusting over a four-year period was about $6,000, about 2,500 tons of dust being used and 2,000,000 tons of coal produced. The cost included about 1,200 days labor dusting at $2.50 per day, 2,500 tons of rock dust at $1 per ton and miscellaneous labor, material, repairs, power cost, etc. amounting to about $500. The cost per ton of coal produced for keeping 10 miles of entry rock dusted was about 0.3c.

### Sprinkled Interior of Mine

In addition to the rock dusting, some sprinkling was done chiefly in the interior of the mine costing about 0.4c. per ton; and, due to spilling of coal and sifting of coal dust through loose cars on the entry floors, the floors of haulage roads were kept sprinkled between and just outside the rails. Total cost of sprinkling and rock dusting was about 0.7c. per ton, much less, of course, than the same work would now cost.

The Dolomite explosion near Burmingham, Ala., in November, 1922, and the Dawson No. 1 Mine explosion at Dawson, N. M., in February, 1923 (at both of which I made underground inspections and reports) both starting on main intake haulage road and both in mines which had fairly elaborate watering systems, convinced me that at least as far as freezing can occur on main intake air courses which also act as main haulageways, rock dusting is likely to be much more dependable than sprinkling.

In making up the report on the Dawson explosion to the Bureau of Mines (copy of which also went to the owners of the Dawson properties) I strongly urged the rock dusting of main intake-main haulage roads (of which there were many miles being operated at Dawson) at least as far as freezing extended in coldest weather together with extension of watering methods in the interior mine workings placing water lines, and water hose at every working face,, and keeping thoroughly wet all open interior workings. The use of water on cutting chains on all mining machines and also the sprinkling of loaded car tops at the faces and on partings was recommended. It was strongly recommended that each section of all mines be protected by rock-dust barriers.

### Most Modern Practices at Dawson

By January, 1924, or about a year after the Dawson No. 1 explosion, the Dawson mines were by all odds the most up-to-date mines I had ever seen from the standpoint of health and safety; both rock dusting and watering methods were being used to an extent which I had never before encountered. The Dawson mines quickly became the mecca of western coal mining people and almost immediately modifications of the Dawson practice were being adopted in mines of New Mexico, Colorado, Utah and Wyoming.

The now famous Utah regulations adopted after the Castle Gate explosion in March, 1924, involving compulsory rock dusting "at least into the most distant points where freezing takes place in coldest weather," use of rock dust barriers, use of water on coal-cutting machines, compulsory sprinkling of faces by miners and of all other interior open workings by the company, exclusive use of permissible explosives and of electric blasting and exclusive use of closed lights, are all Dawson practice though some of these practices had their origin in Utah and some were in at least partial use previously in Utah mines as well as in mines of New Mexico, Colorado and Wyoming.

While all of the Utah coal operators agreed to the new regulations before they were issued some have been somewhat doubtful as to the efficiency of rock dusting, yet practically all are in some degree complying with the law. Some of those at first frankly skeptical now are rock dusting far beyond the amount specified in the new regulations; some are rock dusting as specified by the new regulations or even beyond the demand of the regulations and are simultaneously sprinkling intensively the floor of the places where ribs, roof and floor are rock dusted and are *soaking* the interior mine workings. On the other hand, there are a few whose rock dusting is evidently done only to "get by" when the state inspector comes around.

One of the most extensively adopted adjuncts to rock dusting in western mines is the spreading on the floor of intake haulage entries of surface soil or adobe which usually becomes dry and dusty and, in addition to greatly aiding in track ballasting, also sends into the air by movement of animals, trips, etc., considerable quantities of finely divided incombustible dust which

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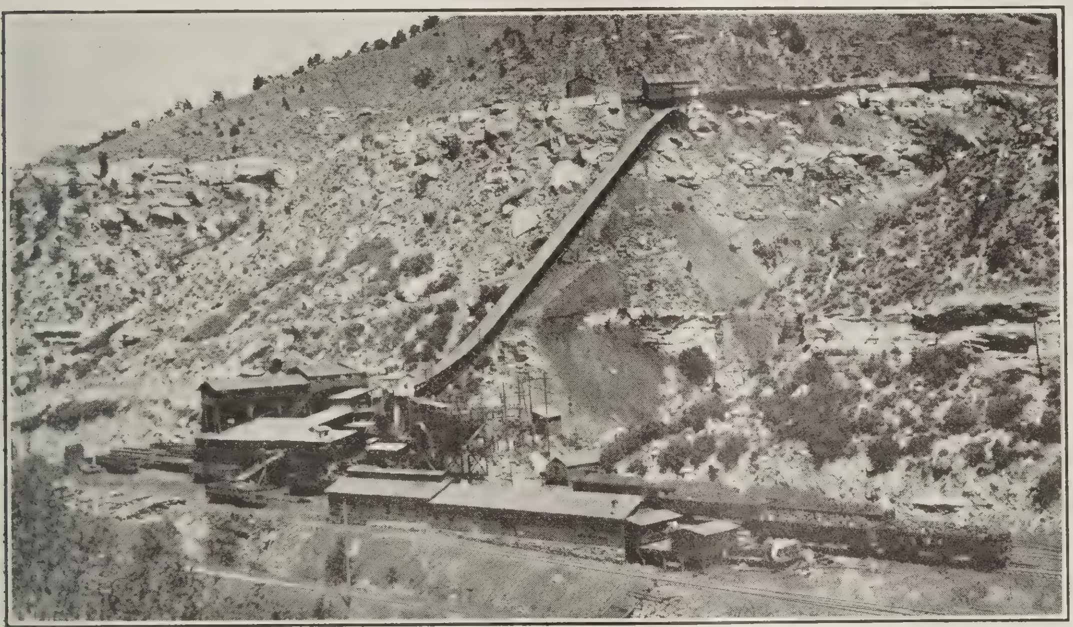
This article is from a paper read by Mr. Harrington at the Price meeting of the Rocky Mountain Coal Mining Institute, Aug. 24, 1925.

ultimately settles on ribs, timbers, roof, etc., and aids in keeping percentage of combustible low.

During the past year or year and a half much over a hundred miles of haulage entry floor in western coal mines have been covered with from a few inches to as much as a foot of soil or adobe at a cost of from 10c. per foot of entry to 25c. or even more, depending upon thickness of the covering, amount of preparatory cleaning done and whether the adobe can be found readily available to the mine, whether it can be loaded in pit cars by steam shovel or by horse scraper and trap or by hand, etc.

Suitable material for the floor covering is almost anything which pulverizes upon becoming dry, and has a combustible content of less than 10 per cent. In many instances the material has over 50 per cent free silica but no alarm is felt since little of this material gets into the air breathed by workers and up to date no complaints have been made nor has there been any evidence of trouble. While placed in mines in lumps as large as a man's head this material dries and disintegrates to such an extent that when sampled on entry floors after a few months of service it runs 25 to 50 per cent through a 200-mesh screen.

For ordinary rock dusting purposes the material most in use in the West is crushed limestone obtained from cement mills or smelters at a cost of $3 to $5 per ton sacked at the mill or smelter. Fineness is 40 to 60 per cent through 200 mesh. Freight brings the cost, f.o.b. mine, to $5 or $5.50 and in at least one instance to $8 per ton. A few mines in Utah have used crushed leucite which is silvery white in color and glistens brilliantly when crushed to 100-mesh or less, is almost entirely incombustible, costs about the same as the crushed limestone and is placed on the ribs, roof, etc., almost as readily as limestone.



**Typical Utah Incline**

The seam mined by the Carbon Fuel Co. at Rains outcrops high on the face of the hill, making necessary this long conveyor to the tipple and loading plant. R. P. Fitch is superintendent of this mine. His top plant, as well as several others in Utah, is capable of applying most of the refinements now known in coal preparation. Some Utah operators deplore this recent development of sizeing though it makes the coal of that state even more marketable.

Both the crushed limestone and the crushed leucite absorb moisture in humid air. A few mines are preparing to crush their own local material and at least one company in Colorado has a combined crusher and rock duster which converts shale underground to dust and immediately deposits it. This company rock dusts all open parts of the mine up to and including the faces. A few mines are converting local shale oil to a watery mud of about 20 per cent solids and "muditing" or covering roof, ribs, and floor with the watery mud which has some decided advantages in protecting and covering exposed surfaces. With certain kinds of soil and after successive coatings in places which dry out rapidly, the dried "mudite" acts largely as ordinary rock dusting.

Some smaller mines apply rock dust by hand but most of the companies have made their own rock dusters and, curiously enough, most of the rock dusting machines are essentially modelled after the one used by the Victor-American Fuel Co. at Delagua, Colo., in 1912 to 1916. These machines consist of a small, electrically-driven, belt-connected blower (heater gage 2 to 5 in.) and a dust hopper with an outgoing pipe. Locally-made machines of this type cost somewhat less than $1,000 and some of them dust 25 to 35 lin.ft. of entry per minute. One such machine recently redusted 17,000 ft. of entry averaging 10x12 ft. in cross-section in eight shifts.

Cost of rock dusting by these blower units, using crushed limestone or crushed leucite, runs from 2 to 4c. per foot of entry; about 60 per cent is labor, 30 per cent rock dust and about 10 per cent miscellaneous items such as power and materials used. The amount of dust deposited on ribs and roof runs 2 lb. or less per foot of entry. Many of the Utah mines have used compressed air on an injector principle forcing rock dust against ribs or roof with a high velocity propelled by compressed air at 40 to 70 lb. per square inch. This so-called high-pressure dusting dislodges coal dust from crevices, ledges and other projections and leaves a plaster of $\frac{1}{3}$ to $\frac{1}{2}$ in. of rock dust upon ribs, roof, timbers, etc.

The mining companies of Utah practically all have air compressors, stationary or portable, and water lines (now universal in Utah mines) can be used for carrying compressed air and as a result the high pressure dusting is popular because it leaves a heavier coating of dust than other methods (3 to 6 lb. per foot of entry) and costs but little more than with the low-pressure methods. Costs run from 4 to 6c. per lineal foot of entry.

Many Utah operators now believe the first coating of rock dust should be made by the high-pressure method with subsequent or redusting coats, which require but 1 to 2 lb. per foot of entry, to be done with low-pressure machines which are somewhat the quicker. One Utah mine now figures on placing rock-dust boxes along mine workings about every 500 ft. and using the compressed air through water lines to force the rock dust into the air to be later deposited by the air on roof, ribs and floor and it is expected to be able to rock dust practically all intake air courses of a fairly large mine (capacity 2,000 tons per day) in about two shifts. Another mine now has an effective dusting machine of the usual blower type but taking its power from the wheels of a pit car which may be hauled by a mule. It is now felt by many Utah coal mining men that where air velocity is as high as 500 ft. per minute, redusting can be done readily by using the air currents as distributors. The dust is thrown into the air by blower at points 500 to 1,000 ft. apart. However, other operators say that using air currents to distribute rock dust bears the same relationship to *efficient* rock dusting as do frozen water lines to efficient sprinkling methods.

Rock dust barriers used in the West are largely of the V-trough type using 16 to 20 troughs in a barrier, though some mines with high coal use 30 or more troughs per barrier. The volume of rock dust per barrier runs from 2,500 to 5,000 lb. Various kinds of rock-dust material are used in these barriers, among them crushed limestone, crushed leucite, siliceous mill tailings, adobe, flue dust, etc. It is felt that almost any kind of fine incombustible material will serve provided its specific gravity is not too great and provided also that it will not pack or consolidate too much or that it will not absorb moisture to too great an extent.

It is found that in the extremely humid air of most of our Utah mines which use water freely in interior sprinkling, the limestone, leucite, flue dust, and some adobes absorb so much moisture as to become a paste or mud unless securely covered by some such impervious material as oil cloth. Highly siliceous material, however, absorbs little or no moisture and it now appears that crushed quartz would be admirable material for rock-dust barriers.

The usual 16- to 20-V-trough barrier constructed of timber costs $50 to $75 completely installed, while the same kind of barrier constructed of galvanized iron troughs and similar material, such as is now used to a considerable extent by one company, costs around $100. In my opinion the use of galvanized iron or similar material for permanent barriers is the wiser and in the long run the cheaper, as the wooden barriers soon become deformed, or they decay, or they swell due to moisture and can be relied upon to remain in good working condition but little over a year in most places and much less than a year in many places.

Some mines use a succession of comparatively loose shelves as barriers, the shelves extending practically across the opening, where there is no haulage, or along the rib where there is haulage; some properties use as barriers a supply of rock dust contained in a perpendicular box-like opening in the rib held in place by a door which is opened by a vane-like trigger extending into the mine opening. A few mines are preparing to use the concentrated type of barrier recommended by the Bureau of Mines. Some mines have well over 100 barriers installed, though in general not more than 15 to 25 barriers are found in any one mine and most mines have omitted the barriers wholly.

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# Does Sprinkling Increase Spontaneous Combustion in Mines?

**By C. P. Crawford**
Combustion Engineer, Utah Fuel Co.,
Salt Lake City, Utah

BUREAU OF MINES Technical Paper 172, by S. H. Katz and H. C. Porter, entitled "Effects of Moisture on the Spontaneous Heating of Stored Coal" says at the outset, "Spontaneous fires in storage piles of bituminous coal have been the source of trouble and loss since the industrial utilization of coal began. In Europe the idea arose that spontaneous combustion is more liable to happen during wet weather than during dry. Statements favoring or opposing this idea have crept into the literature. Conflicting conclusions, based on experiment as well as opinions based on observations of various degrees of reliability, are given in most of the recorded discussions of the subject.

"Because of the uncertainty of the effect of moisture and its seeming importance among the conditions that effect spontaneous combustion in stored coal, the work described in this paper was undertaken by the Bureau of Mines. The experiments showed that a coal from Illinois oxidized faster when dry, whereas a sample of Pittsburgh coal oxidized faster when moist. These discordant results and similarly inconsistent results from the observations of different investigators may be coupled with the fact that under actual conditions of storing, both coal and air always contain a considerable amount of moisture."

The foregoing report of the investigations of the Bureau demonstrates that the mystery of spontaneous combustion has not yet been solved.

I became interested in the matter about ten years ago in observing what was probably one of the best exhibitions of this phenomenon. The old dump at Castle Gate No. 1 mine contained bony coal and track cleanings generally. In winter when snow fell upon this old dump, the snow was soon melted by the heat of the dump which was comparatively warm at all times. Within 48 hr. afterward little blue flames were in evidence on the surface of the pile. Few of the gas feeders were sufficiently constant to maintain a steady flame at any given point, but shifting emissions of gas were ignited one by another, resulting in a continuous popping and apparent running about of the flames.

Another interesting exhibition of spontaneous heating was to be seen a few years ago in the storage coal piles of the local sugar factories. This coal was piled in concrete lined pits filled with water. However, on this occasion the coal extended above the surface of the water. At every plant where this condition existed the coal was soon heating, and in each case the affected area was in a plane horizontal to and from 8 to 14 in. above the water level. The height of the hot area above the surface of the water appeared to be affected by the fineness of the coal.

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This article is from a paper prepared by Mr. Crawford for the Price meeting of the Rocky Mountain Coal Mining Institute.

**"City Homes" At a Mine**

This apartment house at the Standardville mine in the hills of Utah houses 20 families and affords them almost every modern convenience, including a good many that city apartment dwellers do not get. The building has electric ranges, patent beds that fold into the walls, hot and cold running water and good bathrooms.

It is well known that oily rags have a tendency to heat when allowed to accumulate in some location protected from free air circulation. For some reason, as yet unknown, this does not apply to petroleum or its derivatives.

Now, the most common explanation of spontaneous combustion is that the combustible material oxidizes by being brought into contact with air in the presence of moisture, the theory being that the moisture acts as a catalytic agent.

My theory is that spontaneous combustion is due to oxidation of combustible matter by free oxygen carried in solution by a liquid, the oxidation taking place only as, when, and at the place where this oxygen is released from solution by the evaporation of the liquid.

The reason this oxygen released from solution in liquid is more active than the oxygen of the atmosphere is because of its concentration. Under a pressure of one atmosphere and at the freezing point water will hold in solution a maximum of 4.1 per cent of oxygen, by volume, whereas the maximum amount of nitrogen gas it will carry is 2 per cent of its own volume. This permits in extreme cases of a dissolved atmosphere having a content of 2 parts oxygen to 1 part nitrogen, as compared with a ratio of 1 to 4 in normal atmosphere. The activity of concentrated oxygen in promoting combustion is well known and is demonstrated in the oxy-acetylene torch.

Let us apply the commonly accepted theory of spontaneous combustion to the case of the old dump at Castle Gate. The melting snow would furnish the moisture as a catalyzer, but where would the air come from to furnish the oxygen? Surely all free oxygen contained in any air present in the interior of the dump would be exhausted after the first fire. Also, if the oxygen were furnished by free air in the affected area, why does the gas come to the surface to complete combustion?

Now, let us apply the newer theory. The melting snow carries its dissolved oxygen down into the pile. So long as the water remains in liquid form it holds the oxygen intact, but capillarity soon causes this water to spread out to an extent directly dependent upon the fineness of the material in which it reposes. Evaporation soon begins, and at this time and place the concentrated oxygen is released.

All solids absorb gases, and their ability to do so is increased in proportion to the area of their exposed surfaces. The oxygen is first absorbed by the solid, to be followed by chemical combination in case the solid is combustible matter. If the heat thus generated is not dissipated as fast as generated, the resultant rise in temperature speeds up the whole reaction until all available oxygen has been consumed. If the temperature of the combustible has not been raised to its ignition point in an atmosphere of free air before the exhaustion of water supplied the oxygen, all heating subsides until there is another storm.

This theory applies equally well to coal stored in concrete pits. So long as all coal is submerged in liquid no heating takes place, but if the top of the pile is permitted to project above the surface of the water, heating will take place at the line of evaporation, which is at the point where capillarity ends.

While coke apparently does not heat from spontaneous oxidation, it is not unreasonable to suppose that some oxidation takes place to a slight degree. A higher degree of concentration of oxygen coupled with a higher temperature undoubtedly would result in combustion.

In the experiments conducted by the Bureau of Mines, as mentioned before, it is my opinion that the faster oxidation of moist Pittsburgh coal was due to the moisture absorbing its maximum of oxygen before any oxidation of the coal took place.

Elaboration on this line of thought brings up a question pertinent to coal mine operators. If this theory of spontaneous combustion is correct, what are its effects on a coal mine which is being sprinkled daily with fresh water? Suppose a mine is sprinkled with 200,000 gal. of fresh water each day. If this water has been thoroughly aërated, and is carrying its maximum of 4 per cent oxygen and 2 per cent nitrogen, the mine is receiving daily 12,000 gal. of dissolved air of which 8,000 gal., or 1,000 cu.ft., is oxygen.

Is it not reasonable to suppose that a sudden blast of heat, such as is produced by a gas explosion, would evaporate almost instantly a large quantity of water, thus releasing a corresponding volume of this two-thirds pure oxygen? It seems to me this might account for the violence of any subsequent dust explosion under conditions which indicate that practically all normal atmosphere has been devitalized.

# Low-Voltage Current Proves Safest for Shooting

By A. C. Watts*
Salt Lake City, Utah

WHEN MINE dust or gas ignites from shots in coal the powder used and the method of loading holes are first to come under suspicion. How many such explosions and fires are due to excessive voltages used in electric shot firing nobody will ever know. However, Mr. Watts proved to his own satisfaction in Colorado that 500-volt current was responsible for a good deal of trouble in his mine, whereupon he introduced resistances of one kind or another to reduce his current to 100 volts at 45 amp. This he found to be adequate. Possibly many another mining engineer may profit by these experiments.

FOR SEVERAL YEARS, a mine in Colorado experienced considerable trouble from small fires caused by the blasting of coal. Although a well-known make of permissible powder was used, it was first thought that the powder ignited gas that might be present and that this, in turn, set fire to line brattices or to the coal. Experiments were, therefore, conducted with another make of powder, but the results convinced the superintendent of the mine, Robert Williams, Jr., that the fires were not caused by the powder but by the high-voltage electric current used for detonating the shots.

The mine "makes" gas freely, giving off from three-fourths to a million cu.ft. of methane per 24 hr. The coal is good grade bituminous of a free burning quality.

Electric shot-firing from the outside after all men and animals were outside had been practiced for a number of years. The shooting circuit was connected with the main power circuit at the mouth of each entry. Shooting circuit switches were mounted in boxes, which were kept locked with the handle of the switch, in open position, showing through the bottom of the box. The door of the box could not be shut and locked when the shooting switch was closed.

At the entrance to each room, or working place, a small switch, called the miner's switch, was placed on the shooting line. It was the duty of the miner, when entering his place at the beginning of the shift, to see that this switch was open and that it was kept open until he left the place at the end of the shift to go out of the mine. Grounded return was used for main power lines. The current was 500 volts, direct current, with 100 to 300 amp.

The nearest working face was 9,600 ft. from the shot-firers' switch outside the mine and the most remote working face was 2½ miles. The various working faces were scattered over a wide area between these two points.

A description of the main power line would be valueless; the conductors were of sufficient size, the drop in voltage being not more than 15 per cent. The shooting circuits were No. 8 wires in entries and No. 12 wires in rooms—double lines.

After first experiencing trouble with fires, the shot-firers were required to make an inspection immediately after detonating the shots; and, to expedite their work, rope trips were run. But until current was reduced, as a result of the experiments, a fire would start about every week or ten days, and at least one local explosion occurred which blew out concrete overcasts and stoppings and extended 2,000 ft. from the point of origin. A more extensive explosion was prevented by the wet condition of the mine caused by efficient sprinkling.

On idle days, the superintendent and other observers experimented with other powders and shot with full current and with a hand battery. With the full current of 500 volts and 100 to 300 amp., flame invariably accompanied the detonation of shots. The flame of one shot was estimated to be at least 19 ft. long. Another shot acted like a roman candle and threw sparks of fire for 20 ft., one spark lighting on some brattice cloth and burning a hole in it. When the hand battery was used no flame could be seen, hence it was decided to experiment further with reduced current.

### CURRENT OF 100 VOLTS AND 95 AMP. USED

A water resistance 14 ft. long with copper terminals was constructed. Experiments showed the proper length between terminals to use for the mine but, as this varies for each mine, the figures would be of no value. This was used until one night a shot-firer decided not to use it because he had missed several shots the previous day, which led him to believe the current was not strong enough, so he used the full current with the result that a fire was started. To remove the possibility of such tampering, a resistance was made out of an old rheostat and adjusted until it was found that a current of 100 volts and 45 amp. was sufficient to detonate all shots without fires resulting.

Tests were made with Form CC-500 ohms resistors. Because no recording instruments were available no current readings could be made with instruments used, but visual observation indicated that the flame from detonators, when resistors were used, was about the same as when the current was cut down with water resistance—a small blue flame hardly discernible and shown on a photographic plate as a pin point of light. Although it was determined that resistors could be used, they were deemed impracticable.

When testing with detonators, it was found that with full 500-volt current the paraffine covering on the lead wires of detonators was often set on fire and sparks thrown off, which could easily ignite methane or dry brattice cloth; this did not occur when a resistor or resistance was used.

When installing a shot-firing system, resistors can be used on the outside of each working place, or by placing suitable resistance for each district or by placing full resistance outside of the mine. This was adopted for sake of economy and greater insurance.

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*Chief engineer and geologist, Utah Fuel Co. and The Calumet Fuel Co.

This article was read by Mr. Watts before the American Institute of Mining and Metallurgical Engineers at Salt Lake City, Aug. 31, 1925.

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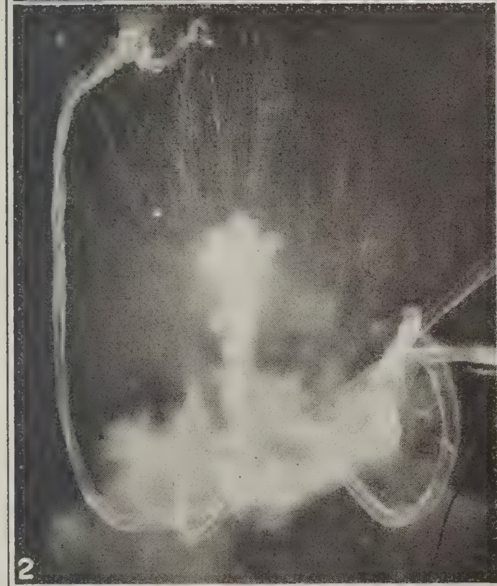
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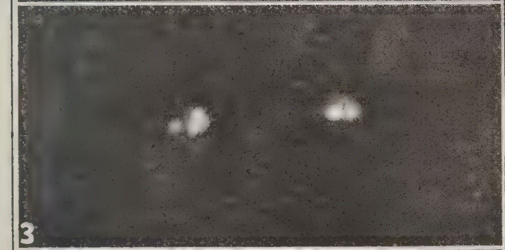
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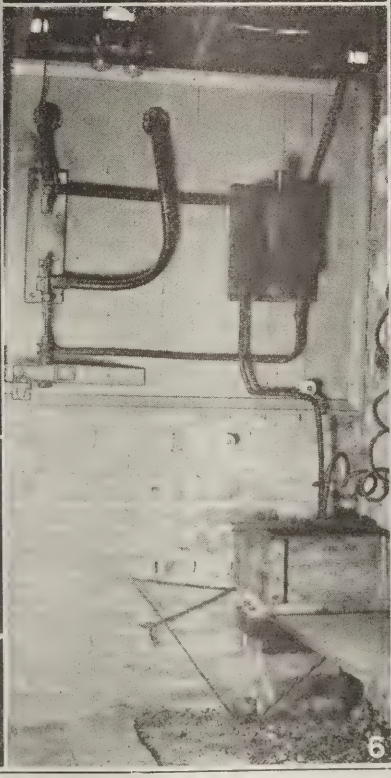
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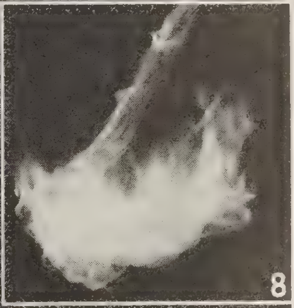
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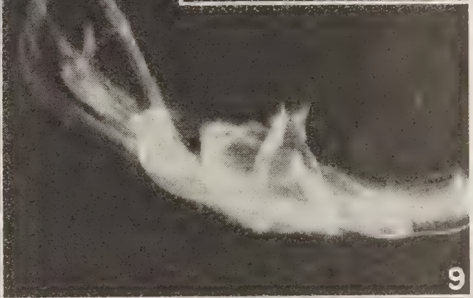
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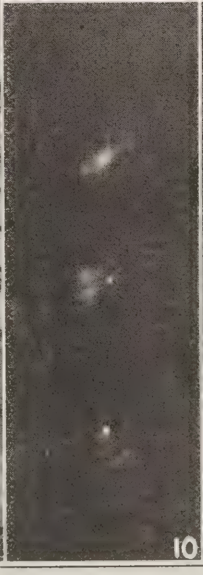
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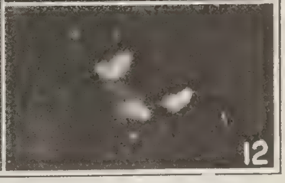
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# Dangerous "Fireworks" from High-Voltage Shot Firing Stopped by Resistance

Upper pictures show shots fired with 500-volt current. Water boxes and 500-ohm resistors cut it down to 100 volts at 45 amp. The photographs are as follows: (1) Blown-out shot, one stick of permissible; current full strength. (2) Detonator wrapped in gasoline-soaked waste; current full strength. (3) Two detonators in parallel; current through 8 in. of water. (4) Twenty-five detonators in parallel; current through 8 in. of water. (5) Short circuit in cap wire; current full strength. (6) Interior of shooting cabin with switches locked in shooting position. (7) One detonator; current full strength. (8) Detonator wrapped in gasoline-soaked waste; current through water. (9) Detonator wrapped in gasoline-soaked waste; current through water. (10) Three detonators in series; current through water. (11) Four detonators in parallel; current through two 500-ohm resistors in parallel. (12) Six detonators in parallel; current through three 500-ohm resistors in parallel.

# Easily Installed Power Lines and Controls Aid Work of Equipment in "V" System

By C. O. Gallaher and G. B. Southward*
Elkins, W. Va.

THE "V" SYSTEM of mining, originated and developed in the Norton mine of the West Virginia Coal & Coke Co. in many respects departs radically from the usual coal mining methods. This made it necessary for the mine engineers to work out a special plan for the installation of electric equipment and the transmission of power such as is described in this article. However, it may be desirable first to explain the operation of the mining system so that the power requirements may be more clearly understood.

In Fig. 1 is illustrated a standard 10-face panel which has a normal daily capacity of 1,250 tons of coal. Conveyors are laid along the faces and in cross and lateral entries, two face conveyors on each block meet in a V and discharge onto a cross conveyor while the five cross conveyors disharge onto the lateral conveyor. In this way all the coal produced from the ten faces in the panel is conveyed to a common point on the haulway where it is loaded into a trip of mine cars.

Because mining is done by machine undercuts along the faces, they always retain a fixed length and the same relative position to each other while advancing abreast toward the lateral entry. When the Vs of the faces have reached the lateral entry, as shown by the dotted lines in Fig. 1, the lateral conveyor is separated into its units and carried ahead 200 ft. to the next lateral entry where it is re-assembled. As the mining of the blocks progresses, the cross conveyors are shortened and one after another of the conveyor sections removed and reset in the advance cross entries.

The conveyor used is of a sectional type which is easily transported and assembled. It is equipped with self-contained drive units that can be placed at any of one or more points in one conveyor unit, as the length of the latter may require. Only one drive unit is used on each face conveyor, but each cross conveyor requires three drives when at its maximum length of 225 ft. and one drive at its minimum length of 25 ft. The lateral conveyor is equipped with seven drives which at times are increased to eight.

### Induction Motors Drive Conveyors

The conveyors are driven by 220-volt induction motors with high resistance rotors to provide ample starting torque. The face-conveyor motors have a capacity of 7½ hp. while the motors which drive the cross and lateral conveyors are rated at 5 hp. Alternating current at 230 volts is used for the conveyor motors, electric drills on the faces, blower fans in the advance entries and for the electric lights. Direct current at 550 volts drives the locomotives and the undercutting machines.

Since all the coal mined in this panel is brought by the conveyor system to one discharge point, it is essential that the system be controlled from this point. Also, since it may be desired at times to stop one or more of the conveyors, the control is so arranged that each may be operated independently of the others. Furthermore, because of the periodic advancement of the lateral conveyor, the wiring as well as all switches and controls must be designed to permit of rapid installation and removal, and also must be rugged enough to withstand frequent shifting.

C. O. Gallaher developed the wiring and control system for a standard 10-face panel as shown in Figure 2. The 2,300-volt, alternating current lines (not shown on the map) are carried on the surface to the top of the borehole, and at this point disconnecting switches, choke coils and lightning arresters are installed. The drill holes vary in depth from 120 to 200 ft., and are cased with 3-in. pipe which extends to the floor of the mine and is provided with a suitable outlet near the roof for leading out the cables. These cables are suspended from the surface and consist of three No. 2 wires which are insulated with varnish and cambric for 2,300 volts.

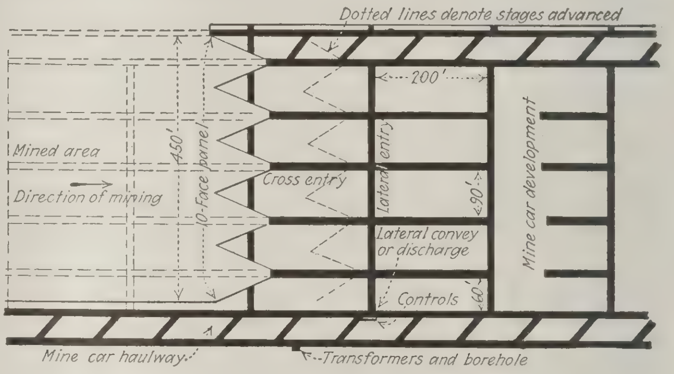

**Fig. 1—Standard 10-Face Panel at Norton**

This illustrates the celebrated V-system of mining in which conveyors transport coal from workings through face and lateral entries to car-loading points on the haulways. The wiring and control system for this panel layout is shown in Fig. 2.

From the bottom of the drill hole, *A*, 2,300 volts are transmitted through the primary cutouts, *B*, to a bank of three 75-kva. transformers, *C*. These step down the potential to 230 volts and are also connected to supply 115 volts for lighting purposes. The transformer bank is equipped with low-voltage lightning arresters, *D*, connected on the secondary side of the circuit, with the air gap set slightly above the potential of the circuit.

The ground wire from these arresters is not shown. It is led to the transformer casings and thence to the borehole where it is connected to the casing which is also grounded on the surface. A three-pole knife switch, *E*, is located just beyond the transformers for disconnecting the main feeder lines. As a safety measure a lattice fence is placed around the transformers to keep any employee from coming in contact with the high voltage.

The 230-volt feeder line, *E*, is 1,000 ft. long and located in the heading, thus allowing a 2,000-ft. panel to be mined before the transformers are moved to another borehole. From this main feeder, short cables, ***F***,

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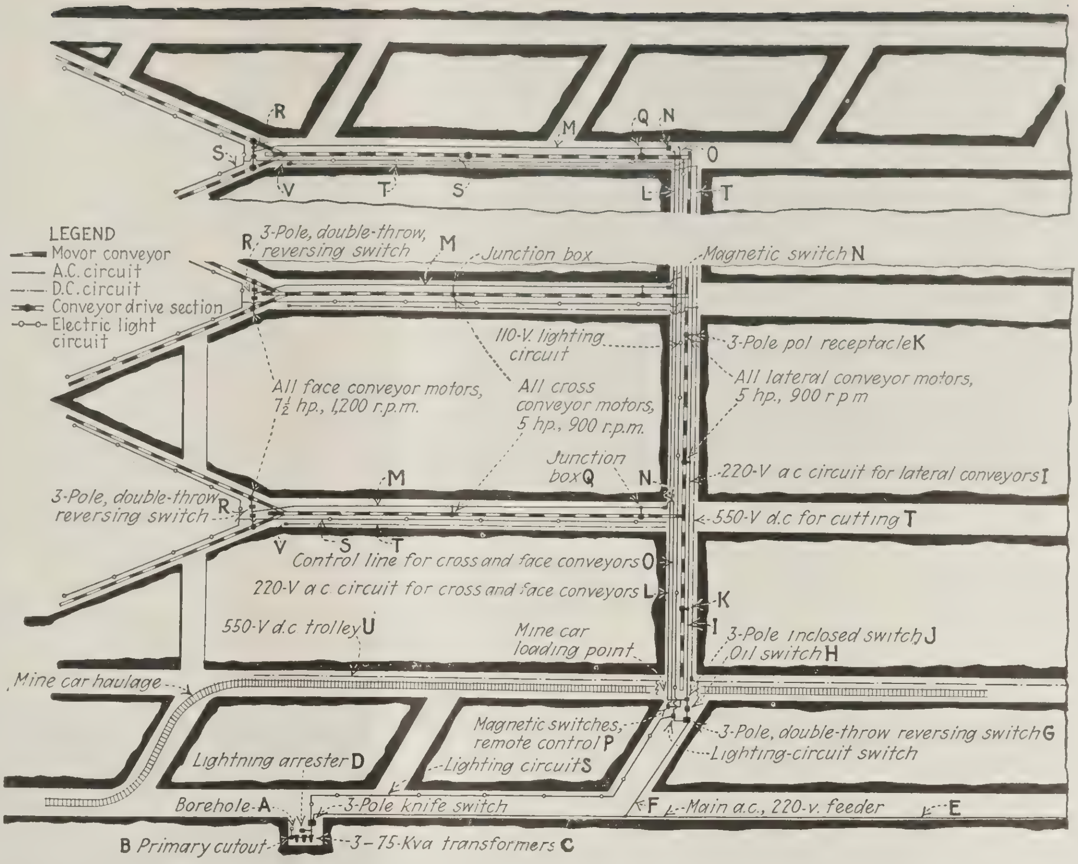
*Mr. Gallaher is chief electrician and Mr. Southward is chief engineer of the West Virginia Coal & Coke Co.


R
S
M
Q N
O
V
T
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L
T
LEGEND
Movor conveyor
A.C. circuit
D.C. circuit
Conveyor drive section
Electric light circuit
R 3-Pole, double-throw, reversing switch
M
Junction box
Magnetic switch N
110-V. lighting circuit
3-Pole pol receptacle K
All lateral conveyor motors, 5 hp., 900 r p m
All face conveyor motors, 7½ hp., 1,200 r.p.m.
All cross conveyor motors, 5 hp., 900 r.p.m.
Junction box Q
N
220-V a c circuit for lateral conveyors I
3-Pole, double-throw reversing switch R
M
550-V d.c for cutting T
V S T
Control line for cross and face conveyors O
220-V a c circuit for cross and face conveyors L
K
I 3-Pole inclosed switch J
Oil switch H
550-V d.c trolley U
Mine car loading point
Mine car haulage
Magnetic switches, remote control P
3-Pole, double-throw reversing switch G
Lighting-circuit switch
Lightning arrester D
Lighting circuit S
Borehole A
3-Pole knife switch
F
Main a.c., 220-v. feeder
E
B Primary cutout
3-75-Kva transformers C

FIG. 2

*Wiring and Control System for Standard 10-Face Panel in "V" Mining at Norton, W. Va. It Was Designed by C. O. Gallaher, Chief Electrician of the West Virginia Coal & Coke Co., and Has Been Used Successfully for a Long Period.*

are carried through a crosscut to the main 800-amp., double-pole reversing switch, *G*, and the main oil switch which are installed at the conveyor control point. The circuits which operate the conveyors lead out from this main oil switch, *H*, which is equipped with overload relays to trip at 600 amp.

The lateral conveyor circuit, *I*, is strung with three-conductor cable which varies in size from No. 00 to No. 6. This circuit ties in the eight lateral motors and is controlled from a three-pole, enclosed switch, *J*. Three-pole polarity receptacles, *K*, are placed in this line connecting with polarity attached to the motor cables. These are quickly attached and detached when the lateral conveyor is moved ahead.

All cross, and face-conveyor motors are operated through the circuit, *L*, which consists of three single-conductor, rubber-covered cables leading off from the main oil switch, *H*, with 500,000-cir.mil cable and ending with cable of No. 00 size. These cables are strung along the entire length of the lateral heading and are provided with a separate branch circuit, *M*, which is led along each cross entry to the "V" of the faces. Magnetic switches, *N*, are located at the junction points of the cross lines, and are operated through the control circuit, *O*, by remote control, *P*, at the mine car loading point. Motor junction boxes, *Q*, are attached to the cables at each motor location on the cross line; face conveyor switches, *R*, are connected at the end of this line, which is at the throat of the "V."

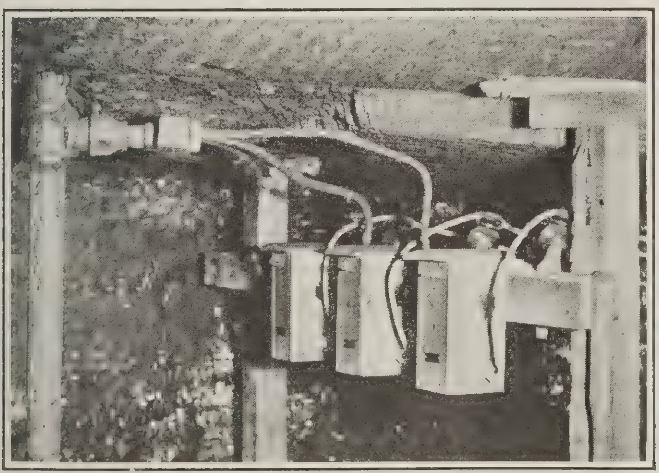

**Fig. 3—Where Power Enters the Mine**

Here is shown the beginning of the underground transmission system. The vertical pipe on the left is part of a borehole casing in which a 2,300-volt circuit is conducted from the surface to the primary cutouts suspended from the timber crossbar.

The motor junction boxes are of metal and in size measure 6x6x4 in. They are constructed with hinged top covers and all terminal blocks are mounted on ebony. Round-socket terminals are installed on the main cable connections leading into the box and split-end terminals lead out for the motor connections. All of these terminals are phased out and marked, 1, 2 and 3, to correspond with similar markings on the cable connections so that it is easy in reconnecting motors to obtain the proper direction of rotation. The face conveyor switches, *R*, are equipped with polarity receptacles for plugging in the short cables leading to the face conveyor motors.

While the face conveyors are being moved forward, the cable is withdrawn from the receptacle and rests on the conveyor. The cross conveyor cables are made up in 66-ft. lengths, the ends of which are connected at the motor junction boxes. As the cross conveyor is shortened, one of these lengths is coiled and eventually removed along with the junction box and drive unit in the process of the retreat. Because of the frequent adjustments made in the wiring to conform with the advances made in mining, all cables on the cross line are laid out on the floor where it is dry and held by

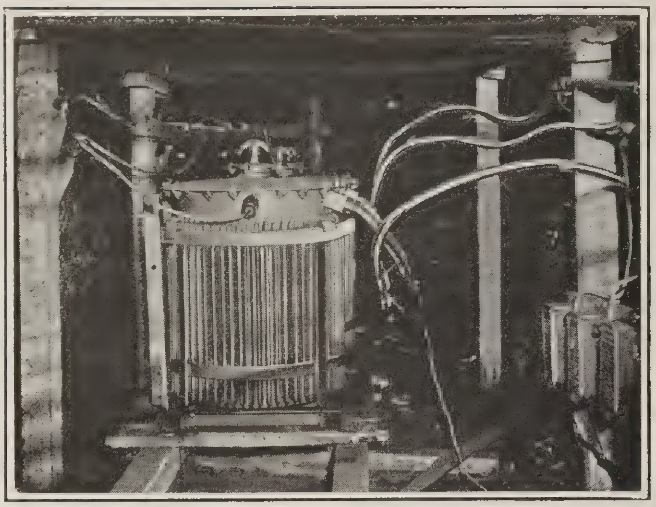

**Fig. 4—Transformers and Lightning Arresters**

This bank of three 75-kva. transformers step down the potential from 2,300 volts to 230 volts. The boxes on the right are low-voltage lightning arresters. These are connected on the secondary side of the circuit, with the air gap set slightly above the potential of the circuit.

insulator pins which are set along the ribs in wet places.

Alternating current for the electric drills on the faces is transmitted through a portable Tirex cable which is connected by polarity plugs on the metal case of the magnetic switches, *N*, at the junction point of the cross circuits. For lighting purposes, separate alternating current lines, *S*, of 115 volts lead from the transformers to all working faces. For the cutting machines a 550-volt direct current circuit, *T*, is led from the trolley circuit, *U*, to a plug, *V*, at the working faces.

All conveyors are controlled from the mine-car loading point. The main oil switch, *H*, closes the conveyor circuit which starts the lateral conveyor, but the cross conveyors are started separately through the magnetic switches, *N*, with the remote control, *P*, at the loading point. This remote control has a start-and-stop station for each cross conveyor and, therefore, any of them may be operated independently.

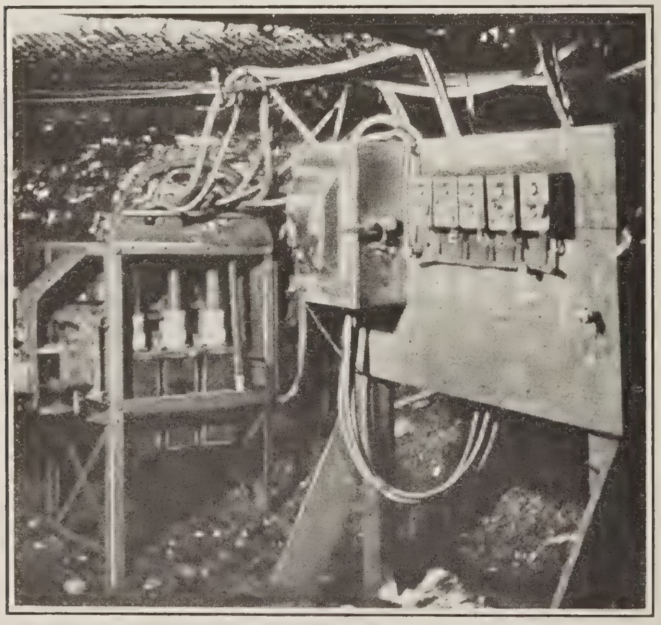

**Fig. 5—Main Switching Equipment**

These controls are located at the point where the lateral conveyor discharges into mine cars. From left to right the equipment consists of an oil switch, a lateral conveyor switch and remote control pushbuttons operating five cross conveyors in a battery.

In addition to the main control switches, each face conveyor, through its separate switch, *R*, can be stopped at any time at the face and may be started from this point providing its main control switch is still closed. The reversing switches for the face conveyors are used when starting the face conveyors under overload conditions, which sometimes occur at the beginning of a shift when the conveyors are thickly covered with coal rolled out in shooting. By running the face conveyor for a few inches in a reverse direction enough slack is provided to enable the conveyor to pull forward from under the coal without difficulty. The main reversing switch is used for reversing all motors in the entire battery when timbers and supplies are conveyed from the mine cars to the working faces.

As the conveyors frequently are stopped under full load while trips of mine cars are being changed, the motors are connected directly across the line in order to get full starting torque. The motors are started in groups. The main-line conveyor with a group of eight motors is started first. The cross-line conveyors, one at a time, are next started through the agency of the remote control switch and in groups of three or five motors depending upon whether the face conveyor switches are open or closed. The time required to start the entire battery of conveyors is 5 to 10 sec.

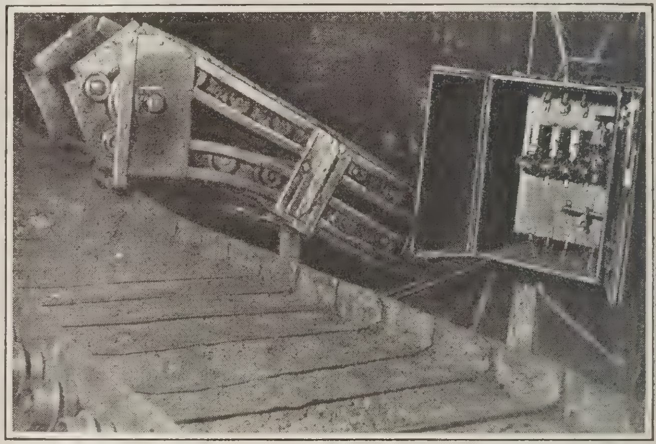

**Fig. 6—Magnetic Switch for Cross Conveyor**

This switch is located at the intersection of one of the cross conveyors and the lateral conveyor and controls the cross conveyors indirectly through a remote control arrangement on the main switchboard.

Because a high starting current is built up the motors are not fused independently; a fuse heavy enough for starting would offer no protection whatever from overload while the conveyors are running. Since the use of starting and running switches would complicate the wiring to a prohibitive extent, eliminating all fusing and protecting the entire battery with overload relays has proved satisfactory. These are located on the main oil switch, *H*, which is set at 600 amp., the tripping point of the entire battery of conveyor motors.

These wiring and control arrangements at first glance may seem rather complicated. The installation not only insures satisfactory electrical operation but also is designed to facilitate rapid connecting and disconnecting, which the mining system requires. Much time for experiment was spent before the system was developed to its present state. It is now considered satisfactory in every respect. When it is remembered that this wiring provides for an output of 1,250 tons per day, the mechanical and electrical work involved does not appear excessive.

# Unstable Dollar Causes Coal's Wage Troubles

**By Prof. Irving Fisher**
Yale University, New Haven, Conn.

THERE ARE TWO outstanding industries in the country which seem to have more than their share of "labor trouble"—the railroads and the coal mines. Not only are they constantly faced with the possibilities of a strike, but when the situation becomes acute, they are not allowed to settle the thing quietly.

A strike in a foundry or factory is heard of by the public and then at once forgotten, but a strike in the coal fields arouses public discussion, talk of nationalization and government interference in its settlement.

There is danger to the present organization of the coal mining industry that comes from public dissatisfaction with the way it is managed. But there is another disadvantage arising from labor troubles that is more imminent and is at the same time the basis of public criticism, and that is the loss in production during a strike. This loss is harmful to all. The miners lose their wages, the operators lose their profits and the public loses the chance of low prices. It is estimated* that in a recent strike in the Pittston field lasting from Nov. 24, 1924, to Jan. 26, 1925, the miners lost $3,827,750 in wages while the operators lost $840,000 and the world's supply of coal was decreased by 850,000 tons or about 1.7 times as much as New York City uses for the making of electricity. (The Pittston field produces about 9 per cent of the anthracite total of the country.)

It is not necessary to go further into detail to illustrate this axiomatic fact: strikes do much harm to all concerned, and frequently do no ultimate good even to the strikers. The important thing is to examine the reason for strikes.

### WAGES IS FUNDAMENTAL QUESTION

There is no doubt that the fundamental question is almost *always* one of wages. Yet is is not an underlying dissatisfaction with more wages but rather a dissatisfaction, due to the decrease of "real wages" (purchasing power of money wages). This decrease, in turn, is often due to the increase in the cost of living.

From 1916 to 1924 there were 24,834 strikes and lockouts. In 38 per cent of these the whole dispute concerned wages, and in 15 per cent more wages were a factor. It is significant that the greater number of disputes about wages occurred in 1917 during the first steep rise in prices, while the next greatest number occurred in 1920, the year of sudden price decline. The fewest strikes occurred in 1924, a period of stable prices. Eight per cent of all strikes are in the mining industry and 7 per cent of all strikers are coal miners. In 1917 there were 449 strikes of miners. From 1916 to 1924 a total of 280,585 coal miners struck.†

Before the war the miner had used a certain standard of living. Then came 1915 and 1916 with the sharp rise of prices. On the same money wages he found that he could not buy his accustomed quantity and quality of food, clothing and shelter for himself and his family. Moreover, the report came back to him that the operators were getting higher prices from their coal and were making more profits. Unable to gage the situation exactly, he assumed that he must demand higher wages, and, in order to be on the safe side, he doubtless often overstepped the mark and demanded increases out of all proportion to the rise in price (the falling value of the dollar).

Then prices began to go down and the miner changed his logic. He had been getting a certain number of dollars a day, why should the operator want to give him less? The answer that coal prices had fallen, and that profits had decreased did not satisfy him. It seemed to him that it was up to "the company" and not to the workers to make good the losses. Strikes resulted.

### BLAMES FLUCTUATION OF PRICES

It is clear all through that the real trouble lay in the fluctuation of prices. If the cost of living had not increased the miner would have lost an argument for an increase in wages. If the prices had not then fallen again the operator would not have found it necessary to reduce wages. It is not, then, as some of the miners think, "profiteering by the operator," or as some of the operators think, "greed of the miner" that is really at the root of the trouble. The real culprit is often our unstable dollar. That keeps the purchasing power of both wages and profits constantly fluctuating so that gains to one party are always being snatched away to the temporary disadvantage of one and advantage of the other.

It is possible to argue that since each one gains, and then loses, he comes out the same in the end. Even though this were true, it cannot help but cause dissatisfaction to the loser. And so one party is always desiring a change which the other will necessarily oppose. The result is the tremendous social and individual loss caused by the ensuing strikes or lockouts.

When the blame has been found to rest on neither party, but rather on our unstable dollar, it should be easy to correct the trouble.

One question then becomes important; how to combat unstable money. The Philadelphia Rapid Transit Co. is struggling with this problem and is about to offer a solution more accurate than any previously attempted. In England millions of laborers have had their wages automatically adjusted by an index number of the cost of living, and during the war several firms adopted this system in the United States.

There are today, various other plans which have been devised to solve this problem. Some attempt to stabilize the dollar itself.

Money, our measure of *value*, is our most frequently used *measure*. Others, less important, such as the yard, the peck, the pint, the pound, etc., were "fixed" a long time ago. A yardstick that constantly changed its length is inconceivable to us today, and yet we put up with a "yardstick" of commerce that is almost never the same two weeks in succession. How long will we let our dollar have a varying amount of purchasing power? How long will we put up with a situation where one person is constantly losing when another gains; where there results friction, strikes and ultimate loss to all?

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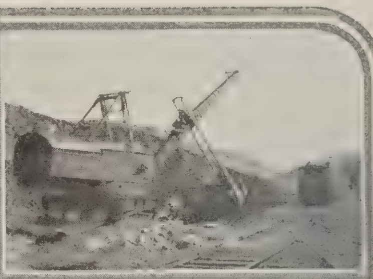
* *Coal Age*, January 29, 1925.

† *U. S. Monthly Labor Review*, June, 1925.

# News Of the Industry



## Anthracite Men Lay Down Tools with No Prospect of Peace

### Wild Last-Minute No-Strike Efforts Fail—Operators Hope Next Settlement Will Provide Adjustable Wage Scale—Miners Like Maintenance Plan

**By Sydney A. Hale**
Special Contributor, *Coal Age*,
New York City

The anthracite strike is on.

Both sides are digging in for a long struggle, if necessary.

The suspension, predicted by pessimistic observers following the first clash of the operators and officials of the United Mine Workers at Atlantic City, N. J., on July 9, officially became effective at midnight Monday. Many workers, anticipating the formal order issued from the temporary headquarters of the union chiefs at the Bellevue-Stratford Hotel, Philadelphia, Pa., Aug. 27, began to clean up and remove their tools the latter part of last week. By Monday night the army of anthracite union workers, estimated at from 145,000 to 158,000 men and boys, had dwindled down to a few thousand maintenance men.

For a time it looked as if even this group would be called out because the operators and miners wrangled through three conferences at the offices of the Philadelphia & Reading Coal & Iron Corporation, Philadelphia, before reaching an agreement on the status of those men. As a matter of fact, the first suspension order was mailed before this agreement had been reached and was supplemented by a second order dated Aug. 28.

This second order, covering the agreement on maintenance men, contained these paragraphs:

> The agreement in substance permits the continuance of necessary maintenance occupations. Maintenance men in such occupations are not to be replaced by others. Otherwise normal conditions that prevailed during idle periods in the past are to be the basis for this agreement. Any general settlement made will be retroactive to Sept. 1 affecting maintenance men. Copy of the agreement is herewith inclosed.
>
> We consider this agreement an advanced step over similar agreements and fully protects our every interest.
>
> Concerning the manner of handling maintenance work, we would state that all work necessary to preserve the normal conditions of the colliery, regarding ventilation, drainage and protection of property, is permitted. This involves such work as necessary engineers, boiler house employees, pump men, fuel men, electricians and those necessary to keep operating units in order.
>
> If the operators desire that maintenance work be done not in keeping with these instructions, the mine committees are advised to take such matters up with the district officials in their respective districts before taking final action.

These strike orders were not promulgated, however, until after last minute efforts to prevent the shutdown had gone out in a burst of melodramatic cross-country chases and pre-dawn conferences. These efforts began with the creation of a Citizens' No-Strike Committee composed of business men in the anthracite region. Sneered at and frowned upon at the outset by President Lewis of the United Mine Workers, who tartly served notice on the body headed by John H. Uhl, of Wilkes-Barre, to keep its hands off, the committee persisted in its efforts. Mr. Lewis, however, finally met the committee at the Altamont Hotel at Hazleton on Aug. 25 and in an address which lasted nearly three hours, delivered a justification of the miners' position and an attack upon the operators. He said:

"If they (the operators) will withdraw their statement on record in the conference (at Atlantic City) that they will yield nothing and reject everything that disturbs the factor of mine costs, then there can be negotiations."

With this statement as its thread of hope, the citizens' committee met the operators in the Hotel Sterling, Wilkes-Barre, the following day.

Major W. W. Inglis, replying for the operators, reviewed very briefly the breaking off in the Atlantic City negotiations and stated frankly that the producers were unwilling to abandon their position on increased wages, the check-off and other demands. "Our minds are not closed to meritorous demands of any kind," said the major, "and we are prepared to discuss fully such demands, but we are not willing to withdraw opposition to demands which we regard as being without reason or substantial merit.

"As to the needs of the immediate situation, we are thoroughly in accord with your desire to avoid a suspension. To that end we renew our proposal that, pending the results of further effort to draw up a new contract, the operators and miners agree that there shall be no cessation of operations. We see no good reason why there should be a strike or suspension while efforts are being made to negotiate a new agreement."

### *Hard-Coal Miners Off For Europe*

On Aug. 24 no less than 50 miners of the anthracite fields, apparently confident the mines were to shut down Sept. 1, booked passage for Italy and other Central European countries. Most of them were happy and bore full pocketbooks. Some of them said they would take as much $50,000 with them to invest in home-country real estate. "Can buy about my whole home town," said one. This sort of exodus to Europe occurs just before every strike. About 75 per cent of the men return.

#### Inglis Interprets Answer

The committee was plainly disappointed at the answer. After a recess of an hour Major Inglis made the following statement:

"You wish further interpretation of our answer to your questions presented by you today. We hoped that you would understand our reply to mean this: In order to avoid a suspension on Sept. 1, 1925, we are willing to renew the negotiations with the representatives of the mine workers looking toward a new agreement, provided you can arrange a conference and provided further it is distinctly understood that we have not agreed to abandon our opposition to the check-off and wage increases, both of which we are willing to consider fully, but both of which we now believe to be unsound and unwarranted."

Still hoping against hope, Chairman Uhl, accompanied by Ralph A. Ammerman, another member of the committee, started out to carry this message to John L. Lewis. Mr. Lewis and a number of his associates had been attending a picnic in the vicinity of Wilkes-Barre. As soon as they learned the results of the meeting they had commenced the return trip by automobile to Philadelphia. Mr. Lewis and Vice-President Philip A. Murray led the caravan in a high-powered roadster; Secretary-Treasurer Thomas Kennedy and James L. McAndrew, secretary of District No. 9, U. M. W., followed in a smaller car.

"Half a league, half a league, half a league" more or less behind came the pursuers, Messrs. Uhl and Ammerman, in a new straight-eight roadster (name not furnished on request) with an enterprising news hound perched peril-

## *Anthracite Strike Chronology*

The demands of the miners, which resulted in the present suspension, were framed at a convention of Districts 1, 7 and 9 of the United Mine Workers, held at Scranton, Pa., June 29 to July 3. These demands include a two-year contract, the check-off, a 10 per cent increase to tonnage men and $1 per day to day men, equalization of rates for the same labor in individual collieries and the fixing of certain minimums, punitive overtime and payment by weight.

The chronology since July 3 has been as follows:

July 9: Joint meeting of operators and miners at Atlantic City, N. J., where President Lewis presents miners' demands and S. D. Warriner, spokesman for the operators, replies that competition makes further increases impossible; offers arbitration.

July 10: Subcommittee of general scale committee organized; committee adjourns to July 14.

July 14-17: Subcommittee meets at Atlantic City to discuss demands; operators refuse to join with miners in petition to Interstate Commerce Commission to investigate freight rates.

July 21-24: Subcommittee continues discussion of demands.

July 28-31: Subcommittee concludes consideration of first six demands.

July 31: Lewis writes Warriner demanding that he and W. J. Richards take part in negotiations.

Aug. 3: Warriner declines Lewis request; renews offer to arbitrate.

Aug. 4: Subcommittee adjourns *sine die* after operators refuse to bind themselves to wage increases and miners again reject arbitration.

Aug. 8: Warriner writes Lewis, suggesting resumption of conferences.

Aug. 9: Lewis declines to reopen negotiations unless operators change position on wage demands and check-off.

Aug. 20: Business men in anthracite region organize committee to bring operators and miners together.

Aug. 25: Lewis meets committee at Hazleton; insists operators must recede.

Aug. 26: Operators in meeting with committee at Wilkes-Barre refuse to abandon position on wage increases and check-off.

Aug. 27: Suspension order issued at Philadelphia.

Aug. 28: Status of maintenance men fixed.

Sept. 1: Strike begins.

ously in the rumble seat. It was some time before the union leaders learned that they were being pursued. By that time, a breakdown had set them out of the current of traffic and the pursuing car had thundered by unknown. The midnight hour had passed before Mr. Lewis and his friends stumbled into the lobby of the Bellevue-Stratford, tired, bedraggled and begrimed, to find a hungry twain from the Citizens' Committee waiting for them.

But even the wild ride did not persuade Mr. Lewis to recede from his position that no resumption of negotiations was possible until the operators had withdrawn the statements to which the union objected. Defeated, the members of the committee started back for Wilkes-Barre as dawn was breaking over the Susquehanna. At a meeting at Scranton, Friday night, the committee disbanded.

The issuance of the formal suspension order was met with a statement by Major Inglis denouncing the union action as subversive to the prosperity of the anthracite industry. The order, he declared, would cost the workers $1,000,000 in wages.

"There are stronger influences at work than a desire to protect the anthracite industry and the anthracite region from the calamity of a strike," he continued. "The feeling is growing that union policy is dominated by its greater concern in soft coal affairs. This was admitted to be the case in the long strike of 1922, and it looks as though it was true today.

"Naturally, this does not lessen resentment in the anthracite region that this calamity should come upon it. The idea that miners cannot work unless they have a contract that satisfies them in all respects is a relic of the dark ages of unionism. It must yield to reason in the end. So must the strike habit. These recurring suspensions are a curse and a reproach. They must be ended by the acceptance of a sane and reasonable method of settling differences by some form of arbitration rather than by resort to force."

The desire for arbitration was again emphasized by Mr. Inglis in reviewing the situation before a meeting of the producers held at Philadelphia on Friday. "In view of the present situation," he concluded, "your committee strongly recommends that the operators maintain a firm stand for arbitration of the present differences, to prevent a recurrence of interruptions such as the one about to start. It believes that any settlement effected should be of a permanent nature, providing for a readjustment of the wage scale from time to time, to allow of prices for our product that will enable it to move freely in competition with other fuels."

Neither statement narrowed the breach between the operators and the miners. The latter withheld any formal answer to the charges made by Major Inglis, but ridiculed the idea that the anthracite strike was undertaken to bolster up the position of the organization in the bituminous fields. The fact that the 1922 hard-coal strike outlasted the soft-coal suspension that year and the differences in the predominating sources of consumption of the two fields were offered to disprove the charge.

## Pittsburgh Coal Co. Miners Form New Union

Pittsburgh, Pa., Sept. 1.—A movement that may result in highly important developments in the coal industry, particularly in the Pittsburgh district, has been inaugurated here with the formation of a new miners' union. The initial step was taken by the men employed at Banning No. 2 mine of the Pittsburgh Coal Co., at Whitset Junction. This mine was opened recently under the 1917 scale, the first union mine in the Pittsburgh district to step into the lower wage payers.

At a meeting of the men in the Banning school house officers were elected for the local, which is designated as No. 1. Of the officers are John Mills (negro), president; M. E. Miller, vice-president, and Daniel Jefferson (negro), secretary. Albert Hillman, Morris Perkins, Blanchard McFely and Marsh Hilloman were appointed to the pit committee. Charles Hill was elected doorkeeper and Andrew Wilson check weighman. E. S. McCullough, industrial aid of the Pittsburgh Chamber of Commerce, was asked to draw up a constitution and by laws for the union.

### Will Movement Spread?

The big interest in the movement here is how far it will spread. The Pittsburgh Coal Co. on Monday morning had 155 men working in the Banning mine, it is announced. This is the highest number so far. There were 206 pickets on duty, of whom 52 were women and children. The company loaded 493 tons at the mine Saturday and expected to do as well each day the early part of this week. Up to Monday 1,600 tons of coal had been produced.

While resumption of mines in the Pittsburgh district is generally discussed, independents have thus far been unable to establish a foothold with the 1917 scale. The Pittsburgh Coal Co.'s Banning No. 2 mine at Whitsett Junction, Pa., is the only mine that has been converted. An operation near Imperial lasted two days, then quit.

## Illinois-Wisconsin Retailers Elect N. H. Kendall

Reorganization of the Illinois and Wisconsin Retail Coal Dealers' Association, one of the pioneer organizations in the field, has been effected within the last few days. I. L. Runyan, secretary of the association for the past 15 years, has retired. N. H. Kendall, for a decade commissioner of the Chicago Coal Merchants' Association and more recently with C. M. Moderwell & Co., has been named as his successor with the title of managing director. Another veteran to retire is C. S. Dodge, Monroe, Wis., who relinquishes the office of treasurer to Peter Beck, Harvey, Ill. Mr. Beck has taken an active part in association work for a number of years. Ex-President Russell H. Jones, Kenosha, Wis., has been elected to the newly created position of secretary of the board of directors. R. C. Wagner, Champaign, Ill., is president. Headquarters will be continued at Chicago.

# Soft-Coal Mines 24 per Cent Safer than In 1924—Did Rock Dust Help?

Bituminous coal mines in this country are getting safer. During the first seven months of this year fatalities were 24 per cent less than in the same period of 1924, thanks largely to a great reduction in dust and gas explosions. It is possible rock dusting and the present-day safety drive are responsible. Accident records covering the seven months show a loss of 1,262 lives in the coal-mining industry, which is 225 less than the number reported for the corresponding months last year. Of the 1,262 fatalities, 929 were at bituminous mines and 333 at anthracite mines. The gross fatality rate for the seven-month period was 3.85 per million tons, as compared with 4.64 for the same period in 1924. The rate for bituminous mines alone was 3.38 as compared with 4.43 during the first seven months of 1924, a reduction of about 24 per cent. The anthracite rate for the seven months was 6.21 compared with 5.71 in the same months last year.

An analysis of the causes of the 1,262 soft-coal mine fatalities in 1925 shows a very marked reduction in the per-million-tons death rate from explosions of gas or coal dust, the rate being 0.72 for 1925 and 1.41 for the seven-month period in 1924. A slight reduction in the fatality rate from falls of roof or coal is also shown by the reports. The rates for haulage and explosives are slightly higher than in 1924. A comparison of the rates for the first seven months of the two years is shown by the figures in the following table:

| | Jan.-July 1924 | Jan.-July 1925 |
|---|---|---|
| All causes | 4.636 | 3.847 |
| Falls of roof and coal | 1.883 | 1.722 |
| Haulage | 0.608 | 0.655 |
| Gas or dust explosions | 1.406 | 0.722 |
| Explosives | 0.168 | 0.195 |
| Electricity | 0.125 | 0.128 |

The July fatality rate in bituminous coal mines this year was 23 per cent below the average for 10 years and 17 per cent below July of last year, according to information received from state mine inspectors by the Bureau of Mines, Department of Commerce. The anthracite rate also was less than the 10-year average so that the total rate per million tons for the month was drawn down to 3.45 deaths per million tons of production. A total of 166 lives were lost producing 48,126,000 tons of coal.

Of the 166 fatal accidents in July, 51 were at anthracite mines in Pennsylvania, and 115 were at bituminous coal mines throughout the United States. The fatality rate for bituminous mines was 2.91 per million tons, based on the month's production of 39,582,000 tons; in July last year the corresponding rate was 3.51, while over a 10-year period (1915-1924) the July rate averaged 3.79. The anthracite rate for July, based on a production of 8,544,000 tons, was 5.97 deaths per million tons, as compared with 5.54 for July last year and 6.32 for July during the ten-years 1915-1924.

### *Logan Tells Bittner To Get Out*

Van A. Bittner, international organizer for the United Mine Workers in northern West Virginia, and his party of other mine union officials left Logan County, Aug. 25. without indicating their destination after having been served with notices of a permanent injunction restraining their organization from attempting unionization of the miners in the Logan coal fields. After the injunction notice was served the union officials received a special committee from the Logan chamber of commerce, whose spokesman told Bittner and his party that "your presence is not desired." The injunction for which notices were served was granted in 1923 to sixty-five coal companies in the Logan field and made permanent in January, 1924.

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The Louisville & Nashville R. R., of Louisville, Ky., one of the largest systems operating in the south, and also a big coal producing road, used a total of 4,111,963.35 net tons of soft coal in locomotives during the twelve months period ending June 30, 1925.

## Coal-Mine Fatalities During July, 1925, by Causes and States

(Compiled by Bureau of Mines and Published by *Coal Age*)

| State | Underground | | | | | | | | | | | | Shaft | | | | | Surface | | | | | | | Total by States | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Falls of roof (coal, rock, etc.). | Falls of face or pillar coal. | Mine cars and locomotives. | Gas or dust explosions combined. | Explosives. | Suffocation from mine gases. | Electricity. | Animals. | Mining machines. | Mine fires (burned, suffocated, etc.). | Other causes. | Total. | Falling down shafts or slopes. | Objects falling down shafts or slopes. | Cage, skip or bucket. | Other causes. | Total. | Mine cars and mine locomotives. | Electricity. | Machinery. | Boiler explosions or bursting steam pipes | Railway cars and locomotives. | Other causes. | Total. | 1925 | 1924 |
| Alabama | 9 | | 1 | | | | 2 | | | | | 12 | | | | | | | | | | | | | 12 | 7 |
| Alaska | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Arkansas | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Colorado | 2 | | 1 | | | | | | | | | 3 | | | | | | | | | | | | | 3 | 3 |
| Illinois | 3 | | 3 | | | | | | | | | 6 | | | | | | | | | | | | | 6 | 11 |
| Indiana | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 3 |
| Iowa | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Kansas | 1 | | | 2 | 1 | | | | | | | 4 | | | | | | | | | | | | | 4 | 0 |
| Kentucky | 2 | | 3 | | | | 1 | | | | | 6 | | | | | | | | | | 1 | | 1 | 7 | 1 |
| Maryland | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Michigan | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Missouri | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Montana | | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | 1 | 1 |
| New Mexico | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 1 |
| North Dakota | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Ohio | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 8 |
| Oklahoma | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 1 |
| Pennsylvania (bituminous) | 12 | 4 | 7 | | 1 | | | | | | 1 | 25 | | | | | | | | | | | | | 25 | 39 |
| South Dakota | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Tennessee | | | | 10 | 1 | | | | | | | 11 | | | | | | | | | | | | | 11 | 1 |
| Texas | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Utah | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Virginia | 1 | | 1 | | | | 1 | | | | 1 | 3 | | | | | | | | | | | | | 3 | 6 |
| Washington | | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 3 |
| West Virginia | 18 | 1 | 9 | | | | 3 | | 5 | | | 36 | | | | | | | | | | | | | 36 | 29 |
| Wyoming | 1 | | | | 1 | | | | | | | 2 | | | | | | | | | | | | | 2 | 1 |
| Total (bituminous) | 53 | 5 | 25 | 12 | 4 | | 7 | | 5 | | 2 | 113 | | | | 1 | 1 | | | | | 1 | | 1 | 115 | 117 |
| Pennsylvania (anthracite) | 17 | 5 | 8 | 2 | 10 | | 1 | | | | 1 | 44 | | | | | | 1 | 2 | | | 1 | 3 | 7 | 51 | 42 |
| Total, July, 1925 | 70 | 10 | 33 | 14 | 14 | | 8 | | 5 | | 3 | 157 | | | | 1 | 1 | 1 | 2 | | | 2 | 3 | 8 | 166 | |
| Total, July, 1924 | 73 | 9 | 26 | 18 | 11 | 4 | 7 | | | | 6 | 151 | | 1 | | | 1 | 1 | 1 | | | 1 | 4 | 7 | | 159 |

## Northern Producers Plan to Combat Rate Advantage Won By Southern Coal Shippers

Philadelphia, Pa., Sept. 2—Operators representing the northern bituminous coal fields will meet at the Hotel Bellevue-Stratford this afternoon to determine what action, if any, should be taken with respect to the recent decision of the Interstate Commerce Commission opening up New England and the Middle Atlantic states to all-rail prepared sizes from the low-volatile fields of southern West Virginia. The conference, to be participated in by representatives from the northern West Virginia, Maryland, central Pennsylvania and Pittsburgh districts, will also take up the question of promoting an educational campaign to acquaint the domestic consumers of the East with the virtues of bituminous coal for household consumption.

The meeting this afternoon follows an all-day conference held here last Friday at which the Interstate Commerce Commission decision was discussed, first, by the operators, and then between the producers and officials of the Trunk Line carriers. Although no official statement of progress was issued at the conclusion of this meeting, the opinion is held by many of the coal men interested that the decision favoring the Southern fields is part of a government policy to smooth the competitive path of the non-union producers. This policy is traced back to the message of President Harding in which he declared that, except for the output from the unorganized fields, the United Mine Workers had the country by the throat, and the subsequent recommendations of the United States Coal Commission that the use of substitute fuels in anthracite - consuming territory should be encouraged.

### No Emergency Exists

The Northern operators, particularly those in the low-volatile areas, feel that the decision fails to give proper recognition to the case presented by them. While they might not object to the publication of joint through all-rail rates from West Virginia as an emergency proposition, they insist that such an emergency does not exist. Against the 500,000 tons monthly that the Commission estimated the Southern fields might add to the domestic coal supply of the Northeast, the Northern fields assert that they can produce and ship 2,000,000 tons. Routes and rates for this latter movement are already available. On the other hand, the rates ordered from West Virginia apply via the Potomac Yard and Hagerstown gateways. To throw such a movement through those gateways, they declare, would mean congestion and delay that would dilute the car supply of all mines shipping to Eastern consuming points. The differentials of 61c. to $1.10 over Clearfield rates for distances 225 to 465 miles greater also are attacked as preferential to the Southern producers.

Three possible courses of action have been suggested, viz., to apply to the Interstate Commerce Commission either for a modification of its order, a rehearing, or a reargument of the case. The meetings with the railroads have been held with the hope of persuading the carriers to join with the Northern fields in whatever action may be decided upon, but the outlook in that direction did not appear bright at the adjournment of the Friday conference.

**James E. Black**

Who, in the absence of F. G. Tryon, who is on furlough for a brief period from the Bureau of Mines to make a study of statistics of fuel and power for the Institute of Economics of Washington, is in charge of the coal unit of the Division of Mineral Resources. Mr. Black has had long experience in coal accounting and was associated with David L. Wing in the service of the U. S. Coal Commission. Prior to his service with the Coal Commission Mr. Black was an examiner with the Federal Trade Commission.

## New England Has More Coal Now than Last Year

The Aug. 25 report of Eugene Hultman, chairman of the Massachusetts special commission on the necessaries of life, showed that his state on Aug. 1 had 2,625,690 tons of domestic anthracite on hand in retailers' yards or already delivered to householders, as compared with 2,576,191 Aug. 1 last year. Thus in the face of an anthracite miners' strike, Massachusetts, which sets the pace for all New England in coal consumption, was in possession of little more than an average quantity of hard coal.

### *Industrial Coal Stocks Increase in July*

Industries increased their coal stocks by more than six million tons in July, according to the National Association of Purchasing Agents. Larger supplies of both anthracite and bituminous coal were laid in, probably in anticipation of possible trouble in both fields. The amount of coal on hand in industries Aug. 1 is estimated by the association at 46,373,000 tons of anthracite and bituminous combined. This is sufficient to last 48 days based on the amount of coal consumed in July. Consumption in July exceeded that of June by approximately one million tons.

## Hard Coal Strike Scares Country Little This Time; Miners' Outlook Not Good

By Paul Wooton

Washington Correspondent of *Coal Age*

The anthracite agreement came to an end this year in an entirely different setting than did that of 1902 when President Roosevelt intervened. Then there frequently was real misery among the mine workers. Their standard of living was below that in many other industries. Then there was a great body of consumers to whom substitutes were unfamiliar and to a considerable extent unobtainable.

As the agreement wound up this year and the strike started, the mine workers were enjoying a standard of living that exceeds that of many other American industries and is so far ahead of that of any group in Europe as to be incomparable. There is no poverty or genuine grievance among them. They are prosperous and are saving money.

The mine workers have forced up the wage rate until their product has become a luxury. Incidentally they opened the way for the entry of oil, coke and high grade soft coal into what could have been kept an exclusive market. A situation has been brought about where adjustments could be made quickly were anthracite to disappear from the earth. The second winter it hardly would be missed.

Instead of finding desperate consumers pleading with federal officials for protection as was the case in 1902, the expiration of this year's agreement found the consumers in a very different state of mind. They were bending their efforts to free themselves of dependence on a single fuel. They did not want the federal government to interfere. The strike would have to last twelve months, it is believed, before any great pressure would be developed for federal intervention. When a former fuel administrator of New England—a man noted for the vigorous way in which he has championed the cause of the consumer—comes out and urges the use of substitutes, it would seem that the public will take the matter more seriously than ever before.

The mine workers also faced a different situation than ever before as the agreement expired. They had to decide between holding the high wage scale they had attained and embarking on a desperate adventure involving the possible destruction of their union and the loss of half their market. Loss of half the market would mean the reduction of the working force by 75,000 men. It would mean lowering of prices to win back what had been lost.

The anthracite situation has served to emphasize that the main objective of organized labor in this country now should be holding what it has. If an effort is made to force wages to higher levels the existing structure is likely to be wrecked. Our resources are such and the capacity of our managers and our workers is such that we may be able to maintain present standards, but it is going to be a tremendous task—one that calls for full co-operation between employer and employee.

## Stealthy Union Effort In Logan County May Be "Grandstand Play"

Is the publicity stir about organizing the Logan and Mingo Counties coal fields in southern West Virginia a "grandstand play" to appease the coal operators of the Central Competitive Field or is it business? This question is being asked generally in the coal fields of the "Little Mountain State."

Coal operators in the northern field of West Virginia who had their tussle with the union and seem to have its shoulders on the mat, say that it is a grandstand play to placate the 100 per cent organized Central Competitive Field and to make men there feel good over another attempt to organize "the citadel of non-unionism" in bituminous coal fields or what the miners sometimes call "hard-boiled non-union."

Visitation of Van A. Bittner, chief international representative of the United Mine Workers in northern West Virginia, and members of the international executive board members to Logan and Williamson two weeks in succession has naturaly caused a stir. These impregnable non-union strongholds have been unmolested since Keeney's armed march on Logan. Mr. Bittner and his party were requested by a committee of Logan citizens to leave there.

An effort is being made by the United Mine Workers to have John L. Lewis, international president, visit the northern West Virginia and Panhandle sections on Labor Day or soon afterward, but it is believed that he will be unable to come because of the pressure of business. If a strike is called in the West Virginia bituminous coal fields it is believed that it will not be staged until the middle of October.

### No Settlement Reached

Several conferences were held recently with John H. Jones, president of the Bertha-Consumers Co., in Pittsburgh, but no settlement has been reached. It is believed that the company is awaiting the action of the miners incident to the expected strikes in the anthracite and bituminous fields. The Rachel mine at Downs, W. Va., continues to work non-union and the Bertha mine, near Morgantown, in northern West Virginia, continues to work with union miners, pending a settlement at Rachel.

Recently a great deal of trouble has been started in Monongah, where the municipal officials are either members or closely identified with the United Mine Workers. After being criticised in a public meeting Mayor Harry Bennett conferred with the sheriff and claims that the non-union forces were as bad offenders and law-breakers as the union miners. The sheriff agreed to post two deputies there daily. Charges were made that the town officials were not enforcing the law.

A rumor afloat that Italian miners were deserting the union was quickly denied by Nick Aiello, a former president of Sub-District No. 4, District No. 17, who is of Italian extraction. The miners claim that the story is operators' propaganda.

## *Klansmen Pallbearers Bury Negro Miner*

Roderfield, W. Va., witnessed the peculiar spectacle, Aug. 23, of a group of Ku Klux Klan members serving as pallbearers at the funeral of a negro miner. Samuel Obrey, the negro, was killed in a mine in Fall River and the body was sent to a Roderfield undertaker for burial. As the coffin was placed in the hearse to be taken to the cemetery a Ku Klux Klan meeting, held in rooms over the undertaking establishment, was dismissed. Noting the absence of mourners, several Klansmen boarded the hearse, while others fell in behind and marched to the cemetery, where they lifted the coffin from the hearse and lowered it into the ground.

## Soft-Coal Strike Threatens; Southwest Miners Quit

Government officials are on the anxious seat lest trouble in the soft-coal fields follow in the wake of the anthracite strike. Since John L. Lewis delivered his threat of a general bituminous strike at the tri-district convention of anthracite miners, at Scranton, last June, many local unions have notified him that they will support such action. Agents of the U. S. Department of Labor are understood to have been ordered to look into this situation.

William Dalrymple, president of district 21, comprising Oklahoma, Arkansas and part of Texas, issued a strike call at a mass meeting of miners at Hartshorne, Okla., Aug. 30, urging all union men working in mines of companies that "have repudiated their contracts," and others working at wages less than the 1924-25 scale, to cease work the following day. Three-fourths of the union miners of the district were expected by union officials to go on strike at midnight.

Dalrymple's order expressed confidence that the union would be able to win its strike and restore the 1924-25 scale.

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## North American Co. to Distil Pulverized Coal

The International Combustion Engineering Corporation has contracted with the North American Co. to construct plants for low temperature distillation of coal which will greatly reduce, it is said, the fuel cost of the North American's electric power stations. The initial plant will have a capacity of 210 tons a day and will be erected at the Lakeside plant of the Milwaukee Electric Railway and Power Co., a North American Company subsidiary. Construction of this plant will begin at once. The new system distils the pulverized coal now used and the pulverized coke obtained will be burned under the boilers. The other byproducts will be motor spirits, tar and gas.

## Two Tipple Fires Blamed on West Virginia Strikers

A reign of terror broke out in the northern West Virginia strike zone late last week, when two tipples were destroyed. Fire of undetermined origin burned the tipple of Junior mine of the Harry C. Coal Co., in Keen's Run, near Everson, Marion County, between 2 and 3 a.m., Aug. 28, with a loss estimated at from $20,000 to $30,000. The mine owners allege that the tipple was fired by persons who did not want the mine put into operation on a non-union basis. The mine was idle for two years, but recently the mine cars were put into repair and plans were made to reopen the mine soon.

The tipple at mine No. 55 of the Consolidation Coal Co., at Meadow Brook, Harrison County, was burned down Saturday morning, Aug. 29, entailing a loss of $40,000. In addition to the tipple the box-car loading shed and the blacksmith and machine shops fell an easy prey to the flames. The mine was not in operation and no mine guards were on duty at the plant. According to reports three men fled from the tipple soon after the fire was discovered. It was reported that the company was getting ready to reopen the mine, but this was denied by officials, according to reports.

A new daily non-union coal loading record was attained Tuesday Aug. 25, when 1,697 cars were produced. The heaviest daily loading on the Monongah Division, B. & O., was reached the same day at 965 cars.

Thirty-seven striking union miners are charged with contempt of court at Grafton by officials of the Maryland Coal Co., of West Virginia. It is recalled in statements being forwarded to Judge Warren B. Knittle at Philippi, that the men solicited non-union miners working at its Wendel mine to join the United Mine Workers and leave the company's employ. The injunction granted to the company specifically restrains union officials, members or agents from doing such acts.

The Consolidation Coal Co. is dismantling mine No. 37, at Berryburg, near Philippi, and the steel is being shipped to other company mines. The reason for closing down the mine, it is reported, is that the operation cannot be worked profitably because of long hauls. The mine has been operated since 1900.

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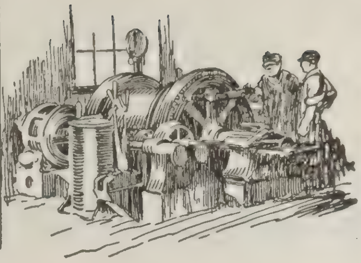
## Russians Visit Mine Fields

The Birmingham district was visited Aug. 20 by three members of the Soviet Russian Coal Commission, representing the Donugal Trust, which controls and operates the Russian coal mines. In the party were N. T. Schibaieff, N. I. Levfcheko and Z. E. Zorin, of Ukraine, South Russia. They were shown over the district and visited both coal and ore mines. The visitors were tendered a dinner during their stay in Birmingham. From Alabama they went to the Colorado coal fields. The commission in the United States consists of nine members divided into three groups in order that the coal producing centers might be visited and inspected as quickly as possible.

# Practical Pointers For Electrical And Mechanical Men



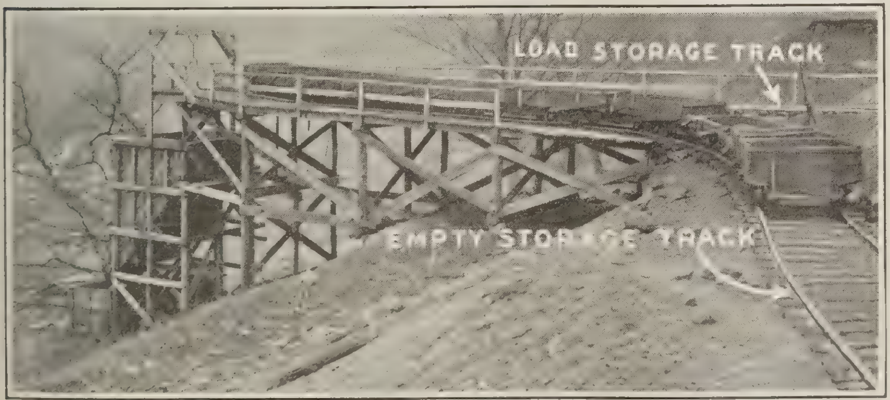
## Gravity Switching of Mine Cars Aids This One-Man Dump

At our old Detmold mine the force of gravity is being used to the utmost in handling and dumping mine cars containing slate. The mine mouth lies several hundred feet above the valley so that unlimited space for rock disposal is available. Cars of slate are switched by gravity from the trip and then allowed to drift down the rock storage track which is long enough to take 25 cars. One loaded car at a time is drifted into the dead-end type dump by one man who also disposes of the slate. After each car is emptied it is pushed from the dump and thence by gravity passes through a spring switch and onto an empty storage track.

Beneath the dump is a bin which holds about 15 mine cars of slate. This dump is equipped with an electric undercut gate. After the attendant has dumped enough slate to fill the bin, he goes below and by means of an electric larry distributes the slate on the bank of the dump. The layout is shown in the accompanying illustration.

The Detmold mine is quite old and at present is producing only about 500 tons of coal per day. At this rate of coal production about 40 cars, or about 150 tons, of slate must be handled daily. The one man will easily dispose of this quantity in about four hours; often he has handled 80 cars of slate in one 8-hr. shift. In fact, this scheme is so ideally arranged that after the rock is switched out of the trips, we hardly realize that we have a rock dump because it gives us so little trouble.

ELKINS READ,
General Supt.
Maryland Coal Co., Lonaconing, Md.



**One Man Can Dump 80 Cars a Day Here**

This layout increases efficiency in the handling of slate. Mine cars are switched from the trips coming from the mine and are dropped by gravity through the load storage track to a dead-end dump. After being emptied the cars are pushed off the dump and thence by gravity pass through a spring switch and descend the empty storage track.

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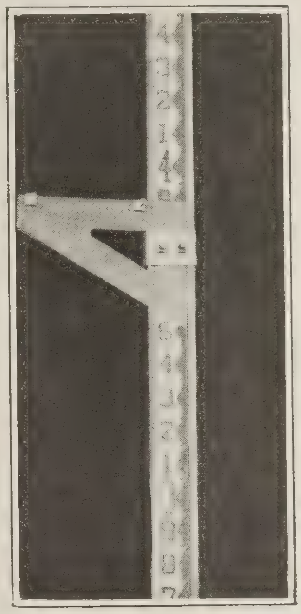
### Home-Made Instrument Aids In Measuring Coal Berm

For ascertaining the height of a coal berm in a strip pit or that of other objects to which direct access cannot be gained so that they may be measured with a rule or tape, the device shown in the accompanying illustration has been devised by Otis Bledsoe, engineer of the Sunlight Coal Co., of Boonville, Ind. This contrivance is extremely simple and was evolved from materials partaking largely of the nature of "odds and ends" found in the coal-mine office. While it will not give results that are absolutely accurate they are sufficiently exact for all practical purposes.

The firm with which Mr. Bledsoe is connected does much coal stripping. As the beds worked vary more or less in thickness and it is difficult if not impossible to obtain a direct measurement on the height of the berm from the footwall to the top of the coal he hit upon this scheme.



**The Height Finder**

To determine the height of the berm in a strip pit with this instrument it is only necessary to set the rod on the footwall, hold it vertical, sight across the two bolts projecting from the triangle, raising or lowering it until the line of sight coincides with the top of the berm. The reading of the triangle on the rod is then the thickness of the coal at that point.

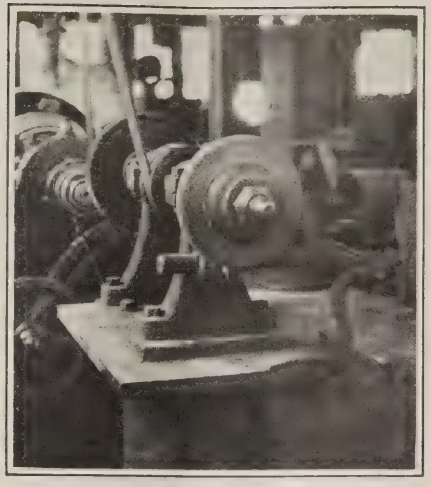
This device consists of an old level rod, an ancient zylonite drawing triangle, a plumb bob and a metal clamp holding the triangle to the leveling rod in such a way that it may be slid up or down like a target. Two small bolts are also provided. These project from the side of the triangle close to its upper edge and serve as sights.

In use the level rod is set up on the footwall as close to the toe of the berm as possible, the plumb bob indicating when it is in a perpendicular position. The triangle is then moved up or down until the line of sight across the two bolts strikes the top of the berm. The reading of the top of the triangle on the level rod then gives the thickness of the coal.

## Scrap Heap Yielded Most of This Grinder's Parts

In the ordinary mine shop few machines are used more frequently by everybody than is the grinder. This is utilized not only for shaping edged tools of all kinds but for smoothing rough surfaces or ends, for cutting hard steel bars and the like. The grinder thus forms one of the tools that is almost indispensable in shop operation, and not a few shops use several such machines.

In the accompanying illustration may be seen a grinder employed in the No. 4 shops of the Kingston Coal Co., at Kingston, Pa. Although this machine was built up from odds and ends picked up around the shop and from the scrap heap it serves excellently the purpose for which it was intended. Briefly the mandrel for this grinder, together with the flanges that hold the two wheels, was forged and turned up in the shop. The two bearings and the pulley originally formed part of the governor of a large engine. The stand upon which the wheels are mounted is a piece of heavy pipe embedded in the concrete floor and having a rectangular piece of heavy plate cap screwed to the flange upon its upper end. The adjustable rests were made in the shop.



**Largely Salvaged**

The two bearings and pulley were reclaimed from the scrap heap and the mandrel rest and stand made in the shop. This grinder, while not very graceful of outline, is nevertheless a sturdy and effective tool.

## Change of Foot Valve Remedies Pump Trouble

At one of the mines belonging to the company by which I am employed the power plant draws its water supply from a pumping station located about a mile away. Originally this station contained one 250-gal. pump designed for a 160-ft. head. This discharged to the power plant through a 4-in. line of cast iron pipe. When more boilers were added another pump was installed, the two machines being piped in parallel.

These pumps would not operate successfully under this arrangement so they were piped in series making virtually one 6-stage machine. The load, however, kept on increasing, the boilers were forced in order to furnish the necessary steam and more water had to be supplied. To complicate matters the water contained impurities that began encrusting the inside of the pipe until the clear bore did not exceed 2½ to 3 in. so that it became necessary to lay a 6-in. discharge line.

When this line was completed the original pump was attached to it and supplied more than enough water. The 4-in. line was then relaid to one of the other mine power plants. The second pump was connected to this line but was also piped in parallel to the 6-in. line so that either or both pumps could discharge to the power plant, thus giving it the benefit of both machines in case of emergency. It also could be supplied by either pump if necessary.

In due time an emergency arose and both pumps were turned onto the 6-in. line. After a few minutes of operation, however, the size of the stream delivered indicated that the machines were sucking air, but careful examination failed to reveal any air leaks. Finally the second pump was throttled down, whereupon its current consumption rose. Now ordinarily throttling a centrifugal pump lowers the reading of its ammeter, but with this machine, the reading increased.

This was somewhat bewildering. It looked as if the machine was not getting enough water. Accordingly the suction line was pulled up and it was found that the 3-in. foot valve lifted only about ¼ in. and inasmuch as this pump was operating under a head far less than that for which it was designed its suction was thus throttled. A new 4-in. flap check valve rectified this trouble and today the pumps work together without difficulty when discharging to a common delivery line.

GRADY H. EMERSON.

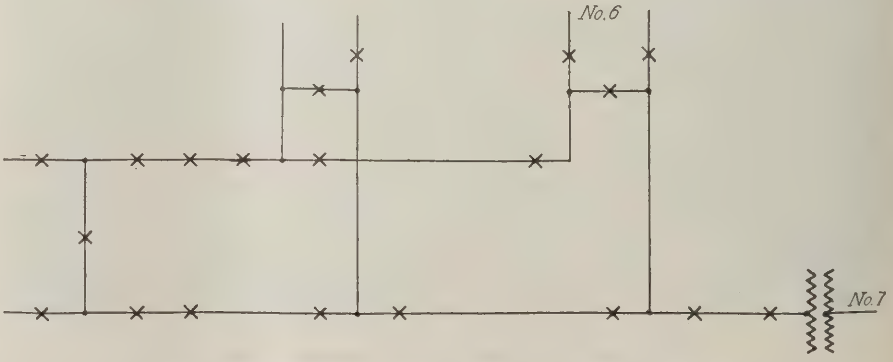
Acmar, Ala.

## Board Visualizes Circuits

The accompanying sketch shows how the electric power circuits of the Susquehanna Collieries Co. are indicated on a wooden board to assist the workmen in visualizing their arrangement. At each point marked by a cross a hole has been made in the board to show the position of a switch. Whenever a switch is closed a plug is placed in the hole, indicating a particular switch, thus designating the fact that the circuit is closed at that point.

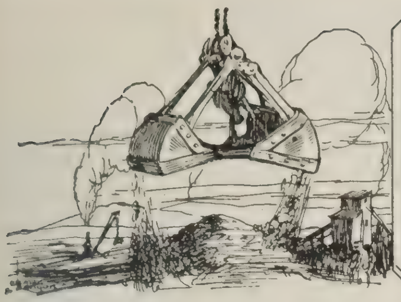
It is always an easy matter to trace the power supply from its source to the place where it is used. In many instances there are two or more ways of supplying energy to a given point but unless other switches are properly set serious troubles may arise.

With such a diagram in front of him a substation attendant can be directed to open or close any particular switch without great liability of making a mistake; each switch is numbered and the corresponding number is marked on the board. By referring to the diagram load dispatching and repair work can be directed over the telephone with accuracy and with safety to workmen.

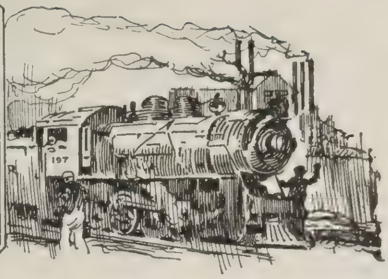


**Power Circuit Map Shows How Loads Are Supplied**

The cross marks on the diagram represent places where switches are located. Plugs inserted into these holes, which are drilled into a wooden board, indicate a closed switch.



# Production And the Market



## Soft-Coal Markets Develop Increased Strength As Anthracite Strike Begins

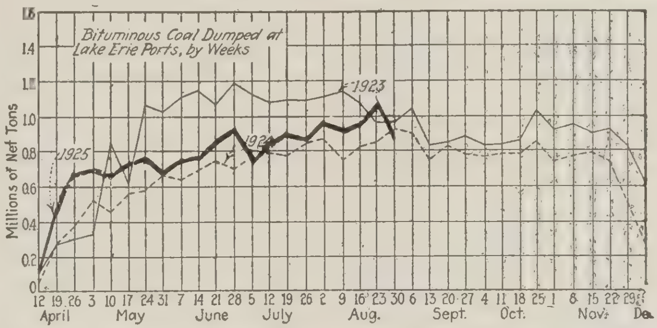
The long threatened anthracite strike became an actuality Sept. 1, the only uncertainty now being as to its probable duration. As a natural corollary the bituminous coal trade continues to improve, prices showing increasing firmness. Demand is especially strong, of course, for domestic varieties, but railroads, utilities and industrial consumers have not been slow to realize the importance of building up reserves and are taking larger shipments on existing contracts lest their sources of supply be menaced by nervous Eastern anthracite consumers. While the pick-up is in boldest relief in hard-coal consuming territory the betterment is not confined to any particular locality, being practically nationwide. At Cincinnati the August supply of smokeless was sold up early last week and orders were accepted only for September delivery.

Perhaps the best feature of the upward trend in business is the fact that it is not entirely attributable to the anthracite strike as the usual seasonal pick-up has the groundwork of sound basic conditions and rather well depleted stock piles. The export situation at Baltimore also shows signs of revival, and the trade, long dormant, bears a more hopeful aspect. Lake business made a comeback when buyers showed a willingness to pay better prices for good quality coals which had been diverted to better markets for a time.

### Hard-Coal Calm as Strike Descends

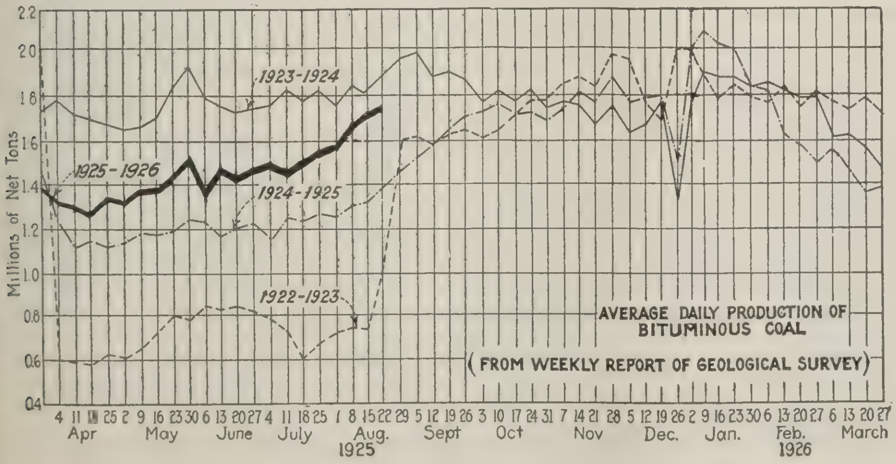
Although the promised suspension went into effect on Tuesday, as scheduled, the anthracite market has shown an unwonted absence of "runaway" characteristics. Business was brisk last week, of course, but there was a gratifying lack of soaring prices on independent coals, these operators having in many instances withdrawn from the market so far as new business was concerned, as they were already rushed with orders. Egg and stove were in strongest demand, though orders for chestnut and pea were plentiful. Steam sizes also moved briskly with all sizes strong and prices firm, independent quotations having climbed above company schedules.

Production of bituminous coal in the week ended Aug. 22 is estimated by the Geological Survey at 10,527,000 net tons, as compared with 10,260,000 tons in the preceding week, as shown by revised figures. Anthracite output in the week ended Aug. 22 totaled 2,209,000 net tons, the largest weekly output since Dec. 16, 1922, as against 1,904,000 in the previous week.



*Coal Age* Index of spot prices of bituminous coal again advanced last week, standing on Aug. 31 at 174, the corresponding price for which is $2.10.

Dumpings at Lake Erie ports during the week ended Aug. 30, according to the Ore & Coal Exchange, were: Cargo, 859,218 net tons; steamship fuel, 50,225 tons—a total of 909,443 net tons, compared with 1,028,492 in the previous week. Hampton Roads dumpings during the week ended Aug. 27 totaled 411,814 net tons compared with 513,780 tons in the preceding week.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| Aug. 8 | 8,036,000 | 9,971,000 |
| Aug. 15 (*a*) | 8,167,000 | 10,260,000 |
| Aug. 22 (*b*) | 8,582,000 | 10,527,000 |
| Daily average | 1,430,000 | 1,754,000 |
| Cal. yr. to date (*c*) | 291,364,000 | 306,294,000 |
| Daily av. to date | 1,472,000 | 1,545,000 |
| **ANTHRACITE** | | |
| Aug. 8 | 1,664,000 | 2,067,000 |
| Aug. 15 | 1,386,000 | 1,904,000 |
| Aug. 22 | 1,711,000 | 2,209,000 |
| Cal. yr. to date (*c*) | 58,470,000 | 60,098,000 |
| **COKE** | | |
| Aug. 15 (*a*) | 95,000 | 123,000 |
| Aug. 22 (*b*) | 108,000 | 139,000 |
| Cal. yr. to date (*c*) | 6,794,000 | 6,237,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (c) Minus two days' production to equalize number of days in the two years.

### Midwest Is Active

As viewed from Chicago the general condition during the past week in the Midwestern coal markets seems greatly improved. The demand is increasing for Illinois, Indiana and west Kentucky domestic sizes. Prices on these coals are firm, and there is a general feeling they will advance 25c. a ton at once. On west Kentucky prepared sizes, prices have reached a new high level. Operators in west Kentucky were forced to increase prices due to a drop in the price for their fine coal, which has about reached the year's lowest level. While the prepared sizes are in fairly good demand, the production of fine coal in all fields is above the present requirements. Some of the large consumers are buying heavily, while others are still holding back awaiting developments in the anthracite field. This holding off may be the cause of the prices being so extremely low on all fine coal from the western coal fields. Last week screenings, especially from Fifth Vein Indiana, sold as low as $1.10.

The greater percentage of the operators in eastern Kentucky and West Virginia also seem to have plenty of orders on hand, owing to the fact that when buying started about three weeks ago they received more orders than they could handle. The bulk of the orders, however, will be completed between Sept. 1 and 10. Coal may then be easier to obtain. From all indications, prices on practically all grades of eastern Kentucky and West Virginia coal will advance 25c. a ton after Sept. 1, high grade eastern Kentucky coals 50c. a ton.

The Pocahontas situation is serious. The same condition exists in the Pocahontas field as in the eastern Kentucky and West Virginia fields. Few Pocahontas operators are quoting prices, accepting orders only on the basis of price current at time of shipment, as it is their desire to clean up all the old orders first. Lump and egg, when car numbers can be given, have sold as high as $4.50 in Chicago.

Business is good in southern Illinois. The mines are beginning to work five days a week and all sizes are moving excepting small nut and screenings. These are lagging just a little. Mines that have been idle are getting ready to start up again. Railroad tonnage is unusually good both from the strip mines and shaft mines. The strip mines are working full and crushing has practically stopped everywhere. In the Duquoin field business is picking up and there is better working time—three and four days a week—and a demand for everything excepting screenings. Duquoin prices are about 25c. to 50c. under the prices of the association members in the Franklin County field. The Carterville independents range anywhere from 25c. to 50c. under the association prices.

In the Mt. Olive field there is a crying demand for domestic sizes. Mines are working three and four days a week and even the steam sizes are finding a market. Railroad

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Aug. 30 1924 | Aug. 17 1925 | Aug. 24 1925 | Aug. 31 1925† |
|---|---|---|---|---|---|
| Smokeless lump.......... | Columbus.... | $3.60 | $3.25 | $3.85 | **$3.75@ $4.25** |
| Smokeless mine run...... | Columbus.... | 2.00 | 1.90 | 2.10 | **2.00@ 2.35** |
| Smokeless screenings..... | Columbus.... | 1.20 | 1.35 | 1.50 | 1.40@ 1.60 |
| Smokeless lump.......... | Chicago..... | 3.60 | 3.25 | 3.85 | **4.00@ 4.50** |
| Smokeless mine run...... | Chicago..... | 1.85 | 2.00 | 2.25 | **2.50@ 2.75** |
| Smokeless lump.......... | Cincinnati... | 3.75 | 3.75 | 3.75 | **3.75@ 4.00** |
| Smokeless mine run...... | Cincinnati... | 1.85 | 2.50 | 2.50 | *2.25@ 2.50* |
| Smokeless screenings..... | Cincinnati... | 1.35 | 1.50 | 1.55 | **1.50@ 1.75** |
| *Smokeless mine run..... | Boston...... | 4.15 | 4.30 | 4.65 | **4.85@ 5.00** |
| Clearfield mine run....... | Boston...... | 1.90 | 1.75 | 1.75 | *1.60@ 1.85* |
| Cambria mine run....... | Boston...... | 2.30 | 1.95 | 1.95 | **1.90@ 2.15** |
| Somerset mine run....... | Boston...... | 2.05 | 1.85 | 1.85 | *1.75@ 2.00* |
| Pool 1 (Navy Standard).. | New York... | 2.70 | 2.55 | 2.55 | **2.40@ 2.75** |
| Pool 1 (Navy Standard).. | Philadelphia.. | 2.40 | 2.60 | 2.60 | **2.45@ 2.80** |
| Pool 1 (Navy Standard).. | Baltimore.... | 2.65 | 1.85 | 1.95 | **2.00@ 2.10** |
| Pool 9 (Super. Low Vol.). | New York... | 2.15 | 1.95 | 2.00 | **1.90@ 2.15** |
| Pool 9 (Super. Low Vol.). | Philadelphia.. | 2.15 | 2.00 | 2.00 | **1.90@ 2.20** |
| Pool 9 (Super. Low Vol.). | Baltimore.... | 1.85 | 1.75 | 1.75 | **1.85@ 1.95** |
| Pool 10 (H.Gr.Low Vol.).. | New York... | 1.95 | 1.75 | 1.80 | 1.65@ 1.95 |
| Pool 10 (H.Gr.Low Vol.).. | Philadelphia.. | 1.75 | 1.70 | 1.70 | **1.70@ 2.00** |
| Pool 10 (H.Gr.Low Vol.).. | Baltimore.... | 1.55 | 1.60 | 1.65 | **1.70@ 1.80** |
| Pool 11 (Low Vol.)....... | New York... | 1.65 | 1.60 | 1.60 | 1.50@ 1.70 |
| Pool 11 (Low Vol.)....... | Philadelphia.. | 1.45 | 1.55 | 1.55 | **1.55@ 1.75** |
| Pool 11 (Low Vol.)....... | Baltimore.... | 1.45 | 1.40 | 1.45 | **1.50@ 1.60** |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.).. | New York... | 1.50 | 1.55 | 1.55 | 1.45@ 1.70 |
| Pool 54-64 (Gas and St.).. | Philadelphia.. | 1.50 | 1.50 | 1.50 | **1.50@ 1.70** |
| Pool 54-64 (Gas and St.).. | Baltimore.... | 1.35 | 1.35 | 1.40 | **1.45@ 1.55** |
| Pittsburgh sc'd gas........ | Pittsburgh... | 2.40 | 2.45 | 2.50 | 2.50 |
| Pittsburgh gas mine run.. | Pittsburgh... | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.). | Pittsburgh... | 1.85 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pittsburgh slack (Gas).... | Pittsburgh... | 1.30 | 1.50 | 1.55 | 1.50@ 1.60 |
| Kanawha lump.......... | Columbus.... | 2.10 | 2.00 | 2.45 | **2.40@ 2.75** |
| Kanawha mine run....... | Columbus.... | 1.40 | 1.40 | 1.60 | **1.55@ 1.80** |
| Kanawha screenings...... | Columbus.... | 1.05 | 1.30 | 1.30 | 1.25@ 1.35 |
| W. Va. lump........... | Cincinnati... | 2.25 | 2.35 | 2.35 | 2.25@ 2.50 |
| W. Va. gas mine run..... | Cincinnati... | 1.45 | 1.55 | 1.60 | 1.50@ 1.75 |
| W. Va. steam mine run... | Cincinnati... | 1.35 | 1.45 | 1.50 | *1.35@ 1.50* |
| W. Va. screenings........ | Cincinnati... | .90 | 1.15 | 1.20 | *1.10@ 1.25* |
| Hocking lump.......... | Columbus.... | 2.40 | 2.35 | 2.60 | **2.65@ 2.85** |
| Hocking mine run........ | Columbus.... | 1.55 | 1.55 | 1.65 | 1.50@ 1.80 |
| Hocking screenings....... | Columbus.... | 1.05 | 1.40 | 1.45 | *1.35@ 1.50* |
| Pitts. No. 8 lump........ | Cleveland.... | 2.40 | 2.25 | 2.25 | **2.00@ 3.00** |
| Pitts. No. 8 mine run..... | Cleveland.... | 1.80 | 1.85 | 1.85 | **1.90@ 1.95** |
| Pitts. No. 8 screenings.... | Cleveland.... | 1.10 | 1.40 | 1.40 | **1.50@ 1.60** |

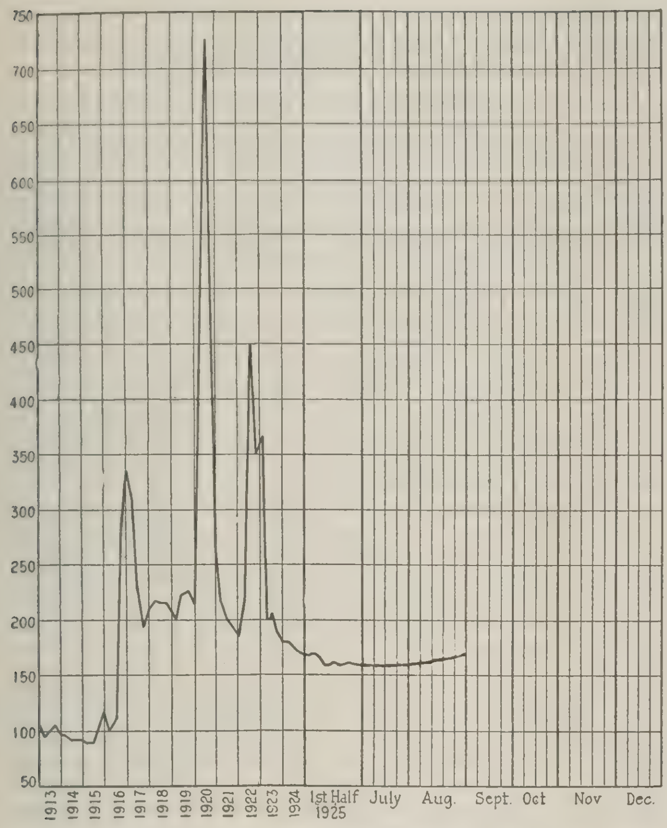
| Midwest | Market Quoted | Aug. 30 1924 | Aug. 17 1925 | Aug. 24 1925 | Aug. 31 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump....... | Chicago..... | $3.10 | $2.85 | $3.10 | $3.00@ $3.25 |
| Franklin, Ill. mine run.... | Chicago..... | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings.... | Chicago..... | 1.65 | 1.95 | 1.95 | 1.65@ 2.25 |
| Central Ill. lump......... | Chicago..... | 2.60 | 2.60 | 2.60 | **2.75@ 3.00** |
| Central Ill. mine run...... | Chicago..... | 2.20 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central Ill. screenings...... | Chicago..... | 1.55 | 1.55 | 1.55 | 1.35@ 1.75 |
| Ind. 4th Vein lump...... | Chicago..... | 2.85 | 2.85 | 2.85 | 2.75@ 3.00 |
| Ind. 4th Vein mine run... | Chicago..... | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings.. | Chicago..... | 1.65 | 1.60 | 1.60 | 1.50@ 1.75 |
| Ind. 5th Vein lump...... | Chicago..... | 2.50 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run... | Chicago..... | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings.. | Chicago..... | 1.50 | 1.45 | 1.45 | *1.15@ 1.30* |
| Mt. Olive lump.......... | St. Louis..... | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run...... | St. Louis..... | 2.50 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings..... | St. Louis..... | 1.75 | 1.75 | 1.75 | 1.75 |
| Standard lump.......... | St. Louis..... | 2.15 | 2.25 | 2.25 | 2.25 |
| Standard mine run....... | St. Louis..... | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings...... | St. Louis..... | 1.20 | 1.30 | 1.30 | 1.25@ 1.40 |
| West Ky. block.......... | Louisville.... | 2.25 | 1.85 | 1.85 | **2.00@ 2.25** |
| West Ky. mine run...... | Louisville.... | 1.60 | 1.30 | 1.30 | **1.25@ 1.50** |
| West Ky. screenings...... | Louisville.... | 1.30 | .75 | .75 | *.65@ .85* |
| West Ky. block.......... | Chicago..... | 2.30 | 2.00 | 2.25 | *2.00@ 2.10* |
| West Ky. mine run...... | Chicago..... | 1.60 | 1.35 | 1.20 | **1.15@ 1.35** |
| **South and Southwest** | | | | | |
| Big Seam lump......... | Birmingham.. | 3.15 | 2.00 | 2.00 | **1.90@ 2.50** |
| Big Seam mine run....... | Birmingham.. | 1.75 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed)....... | Birmingham.. | 2.00 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block.......... | Chicago..... | 2.30 | 2.55 | 2.80 | 2.60@ 3.00 |
| S. E. Ky. mine run....... | Chicago..... | 1.60 | 1.70 | 1.95 | 1.85@ 2.10 |
| S. E. Ky. block.......... | Louisville.... | 2.25 | 2.80 | 3.00 | *2.50@ 3.25* |
| S. E. Ky. mine run....... | Louisville.... | 1.50 | 1.55 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings...... | Louisville.... | .95 | 1.15 | 1.15 | 1.10@ 1.25 |
| S. E. Ky. block.......... | Cincinnati... | 2.50 | 2.55 | 2.70 | *2.40@ 2.75* |
| S. E. Ky. mine run....... | Cincinnati... | 1.45 | 1.55 | 1.60 | *1.35@ 1.75* |
| S. E. Ky. screenings...... | Cincinnati... | .95 | 1.15 | 1.15 | 1.10@ 1.25 |
| Kansas lump............ | Kansas City.. | 4.50 | 4.25 | 4.35 | 4.25@ 4.50 |
| Kansas mine run........ | Kansas City.. | 3.50 | 3.10 | 3.10 | 3.00@ 3.25 |
| Kansas screenings....... | Kansas City.. | 2.50 | 2.50 | 2.50 | 2.50 |

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | August 30, 1924 | | August 24, 1925 | | August 31, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken............ | New York......... | $2.34 | ............ | $8.00@ $9.25 | ............ | $8.20@ $8.90 | ............ | $8.20@ $8.90 |
| Broken............ | Philadelphia........ | 2.39 | ............ | 8.90@ 9.05 | ............ | 8.25@ 8.90 | ............ | 8.25@ 8.90 |
| Egg............... | New York......... | 2.34 | $8.50@ $9.00 | 8.75@ 9.25 | $9.75@ 10.25 | 8.65@ 8.90 | **$10.00@ 11.00** | 8.65@ 8.90 |
| Egg............... | Philadelphia........ | 2.39 | 9.00@ 9.70 | 9.00@ 9.05 | 8.90@ 9.70 | 8.70@ 8.85 | 8.90@ 9.70 | 8.70@ 8.85 |
| Egg............... | Chicago*.......... | 5.06 | 8.17@ 8.27 | 8.14@ 8.20 | 8.17@ 8.60 | 8.03@ 8.28 | 8.17@ 8.60 | 8.03@ 8.28 |
| Stove.............. | New York......... | 2.34 | 9.00@ 9.50 | 8.75@ 9.50 | 10.00@ 10.75 | 9.15@ 9.40 | **10.00@ 11.25** | 9.15@ 9.40 |
| Stove.............. | Philadelphia........ | 2.39 | 9.35@ 10.00 | 9.05@ 9.10 | 9.15@ 10.75 | 9.15@ 9.30 | 9.15@ 10.75 | 9.15@ 9.30 |
| Stove.............. | Chicago*.......... | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 8.71@ 8.90 | 8.48@ 8.80 | **10.00@ 11.00** | 8.48@ 8.80 |
| Chestnut.......... | New York......... | 2.34 | 8.50@ 9.00 | 8.75@ 9.25 | 9.75@ 10.25 | 8.65@ 8.90 | **10.00@ 10.75** | 8.65@ 8.90 |
| Chestnut.......... | Philadelphia........ | 2.39 | 8.85@ 9.80 | 9.00@ 9.05 | 9.15@ 10.15 | 8.85@ 8.90 | 9.15@ 10.15 | 8.85@ 8.90 |
| Chestnut.......... | Chicago*.......... | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 8.35@ 8.60 | 8.28@ 8.50 | **10.00@ 11.00** | 8.28@ 8.50 |
| Pea............... | New York......... | 2.22 | 4.25@ 5.25 | 5.50@ 6.00 | 5.50@ 6.00 | 5.00@ 5.55 | **5.75@ 6.25** | 5.00@ 5.55 |
| Pea............... | Philadelphia........ | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | 5.50@ 5.90 | 5.00@ 5.50 | 5.50@ 5.90 | 5.00@ 5.50 |
| Pea............... | Chicago*.......... | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.18@ 5.36 | 5.05@ 5.36 | **5.25@ 5.75** | 5.05@ 5.36 |
| Buckwheat No. 1.... | New York......... | 2.22 | 2.25@ 2.65 | 3.00@ 3.15 | 2.30@ 2.60 | 2.50 | **2.30@ 2.75** | 2.50 |
| Buckwheat No 1..... | Philadelphia........ | 2.14 | 2.50@ 3.00 | 3.00 | 2.50@ 2.75 | 2.50 | 2.50@ 2.75 | 2.50 |
| Rice............... | New York......... | 2.22 | 1.75@ 2.00 | 2.00@ 2.25 | 2.10@ 2.30 | 2.00 | *2.00@ 2.25* | 2.00 |
| Rice............... | Philadelphia........ | 2.14 | 2.00@ 2.25 | 2.25 | 2.00@ 2.25 | 2.00 | 2.00@ 2.25 | 2.00 |
| Barley............. | New York......... | 2.22 | 1.15@ 1.50 | 1.50 | 1.50@ 1.75 | 1.50@ 1.60 | **1.60@ 1.80** | 1.50@ 1.60 |
| Barley............. | Philadelphia........ | 2.14 | 1.50 | 1.50 | 1.50@ 1.75 | 1.50 | 1.50@ 1.75 | 1.50 |
| Birdseye........... | New York......... | 2.22 | ............ | 1.60 | ............ | ............ | ............ | ............ |

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Aug. 31 | Aug. 24 | Aug. 17 | Aug. 30 |
| Index .................. | 174 | 172 | 167 | 164 |
| Weighted average price.. | $2.10 | $2.08 | $2.02 | $1.99 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

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tonnage is good. The Standard district is lagging just a little. New mines are starting up and increased working time at those in operation keeps the tonnage just a little ahead of the demand, but prices are not good—just about the cost of production. Steam is slow and hard to move. Railroad tonnage is fair. Mines are working three to five days a week.

Domestic business in St. Louis is good, especially on Illinois high-grade. Anthracite, smokeless and coke are moving slowly but Mt. Olive and Standard are beginning to pick up. Wagonload steam is quiet and carload steam is just a little under the supply. Country domestic business is unusually good on all sizes and is turning from high grade to middle grade on account of the high prices. A lot of eastern Kentucky coal is moving into central Illinois and Iowa territory and a lot of western Kentucky into the Missouri territory. Retail prices will be advanced Sept. 5.

### Kentucky's Trend Is Upward

The eastern Kentucky coal market remained unchanged over the week as the operators had poked it up to a point where production was meeting with plenty of competition from the big union mines north of the Ohio River. It has been contended that when eastern Kentucky hit a peak of $3 a ton, the advance would stop. However, the anthracite strike may raise this maximum a little.

During the week the western Kentucky market, which has been advancing slowly but surely for several weeks, took another spurt, prepared prices advancing, along with mine run, while screenings are a shade weaker in that field, due to strong production. Although the strike of 1924 was never officially adjusted, the miners returned to work in most plants, and are too busy to become troublesome.

Eastern Kentucky is still quoting some 4-in. block at $2.50, principally in the Hazard field, but most coal of this size is selling at $2.75@$3, with specialty fuels at $3.25. Egg and lump are $2.25@$2.50; nut, $2@$2.25; mine run, $1.50@$1.75; screenings, $1.10@$1.25. Western Kentucky 6-in. block is as high as $2.50, general quotations being $2@$2.25; egg and lump, $1.85@$2; nut, $1.40@$1.75; mine run, $1.25@$1.50 and screenings, 65@85c., the bulk of screenings moving at 75c. or better.

### Northwest Trade Brisks Up

Dock operators at Duluth and Superior experienced better all-round interest in the market during the last few days. Cooler evenings after a long heated term are stimulating domestic demand. The near approach of the threatened strike of anthracite miners served to bring in more orders for hard coal from dealers over the Northwest.

From present indications, strike or no strike, there will be a greatly increased turnover of Pocahontas and other smokeless coals on the Head-of-the-Lakes market during the fall and winter months. Retail yards already have batches of orders for those coals booked from consumers who had up to the present never taken anything else than anthracite. Some dock officials think they are likely to run short of Pocahontas coal and they have been pressing their mines connections for further shipments. Two price advances in lump, egg and stove sizes of Pocahontas totaling $1 during the last three weeks, brings the dock figure up to $8. Mine run and screenings are unchanged at $5.25 and $4.25 respectively. Slightly better ordering of bituminous coals was reported from industrial quarters.

Allowing for a final 10c. advance, anthracite prices as of Sept. 1 are: Egg, $13.10; stove, $13.50; nut, $13.35; pea, $10.10, and buckwheat, $8.50. Receipts of anthracite have been from one to two cargoes weekly. Hard coal on the docks has been cut down to around 375,000 tons.

The movement of coal from the East is continuing in good volume to this market. Forty-one cargoes, including two of anthracite, were unloaded at the docks during the last week and ten cargoes, all anthracite, were en route.

Managers of coal docks and retail dealers at Milwaukee report a brisk demand for fuel—not particularly for anthracite, as might be expected as a result of apprehension over labor conditions at the mines, but for bituminous coal, which is going out freely to consumers in the Northwest. Beginning this week, retail dealers advanced Pocahontas, making egg $11.75 shoveled and $12.50 carried to bins; nut, $10.75 and $11.50 respectively, and mine-run, $8.50 and $9.25. Hocking egg and nut were marked to $8 and $8.75, and splint to the same figures. Receipts by cargo for the season to Aug. 27 total 2,104,048 tons. Receipts of anthracite are 7,378 tons short of the receipts up to the same date last year, but the receipts of bituminous coal are 368,793 tons greater than in the corresponding period in 1924.

### Southwest Trade Improves as Fall Nears

The approach of fall is improving the Southwestern market, but only Kansas of the Southwestern states is prepared for full production. Few mines are operating in Missouri. The McAlester (Okla.) district is more or less stable with a 1917 wage scale, but in the Henryetta field union opposition to the 1917 scale, which has not completely stopped production, is preventing profitable operation. In Arkansas, where some pay the 1917 scale and others operate under that of 1924, some of the largest operating companies of the Southwest have made no move to reopen their mines.

The Colorado coal market continues to show considerable improvement. Many large shippers are working to full capacity and orders are being booked for late October and November delivery, which is unusual for this time of the year. August production was the heaviest in years. Inquiries are coming from sections that this field has never been able to reach before. Prices were revised Sept. 1 as follows: Walsenburg fancy domestic lump was advanced 25c. to $5.50; washed nut is $4.75; washed pea, $3.25; high-grade Crested Butte anthracite Nos. 1 and 2, $7.25, and Nos. 3 and 5 (base burner size), $7.75.

The winter storage business in Utah seems to have really commenced at last. It is not heavy, however. There might not have been any appreciable winter storage business for heating purposes yet had not the fall weather been a little early this year. Prices remain as steady as ever. It is almost a year since the last major change.

### Trade Notably Active at Cincinnati

In the Cincinnati market the supply of smokeless coals was practically sold up for August early last week and standard operators were accepting business for September delivery at a contract price of $2.25 for mine-run and $3.75 for lump and egg. Little if any smokeless domestic was sold on the domestic market.

Steam and byproduct coals have been much more active on this market and it is apparent that considerable buying is being done for reserves, influenced by the threatened tie-up of anthracite production in the East. Buyers are operating cautiously but are steadily increasing their orders.

The demand for high-volatile domestic coals was not so keen during the last week, perhaps because of the warmer weather. There was no trouble in selling the entire production, however, the feverish call alone being missing. Prices held firm all along the line.

There was an increase of production for the week in all the districts. The C. & O. carried in excess of 24,000 loads and other coal roads broke records. Approximately fifteen thousand coal loads passed through the Cincinnati gateway last week for the North and West, which was a gain of about 1,100 over the preceding week.

Lake shipments, which had fallen off for a few weeks because coal production was diverted to better markets, showed a disposition to come back, due to the willingness of lake buyers to pay a better price for coals of satisfactory quality. There were 3,831 lake loads through the Cincinnati gateway, a gain of 479 over the previous week.

Tidewater demands for smokeless mine-run are getting better all the time and the low stocks in the face of this call are helping the price. A considerable tonnage sold at $4.85 during the last week.

Cincinnati retail dealers are getting $8.50 for smokeless lump and egg, an advance of $1. Some dealers have added 50c. to the price of high-volatile block, but this is not general as yet.

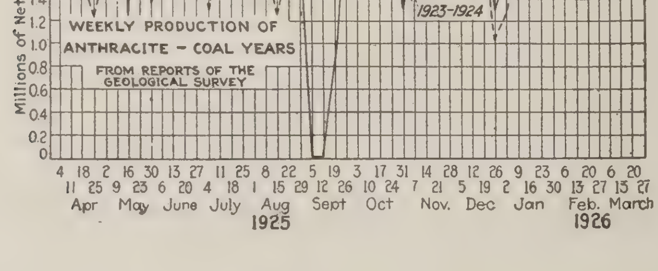
Domestic trade at Columbus continues active. More mines are opening. Retailers are buying fast and requesting immediate shipment. Producers and distributors from West Virginia and Kentucky are taking new orders only for delivery after Sept. 15 as all of the output has been disposed of up to that time. Advancing prices are noted in all fields.

Up to Aug. 15 there was only about 20 per cent of the fuel required for householders delivered in Columbus and many other cities and towns in Ohio. This, of its own accord, would naturally stimulate the domestic trade. Retailers are advancing prices in sympathy with the higher levels at the mines. Smokeless is selling from $8.25 to $8.75 and splints from $7.25 to $7.75 and in some cases even higher. Hocking lump has not shared much in the general advance but sells for $6@$6.75 depending on preparation.

Steam trade has not shared in the general strength of domestic sizes. Buying is still rather haphazard and much of it is from hand to mouth.

Production in the southern Ohio field is increasing, especially in the Pomeroy Bend section, where more mines are being put into operation, mostly on the 1917 wage basis.

The anthracite trouble has greatly stimulated operations and the market in eastern Ohio. Smokeless has stiffened sharply and mine prices both on Pocahontas and West Virginia splint are now $1 to $1.50 above those of a month ago. Steam inquiries are more numerous and railroads, public utilities and manufacturers are increasing their supplies. Output in eastern Ohio during the week ended Aug. 22 totaled 261,000 tons, or about 37.3 per cent of potential capacity. This is 11,000 tons over the preceding week but 35,000 tons under the corresponding week a year ago.



### Pittsburgh Prices Firmer

Coal prices at Pittsburgh have made no definite advances of importance but they show a firmer tone. Coal moves readily now whereas until recently it was either difficult or impossible. The increase in buying is wholly within the normal market area for Pittsburgh district coal. Former buyers probably are consuming a little more and are now stocking in a moderate way. The anthracite situation stimulates this. Buying of domestic coal by retail dealers is fully as heavy as would be expected at this time of year.

There are no further developments in wage and labor matters. The coal trade at large considers the starting of the Banning mine by the Pittsburgh Coal Co. a small event. It is almost on the fringe of the district and is near the Washington Coal & Coke Co.'s operations—always non-union—and near the Bethlehem Steel Corporation mines, which recently became open-shop.

In spite of the anthracite situation soft coal shows no local disturbance at Buffalo. None is anticipated unless a hard-coal strike runs a month or more. West Virginia is still trying to advance its bituminous prices, especially on lump, but Buffalo shippers say they cannot get any more for it. Gas slack is still scarce and lump is not plentiful, but the consumers object strongly to paying any increase for them.

Bituminous quotations are still $1.60@$1.75 for Fairmant lump, $1.40@$1.50 for mine run and $1.25@$1.40 for slack, on the $2.39 rate; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, $1.30@$1.60 for slack, on the $2.24 rate; $1.75@$2 for Allegheny Valley mine run, on the $2.09 rate. No. 8 is scarce because so many mines are closed.

### Firmness to Last in New England

Now that the anthracite suspension is a fact the New England trade feels the present firmness in bituminous is likely to continue. Prices on prepared coal in the West have advanced sharply as anthracite shipments have diminished, and while there is as yet no material increase in demand here for mine-run for steam purposes the Hampton Roads basis is decidedly up from quotations of a week ago. It is understood that $4.75 was paid several days ago by large interests, and that $4.85@$4.90 is the current level, with occasional sales at $5. Several of the larger distributors as well as certain of the agencies have been obliged to buy small tonnages to complete cargoes, and on these lots the price has been quite as firm as any in the open market.

On cars Boston and Providence both Pocahontas and New River are in reasonably good request at $5.90@$6, an advance of more than 50c. within a few weeks. This has induced many consumers to put in coal where otherwise they would have waited until fall. Receipts are not large and all factors are moving their summer accumulations with little or no difficulty.

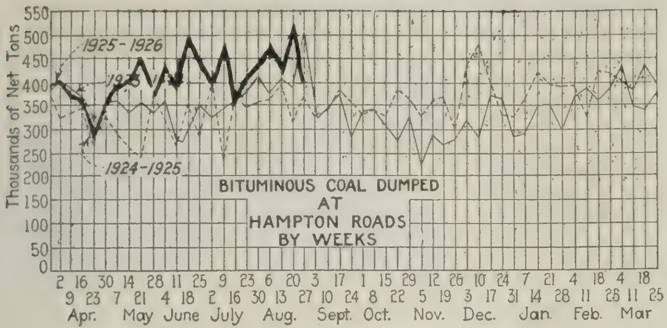
In the quality grades from central Pennsylvania there are signs of renewed interest, but at this writing what demand there is has arisen west of the Connecticut River. The on-car level of Pocahontas and New River at New Haven, Providence and Boston is not yet high enough or hard enough to warrant purchases all-rail in tidewater territory. Even on the low basis quoted per net ton f.o.b. mines the superior coals in Pennsylvania are still out of line with those from the smokeless districts.

The trade is awaiting with considerable interest whatever developments may follow with respect to prepared Pocahontas and New River all-rail as a substitute for anthracite. There is a feeling that unless there is an acute shortage of the latter the delivered cost will be too high to make the West Virginia screened coal attractive.

### Market "Looks Up" in New York

The bituminous coal market at New York is "looking up." Demand continues to grow slowly but surely and local houses believe the industry has turned the corner. There is not so much free coal around because of the heavy Western demand. Some operators have been able to get a slightly higher price for the better grades.

High-volatile coals are in a better position due to lake demand. Advances of from 10c. to 15c. over last week's quotations are asked by local shippers.



Coal at the piers is commanding a better position. Demand is better and an occasional higher price is reported.

The Philadelphia soft coal market gathers strength. Producers of better grades report themselves well sold up. Some of them refused a week ago to take any more business for August and were also unwilling to quote a price beyond the end of the month. They are trying for the anthracite market with only moderate success thus far. This is also true of those in the coke trade who specialize in sized coke for home use. Contract customers are calling for their coal. Shippers are not contracting any more tonnage.

Bituminous coal at Baltimore after many weeks of almost continuous quotations at the same low rate, is now advancing. Practically all grades of steam and gas coals are 10c. higher at the mines. Production is still more than abreast of demand, but surplus stocks in the East are lessening rapidly. The export situation is reviving. During the last week of August there were three clearances, principally for Italian ports, with 21,246 tons cargo and 1,940 tons in bunkers.

### Birmingham Market Strengthens

The Birmingham market is improving steadily. Buying of domestic coal has begun in a small way and quite a few orders are being taken from the smaller towns and communities in the territory for spot shipments. Dealers in Texas also are buying in Alabama. Shipments to dealers on contract have improved, though restrictions to some extent are still effective. The retail trade, however, is still far from satisfactory. Little household coal has been stored as yet.

Steam power plants throughout this and adjoining states are now operating full time. The severe, prolonged drought has badly crippled the operation of hydro-electric plants. Large consumers are expected to begin the stocking of a reserve supply in the near future. The bunker trade is normal.

Quotations on steam coal have firmed up during the week. The better grades of washed coal are in strong demand. Domestic sizes showed the customary Sept. 1 increase. The district output for the week of Aug. 15 was 389,000 net tons, an increase of about 42,000 tons over the same week a year ago.

Demand for foundry coke is stronger at $4.50@$5 per ton ovens. Nut and egg coke also are moving very well.

### Anthracite in Sharp Demand

Considerable activity existed in the anthracite market at New York last week. Buyers were everywhere in evidence and retail dealers willingly stored all shipments. A few hundred loaded boats were in the harbor but they belonged to retail dealers who anticipated a shortage after Sept. 1.

The larger companies continued to take care of their regular customers as best they could. Independent operators were rushed with orders, many of them having already withdrawn from the market so far as new business was concerned.

Egg and stove sizes were most in demand, although there was a heavy sprinkling of chestnut orders. Pea coal was in heavy call, wanted mostly by inland dealers.

Firmness marked the steam coals. All sizes were strong and quotations for independent product higher than company schedules.

In spite of the strike the Philadelphia market still has a spirit of calmness. Business is active, however. Dealers have all received a little bit more coal than they had anticipated. There is an inclination in some quarters to quietly complain of preparation. Possibly most of this is due to the increased quantity of washery coal that is coming to market, and in addition it is felt that breakers are also running through a bit of bank coal.

Retail prices have not changed. Of course there will be no announcement of September prices by the companies inasmuch as they will have no fresh-mined coal for sale. However, a few of the larger concerns with a light tonnage of egg, stove and nut in storage, and a good stock of pea, will ship these sizes until they are exhausted. All steam sizes are moving briskly, with the independents all sold up. There are no premium prices of moment.

The Baltimore anthracite situation is naturally made interesting by the hard coal strike. While coal is still coming through on delayed shipments, nobody is taking orders at the rates offered at the mines a week ago, and no one is guaranteeing deliveries. Independents raised prices all the way from 50c. to $1.25. Meanwhile, the retail dealers in Baltimore are not excited. Between 60,000 and 70,000 tons are on hand. September prices have not been set.

The anthracite situation at Buffalo is of course much strained, for the demand is strong. Distributors say that they could sell several times as much old line company coal as they can get. The independent trade is booming, but the volume is not great. The premium is from $2 up. Sales are made when a consumer or dealer gets tired of waiting for company coal.

Lake shipments have dropped down to a single dock and that is not running fast. Clearances for the week were 26,100 tons, of which 16,400 tons went to Milwaukee and 9,700 tons to Duluth.

### Connellsville Coke Active Again

Week before last Connellsville furnace coke had its sudden spurt, spot coke going from $3 to $3.25, while two fourth-quarter contracts were made at $3.50 and $3.75 respectively. Last week the market was dull, with no change in prices. This week the market has been active again, as to spot and early shipment.

Buying has been almost entirely by Eastern consumers, some of them not regular patrons of the region. The turnover has not been large compared with the volume moved sometimes when blast furnaces are buying, but it is a distinct improvement over the low production rate the region has had for months past. The production lately has been well balanced by contracts with furnaces, either for the current quarter or for the half year, leaving little coke to spare, while operators are indisposed to blow in ovens except as they see clear prospects of being able to dispose of their coke for some time.

The buying, therefore, has sent prices upward. Sales in the past few days have ranged from $3.35 to $3.65, last week's price of $3.25 being out of the question. Price has varied in individual transactions according to tonnage, period and keenness of buyers. Spot lots brought the lower prices; deliveries over a week or two the higher prices. The market is $3.35@$3.65, but this should be designated as spot and prompt rather than as merely spot.

There is nothing new in fourth-quarter contract furnace coke. Foundry coke is scarcely more active than it has been lately. It would take a good deal of activity to make foundry coke follow furnace coke. The spot foundry coke market is still $3.75@$4.25, but is firmer.

The coke trade at Buffalo is not active. It will probably wait till the furnaces start up. There is much preparation for turning out a larger supply anticipatory of a heavy household trade. Most of the local byproduct oven companies have appointed special salesmen for their surplus. It is said that a good part of the increased bituminous output is going into coke.

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## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Aug. 15, 1925 | 1,064,793 | 190,979 |
| Previous week | 1,051,611 | 189,761 |
| Week ended Aug. 16, 1924 | 953,408 | 145,263 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Aug. 14, 1925 | 217,190 | 62,058 | ........ | ....... |
| Aug. 7, 1925 | 238,876 | 72,054 | ........ | ....... |
| Aug. 15, 1924 | 278,476 | 127,801 | ........ | ....... |

# Foreign Market And Export News

## Britons Want Prices Cut Because Of Government Subvention

The Welsh coal trade is in a difficult and unsettled state following the wages negotiations. Operators are short of orders and constantly exposed to the "bearing" tactics of prospective buyers, who are trying to take advantage of the government subvention to obtain a substantial cut in prices.

Consumers both at home and abroad had previously laid in stocks of coal against a stoppage and they are in no need of purchasing immediate supplies. Some of the pits previously closed down have been reopened and more pits are working longer hours than before the negotiations.

Business at Newcastle for August and early September shipment is bad, home business is slow and export trade is difficult to obtain. The entire trade is purely from hand to mouth and at the moment there is little prospect of any fresh business. The Finnish State Railways have contracted for 16,000 tons of D.C.B. steams at 21s. per ton, c.i.f. Helsingfors. Beyond this there is no contract to report.

Output in Great Britain executed a poor come-back after the week of the August bank holiday, attaining a total of but 4,370,000 tons, according to *Coal Age's* special cable. Cardiff coals last week declined in price from 6d. to a shilling, but Newcastle maintained the levels of the week before.

### The French Coal Market Prices Advance Steadily

In spite of the fact that British collieries resumed work Aug. 3, coal business in the Sarre is lively enough. Sarre collieries had to raise their prices Aug. 1 and will probably have to increase them again so as to offset the 5 per cent wage increase which has been granted the miners. So it is to be expected that competition, from that side, will be less fierce in France.

Industrial fuels show a slight improvement. However, consumption of industrial grades does not absorb the total French output. August brought with it symptoms of a rally in domestic business but normal business activity will not be resumed before mid-September. Semi-bituminous sized fuels are extremely firm, and bituminous screened rather neglected.

Shipments have been hampered by the lack of cars. Freight on the waterways, in consequence, has seen an increase.

During July the Office des Houillères Sinistrées received from the Ruhr 671,500 tons of indemnity fuels, including 378,100 tons coal, 264,500 tons coke and 28,900 tons lignite briquets, making a daily average of around 21,600 tons.

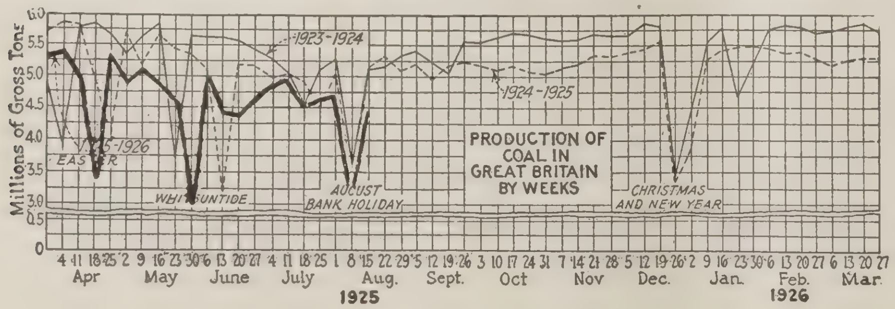
### U. S. Coal Exports Increase Heavily in July

Total exports of bituminous coal from the United States during July, 1925, amounted to 1,648,395 long tons, the heaviest exports of any month since September, 1923, according to the Coal Division, Department of Commerce. This figure compares favorably with the 1,435,973 tons exported in June and the 1,356,933 tons in May. Exports to Canada totaling 1,310,052 tons were the highest monthly shipments to that destination since September, 1923, and are largely responsible for the heavier total exports.

Total exports of anthracite totaled 462,676 tons compared with 313,535 in June. The July exports were the heaviest monthly shipments since June, 1921, and the second highest since August, 1920. This large increase is due mainly to heavier exports to Canada, 442,906 tons being shipped against 303,000 in June.

### No Strength Yet in Belgian Industrial Coal Market

The Belgian market for industrial fuels continues weak. Rebates are conceded nearly everywhere; in the Borinage, for instance, one shipper has applied decrease rate of 3 fr. on the greater part of industrials destined to the glass-making industry; and even greater rebates than this have been noticed. Coke reductions are noted also. Importers of British coals are disposed to cut prices to compete with German fuels. This has an unfavorable influence on the Belgian market. Home-fuels, however, remain relatively firm.



### Havana Imports More Coal

Coal and coke imported through Havana, Cuba, during the first half of the current year, as compared with the same period of the two previous years by months, was as follows:

| | 1923 Long tons | 1924 Long tons | 1925 Long tons |
|---|---|---|---|
| Jan. | 43,447 | 53,596 | 46,381 |
| Feb. | 60,968 | 35,863 | 37,462 |
| March | 49,335 | 34,215 | 39,125 |
| April | 41,800 | 38,751 | 53,062 |
| May | 38,759 | 21,514 | 43,046 |
| June | 46,000 | 34,908 | 36,935 |
| Total | 280,309 | 218,847 | 256,011 |

### Export Clearances, Week Ended Aug. 29, 1925

| FROM HAMPTON ROADS | |
|---|---|
| For France: | Tons |
| Fr. Str. P. L. M. 13, for Rouen | 5,634 |
| Nor. Str. Hellen, for Marseilles | 6,325 |
| Fr. Str. P. L. M. 16, for Rouen | 5,626 |
| For Brazil: | |
| Br. Str. Baron Inchcape, for Rio de Janeiro | 8,862 |
| Ital. Str. Carnia, for Rio de Janeiro | 6,883 |
| Br. Str. Boyne, for Rio de Janeiro | 5,803 |
| For Italy: | |
| Ital. Str. Sile, for Porto Farraio | 9,655 |
| For French West Indies: | |
| Br. Str. Trafalgar, for Port de France | 6,995 |
| For Cuba: | |
| Br. Str. Berwindmoor, for Havana | 9,162 |
| For Africa: | |
| Ital. Str. Fortunato, for Dakar | 6,028 |
| For New Brunswick: | |
| Br. Str. Glenardle, for St. Johns | 6,419 |
| FROM BALTIMORE | |
| For Italy: | |
| Greek Str. Anna, for Naples | 7,458 |
| Ital. Str. Uguaglianza, for Genoa | 6,289 |
| For Canada: | |
| Br. Str. Kilnsea, for Quebec | 7,499 |

### Hampton Roads Pier Situation

(Gross Tons)

| N. & W. Piers, Lamberts Pt.: | Aug. 20 | Aug. 27 |
|---|---|---|
| Cars on hand | 1,316 | 1,618 |
| Tons on hand | 82,776 | 101,791 |
| Tons dumped for week | 168,183 | 149,926 |
| Tonnage waiting | 10,000 | 14,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 835 | 700 |
| Tons on hand | 59,750 | 55,550 |
| Tons dumped for week | 98,435 | 95,437 |
| Tonnage waiting | 13,118 | 23,550 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,075 | 2,112 |
| Tons on hand | 103,775 | 106,290 |
| Tons dumped for week | 192,114 | 122,328 |
| Tonnage waiting | 12,825 | 9,900 |

### Pier and Bunker Prices, Gross Tons

| PIERS | Aug. 22 | Aug. 27 |
|---|---|---|
| Pool 1, New York | $5.25@$5.55 | **$5.35@$5.60** |
| Pool 9, New York | 4.75@ 5.00 | **4.85@ 5.00** |
| Pool 10, New York | 4.50@ 4.65 | 4.50@ 4.65 |
| Pool 11, New York | 4.25@ 4.50 | 4.25@ 4.50 |
| Pool 9, Philadelphia | 4.65@ 4.90 | **4.80@ 5.00** |
| Pool 10, Philadelphia | 4.35@ 4.55 | **4.50@ 4.70** |
| Pool 11, Philadelphia | 4.25@ 4.30 | **4.30@ 4.55** |
| Pool 1, Hamp. Roads. | 4.40 | **4.50@ 4.75** |
| Pool 2, Hamp. Roads. | 4.25 | **4.60@ 4.85** |
| Pools 5-6-7, Hamp. Rds. | 4.15 | **4.60** |
| BUNKERS | | |
| Pool 1, New York | $5.50@$5.80 | **$5.60@$5.80** |
| Pool 9, New York | 5.00@ 5.25 | **5.10@ 5.25** |
| Pool 10, New York | 4.75@ 4.90 | 4.75@ 4.90 |
| Pool 11, New York | 4.50@ 4.75 | 4.50@ 4.75 |
| Pool 9, Philadelphia | 4.80@ 5.05 | **5.00@ 5.20** |
| Pool 10, Philadelphia | 4.60@ 4.80 | **4.70@ 4.85** |
| Pool 11, Philadelphia | 4.45@ 4.65 | **4.55@ 4.75** |
| Pool 1, Hamp. Roads. | 4.50 | **4.60@ 4.85** |
| Pool 2, Hamp. Roads. | 4.35 | **4.70@ 4.95** |
| Pools 5-6-7, Hamp. Rds. | 4.25 | **4.70** |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Aug. 22 | Aug. 29† |
|---|---|---|
| Admiralty, large | 25s. | *24s.@24s.6d.* |
| Steam smalls | 13s.6d.@14s. | *12s.6d.@13s.* |
| Newcastle: | | |
| Best steams | 16s.3d. | 16s.3d. |
| Best gas | 24s.9d. | 24s.9d. |
| Best bunkers | 17s.9d. | 17s.9d. |

† Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

James W. Whatley has resigned as manager of sales for the DeBardeleben Coal Corporation after a service of about two years. Prior to going with the DeBardeleben corporation, Mr. Whatley was in charge of coal and coke sales for the Tennessee Coal, Iron & Railroad Co. for the greater part of his twenty years service with that company, and is regarded as an authority on questions of fuel salesmanship. Mr. Whatley has not announced his future plans.

The Sloss-Sheffield Steel & Iron Co. will soon complete the connecting links at each end of the Praco branch of the Louisville & Nashville R.R. which will enable the company to handle the output of its Flat Top mines direct from the operation to its large byproduct plant at North Birmingham, with its own equipment and crews, effecting an enormous saving in freights. Trackage rights were obtained from the Louisville & Nashville R.R. by an agreement effected some months ago.

The Roden Coal Co., with mines at Marvel, Bibb County, has adopted a novel and effective plan of placing the good qualities of its domestic coal in the public eye and mind by the erection of a large electric sign on the Roden Building, Second Ave. at Twentieth St., Birmingham, the most strategic point in the business section. This sign is 33 ft. wide and 26½ feet high and intermittently flashes an advertisement of the merits of the celebrated Marvel product, which is extensively used throughout southern territory.

## COLORADO

Carl De Lockte has been appointed by Governor Morley to serve on the Industrial Commission to fill the vacancy created by the death of Mr. Saunders.

## ILLINOIS

Franco No. 3 mine, employing 300 men, has resumed hoisting coal, after having been idle all summer. It was announced that the reopening was made possible by increased orders from mail-order houses in Chicago. An agreement has been reached whereby the miners will be equipped with electric lamps.

A petition asking authority to dispose by public sale of all the properties of the Southern Gem Coal Corporation and the Southern Gem Coal Co. was filed in United States court at East St. Louis, Aug. 22, by W. S. Wilson of Pinckneyville, and N. C. McLean of East St. Louis, Mo., as receivers. Judge George W. English set Sept. 2 as the date for the hearing. The receivers point out that all negotiations and conferences to rectify the concern's affairs have proven futile. They also state that in spite of the appointment Jan. 26 of receivers that the company's debts, which had been estimated at three million dollars, have continued to increase. The companies own coal mines in Franklin and Perry Counties.

Two mines, A of the Central Illinois Coal Mining Co. and Woodside Mine No. 53, at Springfield, Ill., have resumed work after having been closed for several months. Three hundred miners are on the job in the two.

The construction of a steel tipple and the setting of two boilers is in progress at the new coal mine opened on the Santa Fe Ry. north of Knoxville, and east of Galesburg, by the Galesburg Coal Co.

Glen Young, mine boss at one of the Taylorville mines, and a group of associates have leased the mine of the Assumption Coal and Mining Co., at Assumption, seven miles north of Pana, and plan to reopen it employing 100 men.

The Macon County Coal Co. of Decatur, and the Decatur Coal Co. have been merged into one corporation each company retaining its identity and continuing under its own name. The capital stock of the Macon County company formerly $200,000 will be increased to $500,000 after the $100,000 capital stock of the other company is included. Stockholders in the Decatur company will receive Macon County Coal Co. stock for their interests. W. J. Grady will head the new company as president, with C. F. Mattes, vice-president and J. N. Baker, secretary-treasurer. John Armstrong, former president of the Macon company becomes a director of the consolidation, as does David W. Beggs, who was president and general manager of the Decatur company. Other directors are: W. J. Grady, C. F. Mattes, W. S. Ridgley, E. D. Mattes, S. D. May, Forrest File, F. A. Tuttle and John Diller.

Owen M. Fox has left the Black Diamond to become executive vice-president of the Chicago Coal Merchants' Association.

William Mauch, of Danville, a veteran coal operator in the Danville district for many years, has been appointed mine inspector for the eastern district of Illinois to succeed Daniel Reese, who died recently. Mr. Reese had held the office 26 out of the last 31 years.

## INDIANA

The Eagle Coal and Mining Co. and the J. K. Dering Coal Co. have been made defendants in a suit brought in Superior court in Terre Haute by Mary A. Collins, Clifford Collins, Clarence Collins and Clara House who claim $10,000 damages, alleging that the defendants have mined coal too near the surface of their land so that the foundations of a house, a barn and other buildings have been undermined and a well was drained.

The tipple at the Thomas mine, near Brazil, recently was destroyed. The Brazil fire department tried to save the structure, but the entire top plant is virtually a total loss.

Trial of Bruce Rogers, superintendent of the Kings mine, near Princeton, operated by the Deep Vein Coal Co., charged with firing shots in the mine in an unlawful manner, has been set for Oct. 1 in the Gibson County Circuit Court. The case is attracting considerable attention in Indiana mining circles as it is being prosecuted under the recently passed "shotfirers' law." One hundred and twenty indictments were originally returned against Rogers, but 60 of these have been quashed by Circuit Judge C. A. Smith, who will sit in the case.

## KANSAS

The Bureau of Mines safety department will conduct an intensive drive in safety work in the coal mines of southeastern Kansas during the next three or four months. Vernon Allison, associate chemist of the department reached Pittsburg, Aug. 26, to give lectures and demonstrations to the miners in advance of J. J. Forbes, of the safety extension service of the Bureau of Mines, who directs the campaign.

Not only the team from Western Coal & Mining Co. mine No. 20, which won the Kansas State first-aid and rescue meet, but also the Jackson-Walker Coal & Mining Co. team which won second place, will attend the international meet in Springfield, Ill., Sept. 10 to 12. A fund was raised in advance of the state meet to send the winning team and since then a purse has been made up to defray the expenses of the second team, which will motor to Springfield.

An attempt to wreck the steam shovel of the Dunkirk Coal Co. near Mulberry early in the morning Aug. 23 was frustrated when an employee noticed the odor of smoke and upon investigating found that it came from two burning fuses leading to a box containing

125 sticks of dynamite. He rushed from the pit and called an officer. When they reconnoitered a little later the fuses had ceased to burn before reaching the dynamite. Bloodhounds unhesitatingly picked up a trail to the house of Walter B. Greek, who was employed at the mine. A fingerprint expert from the Pittsburg police department asserted that prints made from Greek's hands corresponded with those found on one of the sticks of dynamite. A few days before, Greek was reprimanded for being slow.

## KENTUCKY

Lonnie Jackson, Mayor of Central City, who resigned as president of District 19, United Mine Workers, in 1924, because he was not in sympathy with the Jacksonville-agreement strike in western Kentucky, has resigned as mayor of his city, effective Aug. 21, in order to give his entire attention to his real estate and other ventures.

A deal is pending by which the Harlan Coal Co., of Louisville, may take over the mines and equipment of the Letcher Coal Mining Co., at Elsiecoal, on the Louisville & Nashville R.R., nine miles from Whitesburg. The Letcher operation has been in litigation for some time, and was to have been sold at court house door some weeks ago, but the sale was postponed.

Although there has never been any agreed settlement of the strike in western Kentucky, which was called on April 15, 1924, the field is running freely, with plenty of labor available, and majority of miners back at work, the strike having been a losing proposition for the union. While it cost operators a good deal of money, the situation in the field today is better than for a long time past.

The West Kentucky Coal Bureau, composed of the western Kentucky operators, and principally interested in handling traffic matters, will meet at the Seelbach Hotel, Louisville, Sept. 8, this being the first meeting since spring. There was a suspension of meetings over the hot weather.

Philip C. Watson, who has been with his father, R. A. Watson, in the R. A. Watson Coal Co., jobbers and retailers, of Louisville, has gone with the Blue Diamond Coal Sales Co., as resident sales agent in Michigan. His headquarters are at Grand Rapids.

A. H. Stepp, formerly manager at Louisville for the Southern Coal Co., has joined the Hawley McIsaacs Co., at Madisonville, to help in that company's big stripping project.

## MONTANA

The Montana miners are taking a hand in a buy-Montana-coal campaign of publicity now going on. The United Mine Workers district organization estimates that 500,000 tons of coal are imported into Montana every year, enough to represent the full-time output of the Red Lodge group of mines for 190 days.

**Barthell, or No. 1, Mine, Stearns Coal & Lumber Co., Barthell, Ky.**

Coal is brought to the tipple from both sides of this picturesque hollow. Note how the hills are capped with many feet of solid sandstone.

## OHIO

The Blackstone Coal Co., at Rutland which took over the former No. 4 Maynard Coal Co. mine, the tipple and power houses which were recently burned, has reopened the property after an idleness of two weeks. Only mine run is loaded. The company has purchased complete equipment for its tipple including shaker screens, picking tables and loading booms which will be installed soon.

Work has been resumed at the mine of the Central West Coal & Lumber Co., located at Jacksonville. The mine has been idle for about six months following the burning of the tipple. At the time of the destruction the company had installed loading machines which had been operated successfully. The machines are again in use.

## PENNSYLVANIA

The Duquesne Light Co., subsidiary of the Philadelphia Co., has awarded a contract to the Dravo Construction Co. for the sinking of a new mine shaft at the Harwick mine, Rural Ridge.

The possibility of a strike in the hard coal regions had the effect of stimulating buying from central Pennsylvania hence the production there increased. The loading for the week ending Aug. 22, were 15,825 cars as compared with 13,519 cars for the week ending Aug. 15. The August loadings to and including Aug. 22 were 42,001 cars, compared with 37,054 cars for the same period in July.

Cambria County coal operators somewhat ironically thank the Interstate Commerce Commission for doing so much as to mention bituminous coal, especially low-volatile coals, as a "substitute" for anthracite fuel. Operators declare: "Bituminous coal runs the workshop of the world. It runs nearly everything west of New York. It runs New York, too, railroads, ships, electric light and power plants. About the only thing it doesn't do is supply heat for residences through cellar heaters." They claim that Cambria County coal goes in a steady stream to Edison Electric and other big New York plants. It keeps freight moving. It is not a substitute for anything, though there may be some substitutes for bituminous coal.

Men at the Kinloch mine of the Valley Camp Coal Co. at Parnassus, who six weeks ago, entered an agreement with officials of the company to forego wages for that period, have been paid, and all is happy. The mine continues in operation.

The Carnegie Steel Co. is offering, through outside selling agents, 1,000 tons of Clairton byproduct nut coke daily, which it expects to sell largely in the east where buying is expected to be stimulated because of the anthracite tie-up. These selling agencies are offering the coke to dealers in the east at $4.50 f.o.b. Clairton. The coke is all one size, ⅞ x 2 in., and is sold because it is too small to be used in the blast furnaces.

The No. 4 mine of the Stineman Coal Co. at South Fork which was closed down on July 1 resumed work Aug. 24, but is not being operated to capacity. It is also reported that the company may soon reopen its No. 1 mine.

The Saxman Coal & Coke Co., Derry township, near Greensburg, has purchased approximately 125 acres of coal adjoining the Peanut plant of the company from the Latrobe-Connellsville Coal & Coke Co.

Through stock purchase, the Pennsylvania R.R. has acquired the Western Allegheny R.R., a coal line 47.8 miles long which runs from West Pittsburgh, near New Castle, to the North Penn Coal Co. mines at Kaylor, Pa., near the Allegheny River. The railroad was owned by interests identical with the North Penn Coal Co., and it is understood the stockholders benefited by the transaction.

The United States Engineer's office at Pittsburgh in issuing a report on tonnage for July showed that there were moved on the Monongahela River, 1,384,368 tons of coal and 101,502 tons of coke; on the Ohio River in the Pittsburgh district, 302,940 tons of coal and 37,800 tons of coke, and on the Allegheny River, 16,400 tons of coke.

## SOUTH DAKOTA

The Dakota Feldspar Co., of Rapid City, is opening a new coal mine 17 miles northeast of Hot Springs. This mine is in connection with a mine of berylmica, the lode of the latter mineral having furnished the incentive for previous coal development when feldspar had intrinsic value.

## UTAH

The Carbon County coal mining officials and others accused of lynching a negro miner in June who brutally murdered the Castle Gate town marshall, have not been indicted by the grand jury which examined 120 witnesses. It was declared no satisfactory evidence connecting the men with the lynching of the murderer could be obtained. The district attorney announces that he will prosecute the men in another way later. In the meantime, the defendants are heros throughout the coal mining camps of Carbon County.

F. N. Cameron, vice-president of the Utah Fuel Co., of Salt Lake City, has returned from a three months tour of Europe, accompanied by his wife and daughter, Myra.

Twenty-nine persons were killed in Utah coal mines during the year ending June 30, according to the report of the State Industrial Commission. All but two of the accidents occurred underground, eleven of them being due to falling coal. There were twenty-seven permanent partial injuries during the same period, falling coal being the cause of one-third of them.

A bulletin just issued by the U. S. Bureau of Mines says that during the decade ending Aug. 31, 1923, 1,078 net tons of coal was mined in Utah per man, basing the figures on all employees engaged in coal mining. The average for the nation during the same period was only 743, according to the report. The daily output per man in Utah was stated to be 6.7 net tons of coal, compared with but 4.3 tons for the national average.

Moroni Heiner, vice-president and, until a short time ago, also general manager of the United States Fuel Co., says Utah has 46,000,000,000 tons of recoverable coal, and that there are nearly 15,000 square miles of workable coal in the state. He said that about one-half of the coal produced in the state is used for domestic purposes. There were said to be 5,353 men employed in coal mining in the state on an average for the year ending June 30, 1924, with a payroll of $9,160,937, $1,711.36 being the earnings of an average miner for the year. The average price of coal per ton at the mines was given at $2.89 in 1923, the entire output being worth $13,657,000.

## WEST VIRGINIA

With the mines along the Monongah Division of the Baltimore & Ohio R.R., loading 1,034 cars of coal in the week ended Aug. 22, a new weekly figure for the 1925 lake shipping season was reached. The previous peak loading of the season was in the week ended Aug. 8, when 991 cars were produced.

Due to the heavy movement of anthracite the eastern railroads obtained more bituminous coal for use on their roads from the Fairmont region. In the six weeks preceding Aug. 22, the mines along the Monongah Division of the Baltimore & Ohio R.R. loaded 7,939 cars or 396,950 net tons of railroad fuel. Approximately 60 per cent of this coal was obtained by the foreign carriers.

In the Monongalia circuit court recently Judge I. Grant Lazelle of Morgantown, issued a temporary injunction restraining the Connellsville By-Products Coal Co. (J. A. Paisley interests) and the Cochran Coal & Coke Co. from mining coal in their Pittsburgh seam lying under the main headway of the Sewickley seam of the Continental Coal Co. in Scott's Run. The first application for a restraining order was made Aug. 11.

**First Car of 1917-Scale Coal from Pittsburgh District**

This car was loaded at Banning No. 2 mine of the Pittsburgh Coal Co. at Whitsett Junction, Pa., on the Pittsburgh & Lake Erie R.R., 43 miles from Pittsburgh. The car holds 70 tons and was loaded Saturday, Aug. 22. Standing on the track beside the car is William Lauder, division manager, Pittsburgh Coal Co., in charge at Banning. The mine had opened at the request of the men on Aug. 20 with 36 men. The next day 89 were on the job. On Aug. 24 another mine in the Pittsburgh district opened on the same basis and the movement was spreading.

The following West Virginia coal companies have gone out of business through a surrender of their charters to the secretary of state: Blue Flame Fuel Co., Raleigh Smokeless Coal Land Co., Logan Mining Co., Main Island Coal Corporation, Block and Gas Coal Mining Co., Eastern Utilities Coal Co. The North American Coal Co. and the Beckley Pocahontas Coal Co. have been dissolved by a decree of court.

The Hillman Coal & Coke Co., a Pennsylvania corporation has been authorized to do business in West Virginia.

Preparations are being made for the annual first-aid meet of the New River Co. which is to be held Sept. 26. The New River company was the first in West Virginia to adopt the "Hundred per cent mine safety" slogan. The meet will follow the general plan of the first-aid meet at Holden held by the employees of the Island Creek Coal Co. last month. D. J. Parger, of Pittsburgh, chief engineer, mine safety service, Bureau of Mines and several other officials of the Bureau of Mines will attend the meet.

After working on an open shop basis one year, miners employed at Eagle mine of the Clark Coal & Coke Co. near Hepzibah, Harrison County, celebrated the event by holding an outing on Aug. 22. A program was rendered. The mine worked 309 days and loaded 5,607 steel hoppers. There were 28 acres of coal or 280,552 tons of coal mined. The company claims that no other mine in the state worked that many days in a year.

John F. Phillips, president of the Delmar Coal Co., of Fairmont, has signed contracts with the Metropolitan Life Insurance Co. which provide for his employees group life insurance totaling approximately $115,000, in addition to health and non-occupational accident benefits. The policies were written on a co-operative basis, the employees sharing the cost.

W. M. Rowan, of Grafton, who was vice-president of sub-district 3 of District 17, United Mine Workers, was recently elected as commissioner by the miners employed by the Consolidation Coal Co. under the company contract plan and the 1917 wage scale. Another commissioner is to be chosen to represent the company. The name of Tom Lewis, who was once international president of the United Mine Workers of America, is mentioned, although no selection was made from last reports.

The Hardy Coal Co., with plants in the Thacker district of West Virginia on the Norfolk & Western Ry., is soon to issue $750,000 in 10-year 7 per cent notes redeemable in whole or in part any time at 101. It is announced that with each $1,000 note, five shares of stock will be given, the price of both to be $800. That will mean $600,000 for the $750,000 notes, plus 3,700 shares of stock. The proceeds from the sale of notes will be used to liquidate all floating debts and to purchase additional equipment to enable the company to increase its production. This company hopes soon to reach a monthly production of 60,000 tons. In July, the Hardy Coal company produced 45,000 tons that proving to be a record month. The issue of $750,000 notes has been subscribed.

Coal operators interested in the $100,000,000 Flint merger were called to New York City last week for conferences, which were conducted by Bickmore & Co. and A. H. Flint & Co. with individual companies. The general belief is that the merger will be consummated soon. There are twenty-four coal companies included in setup No. 1.

Thomas W. Arnette, president of the Antker Coal Co., has returned from a two months' trip to Colorado and the Pacific Coast. Mr. Arnette attended the triennial session of the Grand Encampment of the Knights Templars of the United States in Spokane, Wash., recently.

The Bethlehem Mines Corporation, operating mines at Barrackville and Dakota, has ordered a large number of roller bearing mine cars, which constitute somewhat of an innovation in northern West Virginia territory. Other large orders for cars have been placed by the New England Fuel & Transportation Co. The Everettsville mine of the New England company has broken all its own records recently for the production of coal. This mine has exceeded 800-mine cars output per day.

A survey being made by engineers of the Chesapeake & Ohio Ry., up Glade Creek is thought to presage the development of coal and timber land in Richmond district of Raleigh County.

The mines of West Virginia took a toll of 37 lives in the month of July, twenty deaths being due to fall of roof, coal and slate. Mine car accidents were responsible for six fatalities, motor accidents, three, mining machines, five and electrical shock three. All of the fatal accidents occurred inside the mines. McDowell County mines led in the number of accidents, seven occurring in that county. In Logan there were five fatalities and in Fayette four. Three fatal accidents occurred in Monongalia and two each in Marion and Mingo Counties. One death occurred in each of these Counties: Barbour, Brooke, Boone, Grant, Greenbrier, Harrison, Kanawha, Marshall, Mercer, Preston, Raleigh, Taylor, Upshur and Wyoming.

The Costanzo Coal Mining Co. of Wheeling has leased a part of the old Nichols farm from Albert Schenk and others of Wheeling for the purpose of mining coal. Royalties on the coal mined will be paid as consideration for the lease.

It is the intention of the purchasers of the Smith Pocahontas Coal Co. to reopen the mine of that company in about a month. The property and assets of the company including a plant near Mullens in Wyoming County on the main line of the Virginian were recently sold at public sale and bid in by J. C. Pack, of Bramwell. In preparation for the reopening of the mine, prospectors are making tests for new entries. Before closing down last January the company encountered rock in such abundance that profitable mining of the seam was out of the question.

Justus Collins, president of the Smokeless Fuel Co. of Charleston and also head of a number of large coal producing properties in West Virginia and Kentucky, has completely recovered from a protracted illness of several months and is able to be at his desk again.

## CANADA

The government of Nova Scotia has requested the British government to appoint a chairman to head the commission which will soon be established to inquire into the coal industry of the province, in accordance with the terms under which the Cape Briton strike was settled.

The strike of coal miners in the Edmonton field was terminated on Aug. 23 when a meeting of miners held at Beverly voted by a small majority of the 125 men voting to return to work on the terms of the operators. The reduction in wages amounts to 13 per cent for contract rates and 5 and 10 per cent for company and day men. Work was to be resumed on Aug. 26.

Prof. W. C. Worcester, of the University of Saskatchewan, who was in charge of carbonizing and briquetting tests of Canadian lignite coal in Germany, has returned to Canada and reports that the tests have been technically successful. The work was carried on for two summers at two of the largest briquetting plants in Germany. Fifty-two tons of lignite from the Western Dominion Collieries at Taylorton, Sask., were used in the tests.

With a full cargo of 2,200 tons of Welsh coal for the Welsh Anthracite Coal Co., of Toronto, the steamer *Knut* docked in Toronto a few days ago, having come direct from Swansea, Wales. This is the fifth vessel that has come overseas this season with coal for this company.

The Public Utilities Committee of Winnipeg, Man., has accepted the tender of the Harstone Coal Co. for the supply of 15,000 tons of Greenhill, Alberta slack coal at $7.67 per ton, required for the central heating plant at Winnipeg.

Shipments of Alberta coal to Toronto over the Canadian National Rys. at a special reduced rate have been discontinued for the present to give the right of way to the movement of grain. When this is over they will be resumed until the full amount of 25,000 tons of coal has been hauled.

The output of the Cape Breton mines is steadily increasing. On Aug. 18 the production of coal amounted to 11,266 tons. On Aug. 19 the number of men at work was 6,195, of whom 4,695 were underground. Mine No. 21 at Birch Grove is permanently closed down and is being dismantled. The bank-head structure and machinery are being removed to No. 11 where a fire took place during the strike. The troops, with the exception of about 150 soldiers, have been removed from the district.

Production of coke in Canada during the month of July amounted to 89,221 tons, the lowest tonnage yet recorded for any month this year, and a drop of 19 per cent from the output of 109,694 tons in June. This decline was largely due to the strike among the coal miners in Nova Scotia. Ontario ovens produced 51,903 tons or 58 per cent of the total production in Canada. Imports of coke in July totaled 55,542 tons as compared with 55,836 tons in June while exports dropped to 1,683 tons from 3,567 tons in the preceding month. For the seven months ending July, 325,470 tons of Canadian coal and 900,579 tons of imported coal were converted into 803,068 tons of coke. During the same period Canada imported 396,598 tons of coke making a total supply of 1,199,666 tons of which 27,735 tons was exported leaving 1,171,931 tons available for consumption in Canada.

# Traffic

### To Hear Carriers Next Week

The Interstate Commerce Commission has announced that at the Sept. 8 hearing in Chicago, Ill. on ex-parte 87 and Docket No. 17,000 which provides for a general freight rate adjustment in the Midwest including an increase of 15c. on coal, the time will be too limited for the presentation of direct evidence by shippers and the public. Instead there will be a further hearing for them at a later date. Carriers and associations of security holders will be heard only.

Dismissal of the complaint of the Fifth and Ninth Districts coal traffic bureau attaching rates on coal from mines in the Belleville district of Illinois to Kansas City, Mo., and other western points is recommended in a report submitted to the I.C.C. by the examiner.

A new regulation of the New York Central R.R., approved by the New York Public Service Commission, provides that switching charges of connecting lines at Buffalo, N. Y., will be absorbed on coke, carload, having road haul via New York Central, but not to exceed 38c. per ton (net or gross as rated). Effective Sept. 15, 1925.

# Obituary

**David T. Evans**, at one time a coal operator in the Kanawha field, died suddenly late in August at Huntington, W. Va. For a number of years Mr. Evans was one of the operators of the Mount Carbon Co., Ltd., Powellton, W. Va. Several years ago, however, he disposed of his interests in the Mount Carbon company and in the Cabin Creek Consolidated Coal Co., in which he was a director, and entered the oil refining business at Kenova. Funeral services were held in Huntington, where Mr. Evans was buried.

## New Companies

**The Putnam Coal Co.**, of Peoria, Ill., has been incorporated with capital of $10,000 to mine and ship coal. The incorporators are Charles M. Putnam, Charles M. Putnam, Jr., and John Evers, Jr.

**The Fairfax Collieries Co.**, of Dorfee, W. Va., has been incorporated by C. H. Schafer and D. C. Prichard, both of McMechen, with a capital of $500,000. The chief operations of the company are in the Henry district of West Virginia.

**The Carter Coal Co.** was incorporated in Madisonville, Ky., the first week of August, with a capital stock of $30,000, by Jewel Avis, Coleman L. Jones and others.

**The College Hill Coal Co.**, of Jacksonville, O., has been chartered with a capital of $22,000 to mine and sell coal in the Hocking Valley field. Incorporators are L. E. Holmes, C. D. Williams, William C. Hilt, James Mackie and Albert Cannon.

**The New North Coal Mining Co.**, Springfield, Ill., has been incorporated with capital of $50,000 to engage in the business of mining and selling coal. The incorporators are B. Schreiber, Charles H. Sutton and C. I. Schreiber.

**The Chelsea Coal Co.** has been organized and incorporated by L. E. Compton, W. O. Meyers and J. F. Dowis of Pittsburg, Kan., and J. A. Holland of Mulberry, Kan., to operate a steam shovel mine on a 600-acre lease near Chelsea, Okla. The sale of coal will be handled by the Security Fuel Co. which Mr. Holland and associates conduct with a sales office in Kansas City.

Organization of the **Ohio Valley Coal Co.**, with $100.000 capital stock to engage in coal mining has been completed with several Indianapolis men as directors. The list includes Frederick M. Ayres, Clarence Stanley, Victor C. Kendall, Samuel Ashby, O. H. Stout, Sidney A. Stout and Thomas C. Mullins. Mr. Ashby, an Indianapolis attorney, said the company had not obtained coal properties at this time, but intended acquiring mines in the Ohio valley states within a few months.

**The Jefferson Block Coal Co.** has been incorporated at Jasonville, Ind., with a capital stock of $6,000 to do a mining business. The incorporators are W. Russell Johnson, Joseph Rogers and Henry Neal.

## Coming Meetings

**Oklahoma Coal Operators' Association.** Annual meeting, Sept. 10 at McAlester, Okla. Secretary, A. C. Casey, McAlester, Okla.

**New York State Coal Merchants' Association.** Annual convention, Sept. 10-12, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**Association of Iron and Steel Electrical Engineers.** Annual meeting at Philadelphia, Pa., Sept. 14-19. Secretary, John F. Kelly, Empire Bldg., Pittsburgh, Pa.

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries,** Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**American Welding Society.** Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

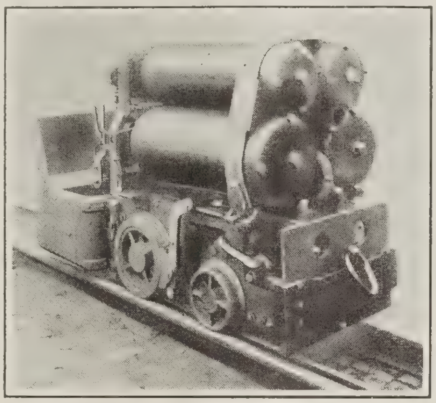
**Fourth National Exposition of Power and Mechanical Engineering,** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

# New Equipment

## Compressed Air Locomotive Is a Midget

For certain uses or under certain conditions the compressed air locomotive is still employed. Where conditions in the mine dictate the use of this type of machine two varieties or weights have been in general use—the haulage motor and the gatherer. A third type or midget machine has recently been developed and placed on the market by Messrs. Demag, of Duisburg, Germany. This is about comparable in size and weight as well as in the service it is intended to render to the electric shuttler recently placed on the market in this country.



**Four Tanks Store the Energy**

This machine is charged with air at the etreme pressure of 2,600 lb. It is intended for light work only, such as moving only a few cars at a time over comparatively short distances. It is safe in any mine atmosphere and can move over any track that will support a mine car.

Chief dimensions of this German machine are as follows: Weight, empty, 2 tons; speed, 5 to 6.2 m.p.h.; capacity of air tanks, 7 to 9 cu.ft.; charging pressure, 2,200 to 2,600 lb. per square inch; pressure of air entering cylinders, 206 to 235 lb. per square inch; useful performance about $7\frac{1}{2}$ ton miles per hour overall width $31\frac{1}{2}$ in.; length, 79 in.; height 59 in.; length of wheelbase $20\frac{3}{8}$ in.; distance traveled per charge of 2,200 lb., about 6,900 ft. or 1.13 miles; with 2,570 lb. of a charge this distance can be increased to about 8,500 ft. or 1.6 miles; normal power output, 4 h.p.; maximum power output, 6 hp.; normal drawbar pull, 339 lb.; maximum drawbar pull, 550 lb.

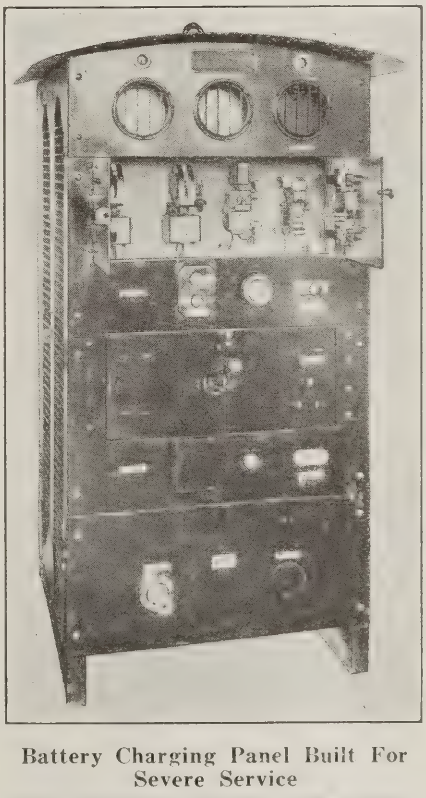
In the design of this locomotive it was the constant aim to keep all dimensions to a minimum. As a result this machine can be run onto the hoisting cage and moved up or down in the shaft with no more dismantling than the removal of the driver's seat. This is a light sheet-iron casing that may be easily attached or removed without interfering in the least with pipe connections operating levers or the like.

Because of this light and compact construction this machine may be employed on several different levels being transferred from one to the other by the regular mine cage. Again, in the event that heavy repairs become necessary it may be run onto the cage and hoisted to the surface where these repairs may be performed in the light of day. Furthermore, the machine is so light that it may be run to any part of the mine over any rail that is heavy enough to carry a loaded mine car. Even with its light weight, however, its drawbar pull is sufficient to haul eight to ten cars each weighing about 2 tons.

## Strongly Inclosed Battery Charging Panel

A specially designed and completely self-contained battery charging outfit is now in operation in one of the large anthracite mines in Pennsylvania to withstand the rough treatment to which underground equipment is often subjected. The outfit was built in the form of a switchboard panel by the General Electric Co.

The housing framework is made of machine steel, welded, with a missile-proof covering on back and sides of $\frac{3}{4}$ in. expanded metal grill, No. 13 standard gage. The roof is formed of a heavy plate of 0.156-in., stretcher-leveled steel, having the customary gentle roll for shedding water. An extra heavy I-belt is fastened through the roof to the framework to provide for



**Battery Charging Panel Built For Severe Service**

Only authorized persons have access to the equipment in this inclosed cabinet. Even the meters are protected against tampering yet are visible at all times.

easy shifting of the equipment, by crane or handles, from one part of the mine to another.

A strong clip, suitable for a padlock, on the doors provides protection against meddling by unauthorized persons. The meters at the top of the panel are viewed through three portholes, protected by bars.

The doors of the upper section when opened expose the relays and contactors. The right-hand door carries a reset handle for the overload relay thus allowing the operator to reset the relay without unlocking the door.

A handwheel for the dial switch, a push-button station and a voltmeter switch are all mounted on the solid portion of the panel directly below the swinging doors of the upper middle section.

The electrical equipment, consisting of standard battery charging apparatus, is especially finished to prevent corrosion.

## Simple Priming Device Aids Centrifugal Pumps

To meet the demand for a vacuum pump suitable for use in priming the smaller sizes of centrifugal pumps, Barrett, Haentjens & Co., of Hazleton, Pa., has brought out the device shown in the accompanying illustrations. In outward appearance this much resembles the machines of a similar character previously developed by this firm. It is, however, small and simpler in its construction.

This pump is intended for use in conjunction with a vacuum breaker and, consequently, is of the dry type. As a result, water does not enter this machine, it requires little power, operating stresses are reduced to a minimum and the working parts are not subject to rust or corrosion. Its simple construction is of marked advantage when making inspections or repairs to any of the internal working parts. The drive chain, as may be seen, is carefully guarded.

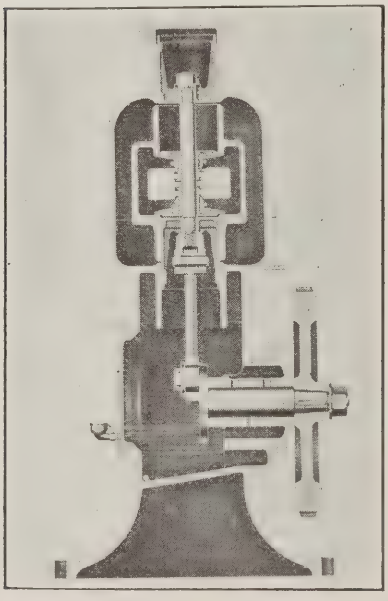


Fig. 1—Cross-Section of Priming Pump

This machine is intended for operation in conjunction with a vacuum breaker. Thus no water can find its way into the working parts, which consequently, are not subject to rust or corrosion. Lubrication is automatic.

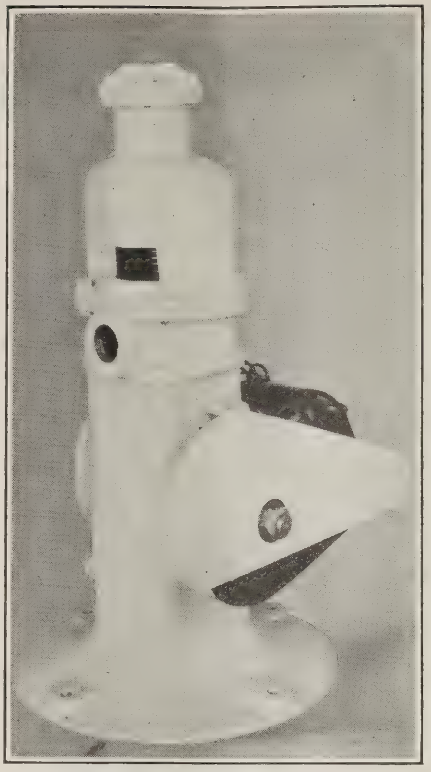


Fig. 2—Ready for Installation

This shows the self-contained priming unit ready to be set up and connected to the pump it is to serve. As may be judged from this illustration the floor space is small as is also the necessary head room.

The manufacturer claims the following advantages for this new machine: The pump is a compact unit requiring little floor space or head room. Automatic lubrication of all moving parts conserves oil and reduces the amount of necessary attendance. The machine is built without inlet valves, air enters it through parts that are alternately covered and uncovered by the piston. Both exhaust valves are located at the ends of the cylinder, are seated by a single spring and are always visible. Such simplicity of construction makes for easy running and long life.

## Industrial Notes

**The Cutler-Hammer Mfg. Co.**, Milwaukee, Wis., has purchased the business and patents of Payne Dean, Ltd. The Dean valve-control apparatus has always been manufactured by the Cutler-Hammer Mfg. Co., and they have recently also manufactured much of the other equipment sold by Payne Dean, Ltd., such as the auxiliary power plant apparatus. Mr. Dean and many of his associates are now connected with the Cutler-Hammer Mfg. Co. and will actively assist in the promotion of this work.

A contract for the construction of shaker screens and tipple equipment for the **Dawson Daylight Co.**, Dawson, Ky., has been awarded the **Earlington Machine Works**, at Earlington, Ky. The Dawson concern operates a strip mine. Its tipple was destroyed by fire on July 21.

**The Westinghouse Electric and Manufacturing Co.** has received a $500,000 order for electrical equipment from the Comal Power Co. of San Antonio, Tex., through the U. G. I. Contracting Co. The new plant is designed to use powdered coal. This enables the power company to use the low grade coal or lignite mined in that vicinity at a big saving.

**The American Cable Co.** has appointed the firm of Bruntons, Musselburgh, to handle its general line, including Tru-lay wire rope and Tru-loc fittings, in Scotland. The Dominion Wire Rope Co., Montreal, is a new Canadian distributor. Other new distributors are: The Marion Machine, Foundry & Supply Co., Marion, Ind., J. Shuman Hower, 106 Foster Bldg., Utica, N. Y., The Contractors Equipment Co., 8 Steuben St., Albany, N. Y., and John C. Louis, 221 S. Eutaw St., Baltimore, Md.

**Clarence L. Cook** has joined the sales organization of the **Fairmont Mining Machinery Co.**, after having been with the Pittsburgh Coal Washer Co.

**J. V. N. Dorr**, president of the **Dorr Co.**, arrived on the Olympic, Aug. 26, after spending two and one-half months in Europe in connection with European business of the company.

## Trade Literature

**C-E Air Heater.** Combustion Engineering Corporation, New York City. Catalog A H-2. Pp. 14; 8¾x11 in.; illustrated. Describes the construction, operation, performance and applications of this heater.

**Reilly Oil Heater.** The Griscom-Russell Co., 90 West St., New York City. Form 402. Leaflet describing and illustrating how this apparatus uses live steam to provide the proper degree of preheating of oil for thorough atomization at the burners.

American Blower Co, Detroit, Mich., has issued Bulletin No. 3506 on **"ABC" Steel Plate Exhaust Fans.** The bulletin has 25 pp., 8½x11 in., with illustrations and tables. The company also has issued a 4x7-in. bulletin superseding Price Book 1129 and Price Book 1129-A, containing prices and information on electrically driven fans and blowers for exhausting, blowing, ventilating, drying and cooling.

Pennsylvania Pump & Compressor Co., Easton, Pa., recently issued Bulletin No. 122, describing its **Aftercoolers;** No. 123, describing its Class 3-A and 4-A **Air Compressors** and class 7-A and 8-A on **Vacuum Pumps;** Bulletin 124, describing its **Portable Air Compressors.** These bulletins are 8½x11 in., illustrated.

**The Venturafin Method of Heating** is the name of an 8½x11-in. book issued by the American Blower Co., Detroit, Mich. The book is well illustrated, showing the different installations where the Venturafin method has been installed.

The C. J. Tagliabue Mfg. Co., Brooklyn, N. Y., has issued a new and revised edition of its catalog on **Automatic Controllers** for temperature, pressure, humidity, liquid level, condensation, etc. It contains 84 pp. and is well illustrated.

**Anchor Rerailers.** T. H. Edelblute Co., Pittsburgh, Pa. A four-page folder describing and illustrating the installing of the rerailers at coal mines, metal mines, etc.

**The Air-Lift Method of Pumping Water by Compressed Air.** Pennsylvania Pump & Compresor Co., Easton, Pa. Bulletin No. 118. Pp. 12; 8½ x 11 in.; illustrated. A discussion of the air-lift method, with tables.

**Jeffrey Belt Conveyors.** The Jeffrey Mfg. Co., Columbus, Ohio. Catalog No. 409. Pp. 52; 7½ x 10½; illustrated. Contains descriptions of various types of standardized belt conveyors for use in practically every industry where loose materials or packages are handled.

**Uehling Vacuum Recorder, Type D.** Uehling Instrument Co., Paterson, N. J. Bulletin No. 140. Leaflet describing the construction and working of the recorder which operates on the mercury-column principle and employs no moving parts, springs or diaphragms.

The Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., recently issued its new 1925-27 catalog of electrical supplies containing 1,200 pp. and well illustrated. Includes all new apparatus designed and manufactured in the past two years, as well as all previous types, brief descriptions of the company's industrial motors and controllers, power and marine equipment, large switchboards and oil circuit breakers and railway supplies. The book contains a complete subject index, style number index for checking invoices, classified index and thumb index which enables the user to locate any section of the catalog.

S. Flory Mfg. Co., Bangor, Pa., recently published Catalog No. 31, containing 72 pp.; 6 x 9 in.; illustrated. The catalog is devoted exclusively to Flory **hoisting machinery** for construction and material handling operations.

COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
E. J. MEHREN, *Vice-President*

Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

R. DAWSON HALL
*Engineering Editor*

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## Island Creek

THIS IS THE ISLAND CREEK number of *Coal Age*. The story of how Island Creek Coal Co. has grown in technical, physical and economic importance in the world of coal is presented in the leading articles of this issue, not because that company is a paragon of coal operating virtue but because it has risen so strongly over faults and handicaps that have consigned many another such organization to mediocrity.

Vision, vigor and the application of keen intelligence have done much from 1902 forward to make Island Creek Coal Co. one of the most consistently profitable coal properties in the history of the industry. Favorable natural and labor conditions do not account wholly for this. Method is in part accountable. Coal men everywhere who are reaching out for management and operating ideas that will improve their own businesses and thus help in today's advance of the coal industry to a higher plane of efficiency will eagerly read the pages of this issue to learn Island Creek method.

## No Disagreement, but—

A FEW YEARS AGO the conservatives of the United Mine Workers saved that organization from the folly of an out-and-out declaration in favor of the nationalization scheme imported from Russia via England by referring the question to a special committee for further study and report. A few days ago the subject so dear to the radical dreamers and the addled-thinking "economists" whom Ellis Searles so aptly dubbed Greenwich Village coal diggers was again dragged forth by energetic newspaper reporters eager to brighten up a humdrum story of the anthracite deadlock.

John L. Lewis has been prompt to disclaim responsibility for the resurrection. The stories "reviving discussion of the theory of nationalization of the coal industry," he states, "do not originate with the mine workers." John Hays Hammond, declares the president of the United Mine Workers, must bear the onus because the chairman of the United States Coal Commission "has been haunting the lawns of White Court, pestering the President" to abandon the traditional government policy of non-interference with business and establish a semi-regulation of the anthracite industry. "It is obvious," Mr. Lewis sagely remarks, "that any legislation enacted by Congress dealing with anthracite must similarly be superimposed upon the bituminous industry." Such regulation, Mr. Lewis has indicated both publicly and privately, is not advocated by the United Mine Workers.

With the federal operation of railroads still a vivid memory and the Shipping Board mess a constant reminder of what happens when the government undertakes to step out of its natural sphere, only a minority would favor regulation of either branch of the coal industry except as a last alternative. It is cheering, therefore, to find such an influential ally as Mr. Lewis lifting his voice in protest against renewing consideration of the perpetration of that economic crime. It would be more encouraging, however, if Mr. Lewis was not exercising his control over the coal industry in such a way that many otherwise sober-minded citizens are driven to believe that what he denounces offers them their only relief from his tyranny.

Mr. Lewis breathes brave words against regulation, but his actions are the strongest support of the school he condemns.

## Maintenance and Success

WHEREVER WE FIND coal properties which stand out as efficient profit-making producers, such as the Island Creek mines described in this issue, we invariably soon observe that unusually good supervision and care is given the mining equipment. In these days one hardly need argue that low-cost operation should go hand in hand with the use of labor-saving equipment. But, strangely enough, although most men admit that the success of a mine depends largely upon the amount of equipment it uses, they forget that poor maintenance and careless operation limits the usefulness of apparatus and profit it can make.

If it is worth while to invest a large amount of money in a machine, why isn't it also worth while to insure its continued operation and success by providing adequate repair facilities?

Breakdowns and delays to haulage systems often tie up production in a section of a mine employing many men who must remain idle until service is restored. A main hoist or power substation failure may shut down a whole mine for a day or more. Only by regular inspection to avoid such accidents and by providing sufficient repair parts can a mine hope to be able to pay its overhead for every day it is in operation.

## Consumers and the Safety Problem

SUCH A MODERATE USE of rock dust as does not invade the rooms probably will not greatly affect the sale of coal. The public, however, will view with disapproval any dustiness of product where the dust does not resemble fuel and some difficulty may be experienced in disposing of the ribs and stumps of entries, where they still retain a heavy coating of rock dust. However, this coating could be washed off with a hose before shots are fired. Where extensive sprinkling is done and fine coal adheres to the large lumps the retailer complains, for he finds he has more screenings. The consumers find that they have a dusty coal. Thus the public is offering some resistance to modern safety methods.

The coal might be washed down after being prepared. After all, such a washing of the lumps, six or eight inches in diameter or larger will not add much moisture to the coal for what water is applied will speedily run off; but with the smaller sizes, or with run-of-mine it will result in shortage of weight, the railroad weight of coal and water not coinciding with that of the dry coal when it is received. Fortunately in these cases there is less objection to adhering fine coal and consequently washing down fine sizes will not be necessary.

## From the Courthouse Steps

DAY-BY-DAY SALES of coal mining property in sheriffs' hands during the summer was not a healthy thing for the coal industry. The effect that this sort of thing is bound to have on certain coal markets during the next year or so while margins on coal are slim cannot be overlooked. In sections of Kentucky sales from courthouse steps have put some bargains into the hands of buyers. A property valued at $600,000 sold for a mere $32,000. Another which sold less than two years ago for $250,000 went off the auction block at exactly one-tenth its value. There are others. The list is long.

The buyers probably can afford to operate these properties successfully even though the previous owners went broke trying to do it. The new holders' investment is so small that their depletion charge, interest on bonded indebtedness and other capital charges are practically nothing. The advantage this gives these companies in the market may be enough to completely undermine nearby markets upon which other and more regularly financed mines depend for their outlet. Thus the much heralded law of the survival of fittest which is supposed to be operative with especial effect in the coal industry, produces strange results.

## Score: Yellow Cab, 67; Coal, 23

MEN HONESTLY striving to overcome natural obstacles to efficiency in coal mining are irked by the high marks set up in certain other industries whose problems are not comparable to coal's. Take Eugene McAuliffe for instance. Mr. McAuliffe stands at any hour on the curb of almost any busy city street in America and witnesses the ant-like industry of the ubiquitous Yellow Cab. It never seems to quit work. Mr. McAuliffe ponders. Then, with his customary mental vigor he gathers up statistics on the Yellow Cab, compares them with statistics of coal mining, and, in his *Union Pacific Coal Company Employees' Magazine*, deals coal another black eye.

He says that John Hertz, the founder and, for 10 years, the actuating spirit of the Yellow Cab does what he does in the city streets of the land "by efficient organization expressed in good equipment, well maintained, and thereafter used. Before the recent collapse of the coal mining industry the average working year was 215 days out of 308, or on the basis of 8 hr. per day, 1,720 hr. per year. In Chicago the Yellow Cab Co. averages 16.2 hr. actual service per day, every day in the year, but eliminating holidays and assuming a year of 308 days, its cabs would operate 4,990 hours, or 290 per cent of the average mine year. Ninety per cent of the cabs are always ready for service, the peak demand coming at 1:00 a.m. Sunday (Saturday night); 70 per cent are double shifted; the cabs average 50,000 miles a year and last on an average three years.

"Our mines and mine equipment are employed about 23 per cent of the year (excluding holidays), while John Hertz's cabs keep busy 67 per cent of the time. Naturally it is a far step from coal mining to wiggling a cab through the streets of New York or Chicago, but the Hertz performance was developed in 10 years. The mining industry is now about 750 years old and efficient mechanization is just coming in, while the work year has gone back. We want more of the John Hertz mental attitude in the coal industry; such would mean better earnings, safer employment, happier men and cheaper coal."

True enough. We certainly do want more dauntless men of mental keeness in coal. The industry needs their stimulus, the mining art their freshness of vision. However, Mr. McAuliffe surely recognizes that severe limitations which Nature has fixed inflexibly upon underground mining makes it essential that efficiency of the coal industry be measured on a different scale from that of the Yellow Cab. The cab does not run continually in a low and caving tunnel. Its roadways are maintained for it by others. It can travel where it pleases. So long as it runs at all its income is up to standard. Can coal do that?

## Raw-Material States Suffer

IN A RAW-MATERIAL country capital seems to drift almost inevitably to the industries producing that raw material. Manufacturing gets only a passing consideration, and, consequently, in a state like Pennsylvania or West Virginia we see coal and iron traveling away to be used at distant points and the products of those raw materials being brought back after having paid transportation both ways. This is neither economical nor desirable, but it seems almost inevitable, constituted as we are.

Part of the overdevelopment of mineral resources comes from that very fact. The genius of the inhabitants of raw-material states is directed solely to that development. No matter how greviously the industry may have suffered or may be suffering, somebody is looking for an opportunity to open new mines, usually some impecunious person who cannot hope to compete because he cannot equip his mines adequately.

Utah, for instance, is suffering just now from the obsession. It is said that the state is cursed with too much coal. In Carbon County everyone has his eye on a coal mine rather than on the one hundred and one other possibilities, that would make Utah a well-rounded state.

Resting on only two or three industries, all based on raw-material production, any community has an extremely uncertain existence. When the particular raw materials are not wanted, business is dull to utter stagnation. No other place of employment or investment is open, and the towns waste away. Even the railroads, having nothing to haul, lay off men or give them short time.

Diversified industry is needed as much as diversified farming. We rebuke the cotton farmer for hauling in oats, wheat, corn and hay that he could grow on his own acres. We chide him for excessive anxiety to increase his cotton acreage in the face of the weakness of the cotton market, but the coal industry is no better. It develops far too many properties that should remain untouched. Let capital go into coal mining without limit, so far as it increases efficiency, but let it not be wasted in cheap, inefficient equipment that gluts the market while not lowering the cost. And above all, let it visit no more grief upon regions already overdeveloped.

***Island Creek Number***

# Would You Increase Tonnage and Reduce Costs? Island Creek Has Done It

## Careful Division of Area Among Mines of Large but Not Phenomenal Size—More Inspection and Less Repair — No Substitution of Coals—Towns to Attract More Desirable Men — Houses, Mines and Offices Easy of Access

**By R. Dawson Hall**
Engineering Editor, *Coal Age*,
New York City

NOT WITHOUT some basically correct principles of management and operation could the Island Creek Coal Co. of Logan County, West Virginia, have arrived at its present large production. Its mines will possibly produce this year more coal than those of any independent bituminous coal company. There must be some reason for this rapid rise to leadership, and it will be my endeavor to set down the cause of the growth of this company since 1902, when it started mining on a small scale at Holden in the heart of Logan County.

One of its prime principles relates to selling. It sells direct to the consumer, and it confines its business to its own coal. In consequence, it is not subjected to the loss of reputation which a producer of a good product inevitably sustains when some other coal is substituted for its own. All its business is done with coal that it knows is good and dependable, from beds that it is sure are clean, mined by men under its own supervision, carefully prepared and picked on its own tipples. As a good reputation is the basis of all successful business, it is not well to have other persons substitute inferior coal for a standard product nor is it advisable to do as is the practice of some operators, to ship fuels of other companies and from other mines and seams in place of their own. In short, the Island Creek Coal Co. does not itself substitute nor give others an opportunity to do so.

An operating principle that the Island Creek Coal Co. has adopted to its great advantage has been to divide up its field in carefully planned areas so as to minimize haulage, electrification and ventilating costs. Each mine has its predetermined area and each area is of a size appropriate to the physical conditions. The division of the whole field has been made easy by the many narrow valleys which give ready access to every coal section, though in some of them the Island Creek seam does not outcrop.

The Island Creek Coal Co. is not seeking to make big records for single mines. It is willing to leave that honor to other operators. Large gross tonnage from a suitable number of mines at a correct mining and transporting cost may not make headlines but seems more likely to, and actually does, produce dividends, certainly under Logan County conditions. Do not believe, however, that the company favors the operation of small mines in large numbers. Its largest mine is now producing 65,000 tons a month, and its newest operations, Nos. 20 and 21, are designed for a maximum daily output of 4,000 tons, quite a sizeable production even in these present days. In fact, whereas in 1923 the Island Creek Coal Co. produced 3.1 million tons of coal from nineteen mines in the Island Creek seam, in 1924 it had concentrated its activities to twelve mines and yet produced nearly 5 million tons. It found that the efficiency in operation was correspondingly greater, and at present it is mining at the rate of over 6 million tons with greater ease and a

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The tipple and slope at No. 1 mine are shown in the headpiece. The gallery and the slope shelter a belt conveyor 285 ft. long.

lower cost per ton than before. So the Island Creek company is an exponent of the value of the slogan "Better and fewer mines."

But such a practice of enlargement of operations reaches a limit, and the management of the Island Creek mines believes that a 4,000-ton-per-day mine is preferable for favorable conditions such as theirs. By keeping the size of its plants within limits such as these, it can avoid long hauls and simplify its ventilation problems.

Traveling from mine to mine one is impressed with the fact that the Island Creek Coal Co. is a believer in modernization and believes in it not alone in the restricted sense that when it starts a new mine it should make it the last word in mine construction. Shafts Nos. 20 and 21 are probably the most interesting installations of the company, and they are new, but all the plants are modern because they have been diligently modernized. A long series of reconstruction jobs have made available every new form of production help. Old tipples have been replaced by new, and right now two new tipples are being built to do the work more inexpensively and more effectively than those they replaced.

When the slopes at several of the mines were first driven they were timbered, but coal dust tended to collect on the collars and the management feared that this dust would create an explosion hazard. In consequence the slopes have been lined with concrete. Underground equipment is constantly being replaced and supplemented. Notable changes of this kind have been the recent installation of about 2,000 low-type steel mine cars equipped, like every car on the job, with roller bearings. The use of electric coal drills is another evidence that the Island Creek company is not behind-hand in its modernization program. These are only a few of the ways in which this company has brought its operations abreast of the times.

And we have here by no means a company without a past. It has had time and plenty of opportunity to grow moss-backed and time-worn but it lacked the disposition.

Since 1902 when ox teams laboriously hauled equipment over the mountains a distance of eight miles from the village of Dingness, W. Va., on the Norfolk and Western R.R. great changes have taken place. At that time a saw-mill was constructed which cut down the merchantable timber. It continued its operations till 1919. As one looks at the hills one hardly realizes that the work of lumbering is completed. They are still verdure-clad and as picturesque as ever.

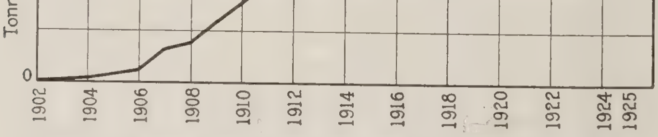

**Fig. 1—Production Curve of Island Creek Coal Co.**

The sag in the curve between 1916 and 1920 marks the period during the war and shortly thereafter when labor was scarce and car supply limited. The straight line between 1921 and 1923 marks the period during which markets were being readjusted. The rapid ascent between 1923 and the present day shows how the last readjustment of the market has increased the production of this company. At the beginning of 1923 the company had nineteen mines in operation; during 1924 and 1925 only twelve have been operating and yet the production has been growing rapidly. This sharp rise is a striking example of what modernization will do.

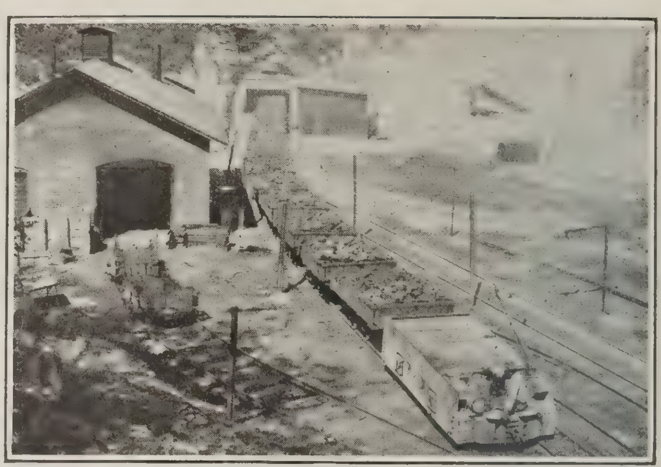

**Fig. 2—Out from the Cool of the Mine Into the Summer Sun**

Loaded trip leaving No. 18 mine. The train consists of twenty low-type mine cars of 2½-ton capacity hauled by a 15-ton locomotive. The seam at this mine lies 189 ft. above the level of the railroad track at the tipple. One of the few mines of the company where the cars come to the surface.

The company gradually acquired a large acreage and opened new mines, its growth being slow because of lack of railroad facilities, though by 1910 it had seven mines and an output exceeding 1½ million tons yearly. At the close of this present year the company will have mined altogether from all its nineteen mines, past and present, over 44 million tons.

At present, the company has in fee simple 27,000 acres of coal land, all in one large tract. It is estimated that under this property are about 215 million tons of coal in the Island Creek seam, 82 million tons of coal in the Draper seam and 60 million tons in the Eagle seam. To date mining has been confined entirely to the first-named bed.

A liberal policy with regard to labor has been characteristic of the Island Creek Coal Co. It has recognized that any company, that would expand, must have villages and living conditions that would attract the better kind of labor. Only trouble can be expected if the towns in which the men are housed are of the kind that men of orderly habits and high ideals shun. The Island Creek villages have not only scenic beauty but comfort and neatness. The man who lives in them can say "good-bye" to the pioneering life with its hardships.

With no less than 290 actual working days in the year; with a system of ten schools which have the highest rating in Logan County, the funds of which are augmented by the company, so that they run nine instead of eight months; in an almost urban community comprising 10,000 persons, all of whom dwell in and around Holden (a community for the welfare of which the company holds itself responsible) with good water supplied by four water filtration plants of a combined capacity of 324,000 gal. in 8 hr. the employee of the Island Creek Coal Co. rightly feels he has ideal conditions. The best men and the largest supply of men can be obtained by an operating policy such as this.

Reverting to the filtration plants it may be said that the largest is at Holden. It has a capacity of 200,000 gal. in 8 hr., the water being pumped from the Right Fork of the Main Island Creek. The water is treated by the use of chlorine, soda ash and alum and then filtered and piped to the houses. Fire plugs are distributed as needed to guard against fire, aided by a fire truck which gives a pressure of 350 lb. per square inch. The town of Holden also is provided with fire-alarm boxes.

In all the villages some means of sewage disposal has been provided. Wherever the practice is convenient and safe, the sewage is discharged into the creek. In other places it is piped to septic tanks. In Holden the streets are paved and in lesser communities hard roads or their equivalent have been provided. Sidewalks have been laid where needed and street lights are everywhere installed. All lots are fenced.

To make possible the quick delivery of lighter materials from storehouse to mine, to aid officials and doctors in making their rounds, to accommodate its mine workers and to prevent the tracking of dirt into their houses as well as to benefit the county at large, the company, in 1923 and 1924, graded and constructed ten miles of 16-ft. concrete roads at a cost of $675,000. Without good roads the mines, even though reasonably close to one another, are not readily accessible for the visits of officials, especially in rainy weather. How near the mines are to each other can be judged

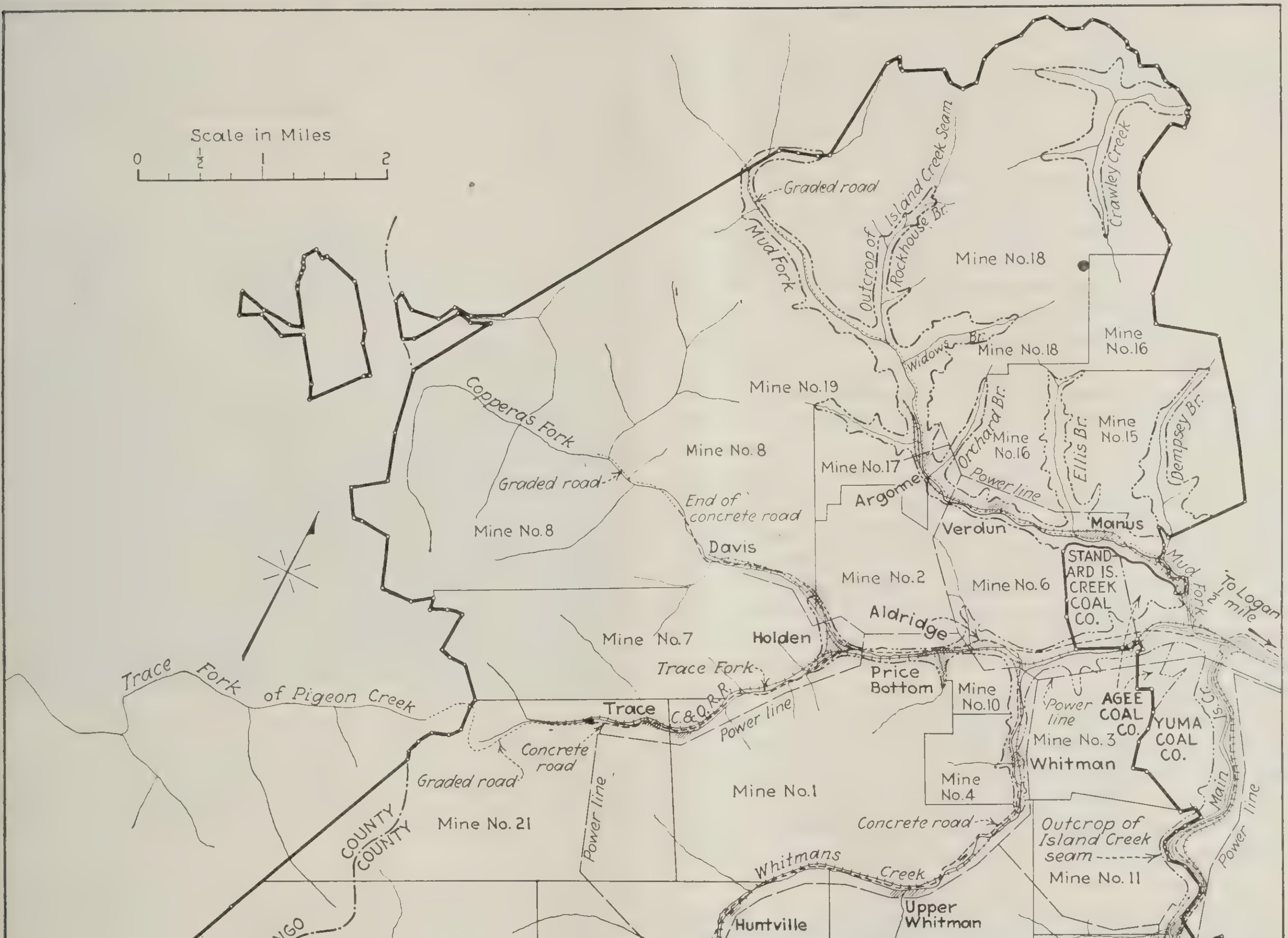

Fig. 3—Map Showing Holdings, Mines, Villages and Power Lines of the Island Creek Coal Co.

The outcropping areas on the right in time will give place to the deeper mines on the left. These mines have been apportioned larger areas because, where the coal is deep, fewer and larger mines are desirable and economical. Where the crop divides a coal field into small areas, it is useless to spend money in providing a huge output which could only be attained by the time the area readily available was about worked out. But in deep-lying fields, the cost of sinking slopes or shafts and the expenditure for conveyors or hoists make it profitable to put in fewer plants and these of large capacity.

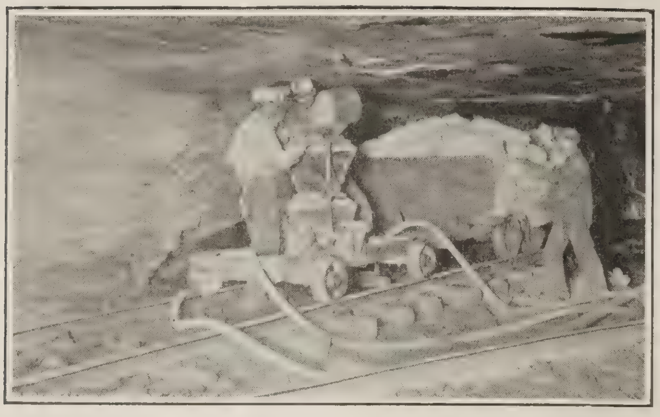

Fig. 4—Rock Dusting in No. 20 Shaft Mine

The Island Creek Coal Co. is not passing up anything new which is likely to make its mines more safe. Lately it has gone to rock dusting. It is now rock dusting the haulage entries in its shaft mines and will extend this activity to all of its operating mines. It will further guard against coal-dust explosions by erecting rock-dust barriers at the necks of room panels. Here is shown a cement gun being utilized for distributing rock dust.

from the general layout map of the property (Fig. 3).

With good roads, frequent, even daily, visits by the general manager and his operating and engineering assistants are possible. Radiating from Holden and leaving the main thoroughfare between that town and Logan, the county seat, are a number of branch roads which reduce to a minimum the distance by automobile from any settlement on the property to either of these towns. Most of the miners employed by the Island Creek Coal Co. own automobiles, so that they may enjoy the activities of the larger towns.

Repair men from the mechanical and electrical departments making headquarters at Holden all travel to and from their work in automobiles, the roads having made feasible the erection of a large central shops building where repairs can be made uniformly under the watchful eyes of the departments. Speedy transportation of supplies by trucks has enabled the company to operate efficiently with only a small stock of repair parts at any one mine.

Like all successful companies the Island Creek Coal Co. lays more stress on inspection than on repair. With any other plan there can be no continuity of operation. And for that inspection the company vests the authority in the equipment-maintenance department and not in the mine officials. Let us consider a few examples of the way in which this plan functions.

As far as condition is concerned, there is no difference at the Island Creek mines between an old and a new machine. As a result, cutting crews are not anxious to get a machine newly arrived from the factory and are not allowed to make such a choice, for there is no difference in operating efficiency between it and any other machine. Frequent inspections and prompt attention to defects keep equipment up to standard, and the cutting operations are closely watched by the equipment-maintenance department, the cuts themselves being inspected to ascertain whether the machine runner has been using dull bits.

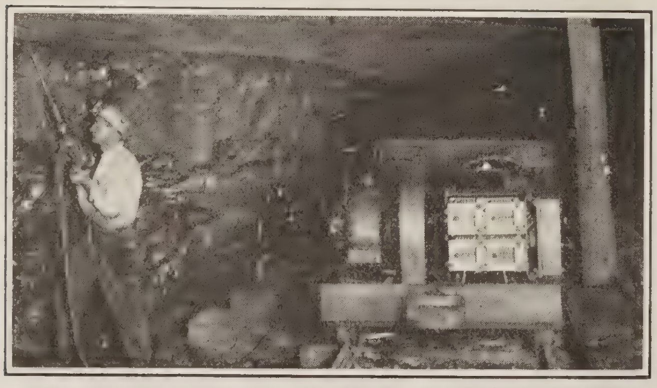

Fig. 5—Air Drill Breaking Roof for Overcast

Directly over the coal seam in these mines is a bed of hard massive slate which is broken only with the greatest difficulty. Consequently for the building of overcasts a portable compressor is hauled to the job and thereby a difficult task is made comparatively easy.

The electrician at each mine thoroughly inspects every cutting machine on the job at least once a week, the inspection being made in the motor barn where facilities are provided for the making of all necessary adjustments. In addition, the machine runner inspects and adjusts the machine daily and each day makes out a daily report with a copy as to the condition of the machine. These he hands to the night boss, who in turn passes the report to the mine electrician and gives the copy to the mine superintendent. If the machine needs repair it is taken immediately to the motor barn. Electric coal drills are stored during the off-shifts in the same place, where they are inspected each day and the necessary repairs made.

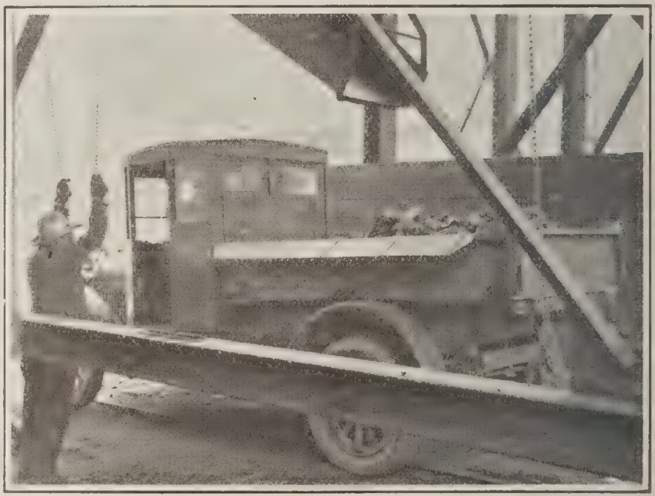

Fig. 6—Automobile Truck Disposes of Mine Refuse

What little mine refuse is brought to the outside from the interior of the Island Creek Coal Co. mines is hauled away in automobile trucks, introducing a novel use for this type of vehicle at the mines. This scheme is the least complicated and the most economical for the disposal of small quantities of rock which are dumped over the banks of the roads.

Only once, and only at one mine, in a period of twelve years during which many mines have been operating, has a day been lost by reason of fan trouble. This continuity of fan operation can be attributed solely to the care with which the fans are inspected for defects and the promptness with which any fault is corrected. Each fan is inspected once a week by the alternating-current electrical department.

*Coal Age* has already outlined the scheme of tipple inspection which provides comparative freedom from breakdowns of tipple equipment. For full details the reader is referred to the May 7 issue, p. 678.

The authority of the mine superintendent or mine foreman does not extend to the mine electrician. The latter reports to the head of the direct-current electrical department by whom all of his orders are given.

The company insists that all rooms and entries be driven uniformly wide and straight and in adherence to its standard plan of mining. The work of every eighteen or twenty loaders is directed by a straw boss. As the rooms and headings advance, center lines are painted on the roof, the lines being extended by a center boss and helper with each advance of one cut. Surveying corps report the finding of all off-center places to the superintendent and the general superintendent. A mine inspector is employed; he reports directly, and only, to the general superintendent, who promptly acts upon the inspector's suggestions.

The Island Creek Coal Co. prepares its coal with great care, as is instanced by the fact that it requires that each railroad car shall be carefully swept before it is loaded. It is anxious to maintain the appearance as well as the quality of its coal, and any lump which has a luster inferior to that of the bulk of the coal is rejected, even though its analysis may measure up to that of the average. At the Island Creek mines all the coal is screened, even the run-of-mine, because only by screening is it possible to pick out the impurities in the coal of larger size. When run-of-mine is shipped it is made up of the assembling of the sizes after the impurities have been removed on the picking table.

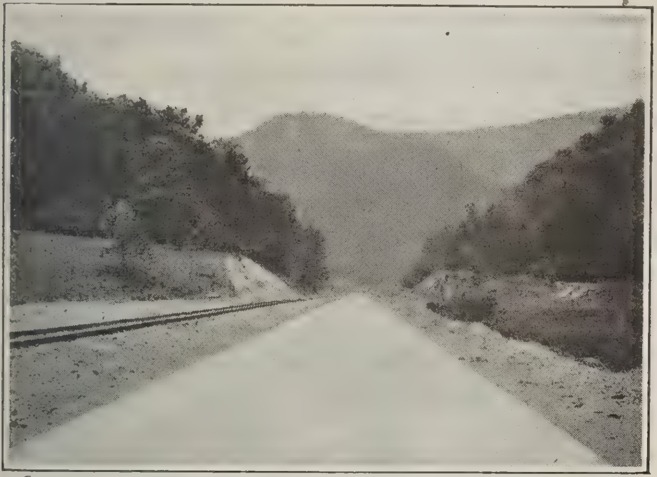

**Fig. 7—How Island Creek Builds Roads**

Without easy communication no business can be conducted profitably. A primary need of efficiency is good roads. How many companies never achieve success because they fail to provide road facilities and become buried in the ruts and mud holes that inevitably form in dirt roads? Island Creek has spent $675,000 in highways like this.

Though it is a fact that the Island Creek mines have had a good record for safety, the company is making a concerted effort to increase the safety of its workers. It is acting as far as it can through its employees in the work it is doing in and about the mines and throughout the property. That part of the program of safety in which the employees have not, as yet, concerned themselves is shouldered by the company. But by continual education, example and training the company is extending the control of employees in the safety campaign.

Perhaps the strongest link in the chain of safety at these mines is the safety clubs. Mention of their method of functioning was made on p. 873 of the June 11 issue of this magazine. A few additional remarks relative to their purpose and practice are appropriate at this point. The safety clubs were organized, as indicated by an excerpt from the rules and regulations governing them, "to protect the employees of the Island Creek Coal Co. from accidents in and around the mines and to promote a system of first-aid training that will enable the employees to look properly after the health and comfort of their fellow workers."

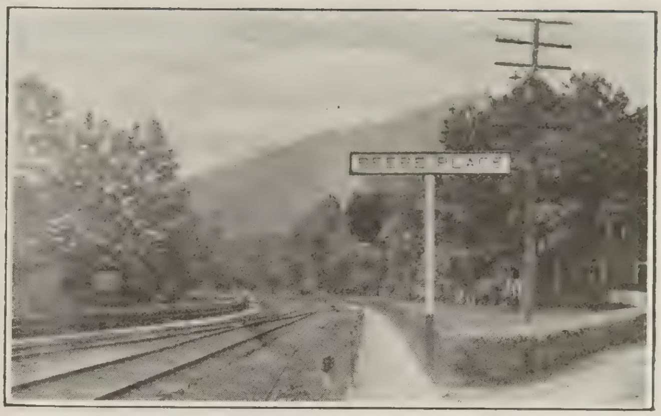

**Fig. 8—Even the Railroad Is Attractive at Holden**

By laying a sidewalk and erecting an iron fence on either side of the railroad tracks this thoroughfare for travel on foot has been made safe. The scene is enhanced in beauty by the hedges and trees.

Obviously it is an organization of employees, over which the company assumes no control. Each mine has its own club presided over by the superintendent as president and the mine foreman as vice-president. Meetings are held every two weeks by the several clubs to discuss accidents and means to prevent them. Failure of any employee to attend at least one meeting a month subjects him to a fine. Any employee who violates the company rules or state mining laws is fined 50c. for each such act by the club and is further open to prosecution by law.

Safety police are elected by the club for one month. Their duty is to detect unsafe practices. They present their cases at the meetings of the club, and the members collectively pass judgment. So wide flung is the authority of this club that if an employee is caught speeding his automobile on the property he is convicted for that act by his associates.

Every man on the payroll has received a 15-hr. course in first-aid training given by the U. S. Bureau of Mines. In addition a first-aid team of six men is maintained, and at least ten men have been trained in mine-rescue work at each mine.

Another company with the same executive officers and many of the same directors is the Pond Creek Pocahontas Co. which owns the entire stock of the

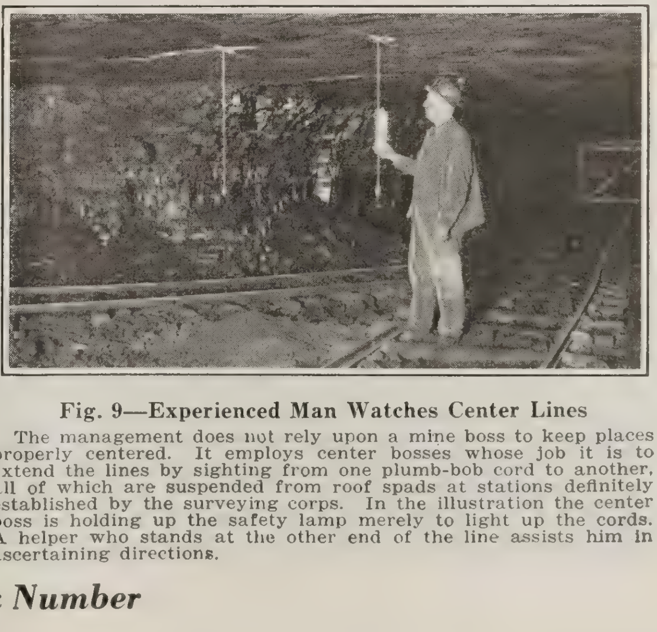

**Fig. 9—Experienced Man Watches Center Lines**

The management does not rely upon a mine boss to keep places properly centered. It employs center bosses whose job it is to extend the lines by sighting from one plumb-bob cord to another, all of which are suspended from roof spads at stations definitely established by the surveying corps. In the illustration the center boss is holding up the safety lamp merely to light up the cords. A helper who stands at the other end of the line assists him in ascertaining directions.

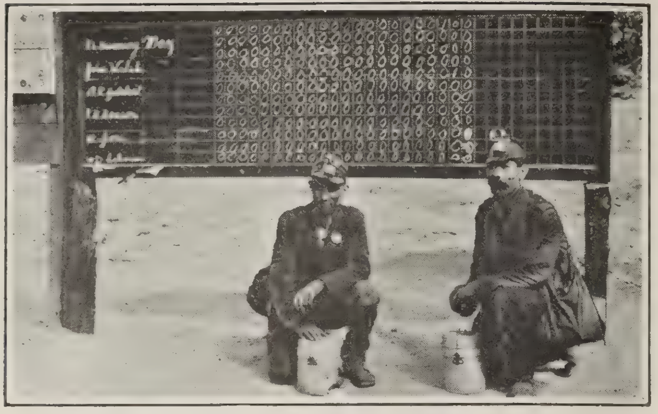

Fig. 10—Score Board Where Naughts Are Popular

Here are listed the names of the assistant mine foremen and the number of accidents in No. 1 mine day by day in the sections over which they have control. Opposite each name are two lines or squares. In the upper are listed minor accidents and in the lower, those that are serious.

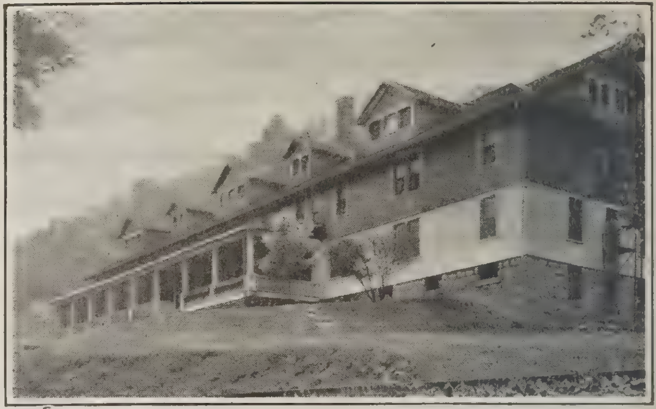

Fig. 11—Holden "Club" Is Well Worthy of Name

A cheerful, restful spirit pervades this club house. Such places are built not so much of lumber and stone as of human lives, and the Holden building has not only good structural material but good human material also, to make the club a real home. The Holdenites are quite proud of this building.

By-Products Pocahontas Co., its coal being sold by the Island Creek Coal Co. The Island Creek and Pond Creek Pocahontas coals are of a different character, the former having more volatile matter than the latter. The Bartley shaft at the Pond Creek Pocahontas Co. is only starting operations but is expected to produce 400,000 tons during the current year. By-Products Pocahontas Co. will ship about 225,000 to 250,000 tons this year, so that the two properties will provide a tonnage of from 625,000 to 650,000 tons, which will bring the production of the entire aggregation of companies up almost to 7 million tons. When complete the yearly tonnage of the two Pocahontas companies will be over a million tons a year.

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Another Case Where Roads Pay Dividends

Fire truck and men at Holden. It is good practice to house the fire truck close to the shops and to pick a crew of fire fighters from the men who work there. With this arrangement no time is lost in getting to the fire. This apparatus develops a water pressure of 325 lb. per square inch.

Charity For "Unsafe" Men

Such a scene as this is enacted every pay day at almost any mine office. These unfortunates are victims of mine accidents resulting from the carelessness of themselves or others. Most of the miners, as they file from the cage, pay envelope in hand, contribute to the cripples waiting in line outside of the door.

**Headed for Market**

This is the day's output from Island Creek Mine 17 halted for purposes of photography only and not because this bull of an engine is stalled. The production of the 12 Island Creek mines in Logan County, W. Va. has been mounting steadily since the company made its 85,000-ton start in 1902, until this year it is expected that the total from the 12 will reach 6,000,000 tons.

# "System Without Red Tape" Keeps Costs Down

## Rigid, Regular Inspection and Reports Point Out the "Stitch in Time"—Central Metering Cuts Power Bills—Standardization Holds Repair Stocks Low but Ample

**By J. H. Edwards**
Associate Editor, *Coal Age*
Huntington, W. Va.

AT A GROUP OF MINES so completely electrified as that of the Island Creek Coal Co. of Holden, W. Va., the work of installing, supervising, and maintaining electrical and mechanical equipment holds an important place among factors essential to low-cost production. The use of equipment best adapted to the conditions, and the proper maintenance of that equipment are important, not only because of the direct relation to operating cost, but also because, indirectly, they help to increase coal production.

The group consists of twelve operating mines—five drift, five slope, and two shaft—all in the Island Creek seam. The coal which is a high grade bituminous of hard character, averages about 76 in. in thickness and contains a parting of 1 in. to 2 in. of slate. Generally speaking the bottom and top are good and there is a comparatively small amount of water to be pumped from the mines. Very little gas is encountered, open lights being used even in the two shaft operations. The seam lies practically horizontal, and there are no natural grades of sufficient steepness to limit in any way the use of electric locomotives for gathering and hauling.

All coal is undercut with electric machines, loaded by hand into 2½-ton mine cars, and gathered by cable-reel locomotives. Excepting the hand loading, the mines are completely electrified for hoisting, for driving pumps and for ventilating.

The most outlying mine of the group is only 4 miles by good road from operating headquarters at Holden where the warehouse, and repair shop are located, and 5 miles from the point of central metering of power. This power is purchased at 6,600 volts from the Kentucky-West Virginia Power Co. and transmitted at that voltage to the various mines over pole lines owned and operated by the coal company. There is a total of 18 miles of this line in use.

In order to provide further insight into the general conditions, a few figures on power consumption and production are given in Table I. The kilowatt-hour data includes all power used not excepting that for house lighting and other outside-of-mine purposes.

**Table I—Relation of Electrical Energy and Tonnage at Island Creek Mines**

| Period | Kw.-Hr. | Tons Mined | Kw.-Hr. per Ton |
|---|---|---|---|
| All of 1924 | 16,300,000 | 5,000,000 | 3.26 |
| Oct., 1924 | 1,460,000 | 520,000 | 2.81 |
| First 5 months of 1925 | 7,100,000 | 2,300,000 | 3.08 |
| Average for 21 mines of over 10,000 tons per month capacity, all 100 per cent electrified and in the same general territory as the Island Creek mines | | | 4.66 |
| Highest of the above | | | 7.91 |
| Lowest of the above | | | 2.36 |

Here it may be well to explain that company houses are provided for practically all employees. It will be noted that the kilowatt-hour-per-ton figures in the table are considerably less for the Island Creek mines than is the average for a number of other West Virginia mines of about the same capacities.

The Island Creek mines vary in capacity from 1,000 to 2,700 tons per day, and the total consecutive daily production is approximately 22,000 tons. This latter figure divided by 3,890 (the maximum average 5-min. demand) gives 5.65 tons per day per kilowatt. As a comparison, a 2,200-ton mine in the same coal field gets only 3.255 tons per day per kilowatt of 5-min. demand. This indicates the advantage that a group of mines such as the Island Creek properties gains by central metering of purchased power.

For a company which has been operating and developing mines for over twenty years, the equipment of the Island Creek is highly standardized. The desirability for standardization is given important consideration whenever anything new is to be purchased, but must naturally take second place when improvements are offered which are of distinct advantage.

On the outside equipment, alternating-current motors are used exclusively, these being of a few standard sizes, so that a small stock of bearings gives protection against the only trouble common with this type. The direct-

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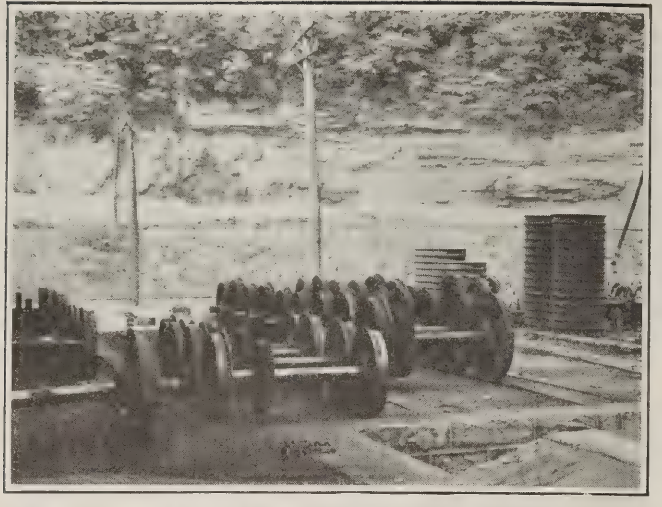
The headpiece shows the top works of Mine 21, one of the two Island Creek shaft mines. It was completed in 1923 and may attain a daily production of 4,000 tons. At the left is shown an inspector examining an electric drill which has been left by the operator in such a position that one man can give it a test without aid. At the right H. L. Bradshaw, chief electrician of the alternating current department checks the voltage at a mine substation.



Orderly Storage of Wheels, Axles and Tires Is Noticeable Around All Island Creek Mines

current substations, which in every case are located outside of the mines, are equipped with synchronous converters of 200- and 300-kw. sizes and of two makes. The standard direct-current voltage is 250; however, four of the older mines are still using 500-volt pressure. Squirrel-cage motors of both the one-speed and two-speed types are used for driving the mine fans. No synchronous motors are in use, yet the power factor at the central metering point averages 80 per cent. Inasmuch as there is no power factor clause in the rate schedule there is no need for correction.

Assuming that all locomotives and mining machines are in use each day, the efficiency measure is 1,100 tons per haulage locomotive, 256 tons per gathering locomotive, and 286 tons per mining machine. Roughly 10 per cent of these locomotives and machines are not in use but are serving as spares. This makes the actual tonnage per working unit higher than the figures here given. None of the equipment is double-shifted. The length of the shift is 8 hr.

In order to get large tonnages the Island Creek company keeps on hand a complete supply of repair parts so that only in unusual instances is it necessary to shut down a piece of machinery to await the shipment of repair parts from the factory. Table II lists the totals of the five principal classes of repair parts kept in stock in the central warehouse.

The value of stock on hand at the warehouse is $82,612. Adding $15,000 which it is estimated will cover the small repair parts kept in stock by electricians at the twelve mines, makes a grand total of $97,612 invested in repair parts exclusive of armatures and other items which circulate back and forth between the mines and the repair shop. This figure divided by

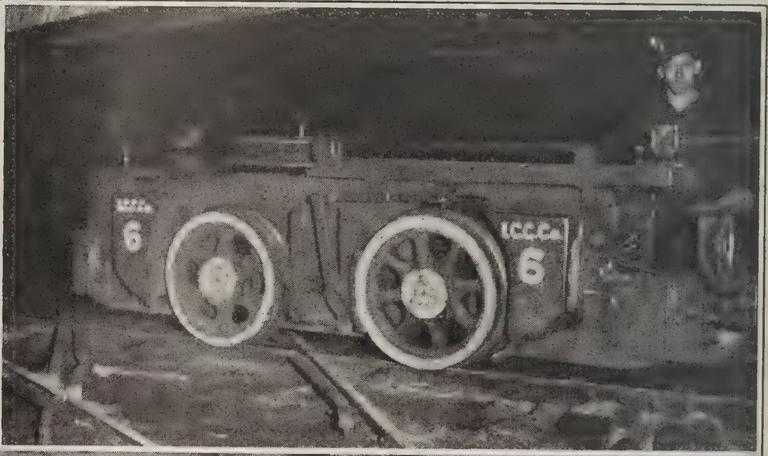
Table II—Repair Parts of the Five Principal Classes Kept in Stock at the Central Warehouse

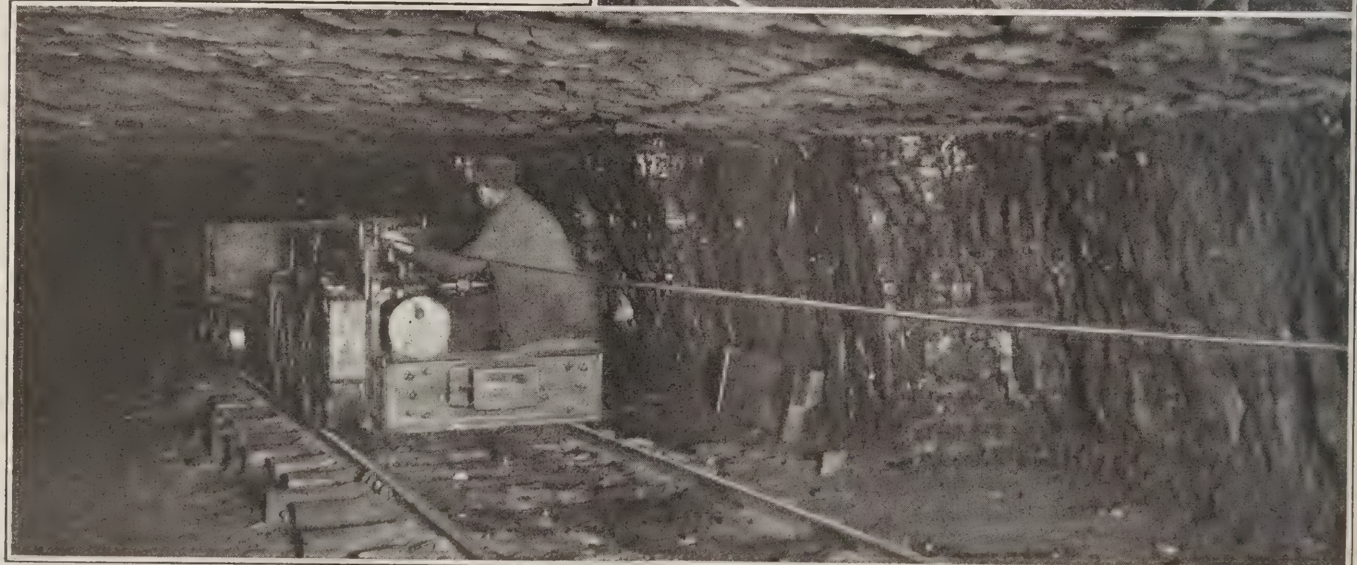
| | |
|---|---|
| For mining machines | $26,036 |
| For locomotives | 36,654 |
| For tipples | 11,813 |
| For pumps | 4,763 |
| For drills | 3,346 |
| Total | $82,612 |

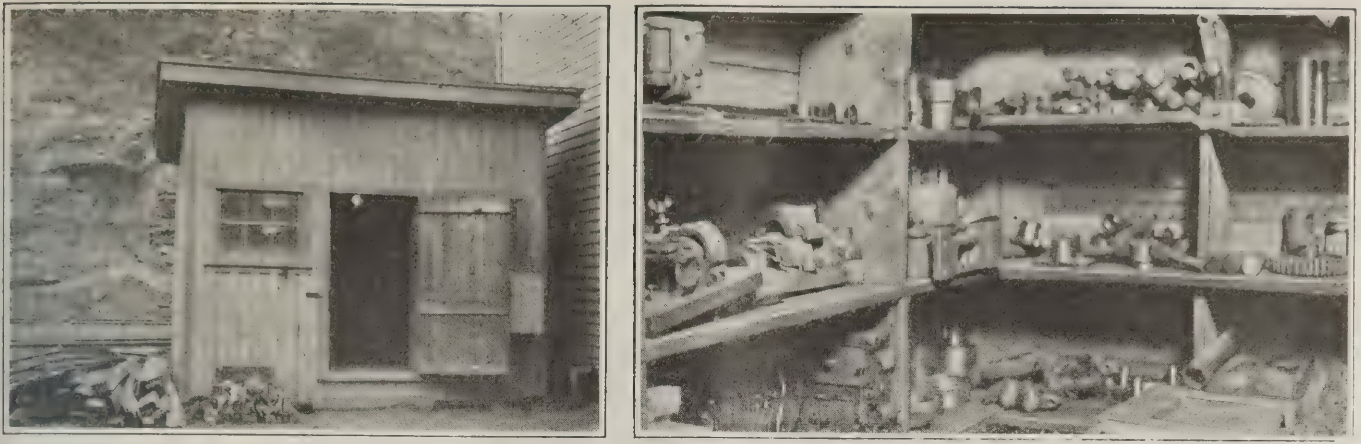
### Gatherers in Mine 12

At the bottom is shown a 6-ton cable-reel locomotive of the type commonly used for this service in Island Creek mines. This machine undergoes the most rigid inspections periodically which is one of the reasons why Island Creek haulage difficulties do not include many locomotive breakdowns. Such careful inspection usually reveals mechanical weaknesses before they cause trouble. Also, the system of management at these mines calls for intelligent treatment of equipment by operators. If inspection shows a motor has received unnecessary abuse, something is done to correct careless handling before it becomes habitual.

Each man is given some personal responsibility for his own motor, however. He is expected to repair controllers and keep brakes adjusted. At the upper right is a thirteen-year-old locomotive, fresh from the shops, which is still giving good service.







Group Storage of Supplies and Orderly Handling of Them Cuts Down Costs

At the left is the supply building for Mines 11 and 12. These mines are close together, so, instead of carrying a set of supplies inside each mine, one set is kept on the outside at a point halfway between the two.

At the right is an interior corner of the supply building. In order to avoid loss of time in getting supplies from the central warehouse, the mine electricians keep at the respective mines a small supply of such parts as are needed frequently.

22,000—the daily tonnage—gives $4.43 for spare and repair parts per ton. This favorable figure indicates the advantage gained by standardization, and by centralized operation. As a comparison it is safe to say that the average West Virginia mining company carries $9 or more for spare and repair parts per ton. To substantiate this estimate there is cited the following actual figures of six mines: $14.57, $8.34, $9.52, $10.72, $7.58 and $8.34.

Responsibility for inspection, supervision, and maintenance of electrical and mechanical equipment of the Island Creek mines is not centered upon one man but instead is divided among four men, who report individually to the general superintendent. One of these men—the chief electrician of direct-current equipment —has charge of all underground machinery, except the alternating-current mine pumps. The chief electrician of alternating-current equipment has charge of substations, fans, hoists, transmission lines, house lighting, etc. The master mechanic is in charge of the machine tool, electric welding, and blacksmith departments of the central shop. A general inspector has among his duties the complete inspection of tipples and tipple equipment.

The division of the electrical work between two men is unusual, however, at the Island Creek mines it apears to work satisfactorily. It amounts practically to the equivalent of having one man in charge of underground equipment and another in charge of outside equipment. This arrangement enables each man to concentrate on his particular branch of the work, and gives each an opportunity to go into detail in investigating trouble and devising means of avoiding recurrences of it.

Six men and the chief, H. L. Bradshaw, compose the average force of the alternating-current department. A large room in the main shop building serves as headquarters. Here the chief has a desk, and in addition the room is used for the storage of tools, small repair parts, portable test meters, and small equipment. Benches along the wall provide a place for miscellaneous repair work. No winding equipment is provided for the reason that burn-outs of alternating-current motors are rare. The few jobs of this class of winding are transferred to the winding room of the direct-current department.

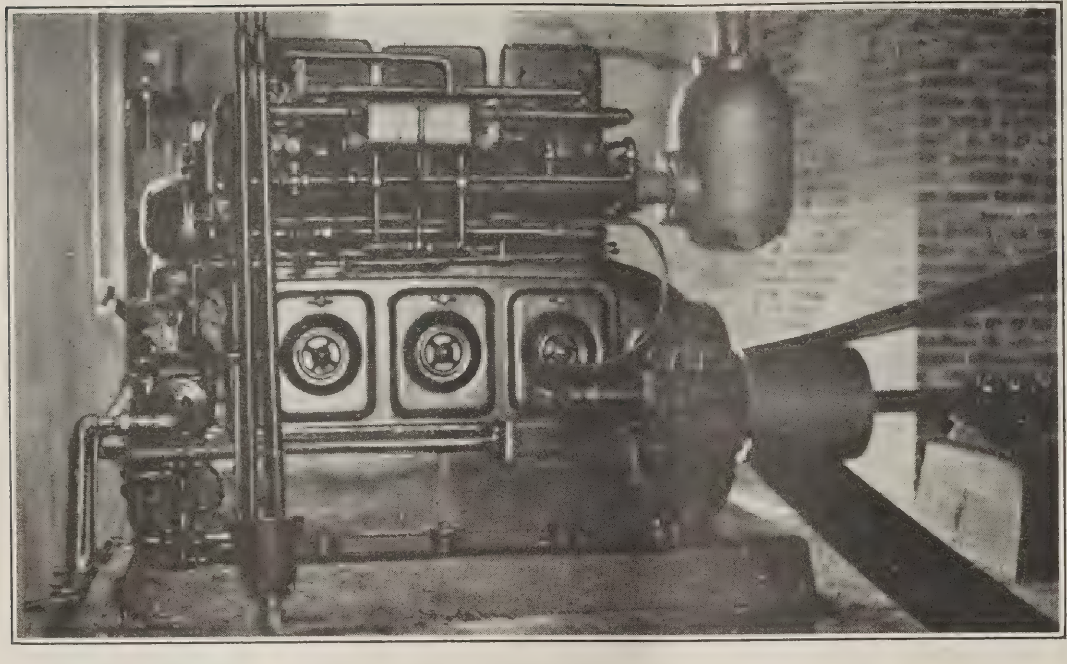
Cleaning and inspection are two important phases of the work of the alternating-current department. It is a company policy to do everything possible to prevent breakdowns. The prevention of trouble leaves more time for inspection and cleaning. This, in turn, further reduces trouble.

All synchronous converters, motors, and other electrical apparatus are regularly cleaned out with compressed air. For this purpose there is used a 17.5-cu.ft., motor-driven air compressor mounted on a Ford chassis. This machine is parked alongside a tipple, substation, or other building where electrical equipment is installed, the motor cable is plugged into a power receptacle and the compressor is operated until the blowing out of the machinery is completed. This one compressor serves all of the mines.

Another interesting purpose of this portable compressor is to act as a spare for the air brakes and control of the hoists at the two shaft mines. If any trouble should occur with one of the motor-driven compressors, hoisting would be stopped only for the short time necessary to get the portable unit on the job, plug in the electric cable and connect the air hose. Cleaning equipment of the portable type costs far less than equipping with stationary compressors every building where electrical equipment is in use.

Although electrical equipment is inspected when it is blown out, the chief of the department makes it a point personally to inspect all important items such as substations, mine fans and hoists. He sees each fan at least once each week and sends a weekly report of the condition of each to the general superintendent.. The substations and hoists are inspected as often as the fans but no reports are made out covering these. The chief electrician decides how often such inspection is necessary.

Other work coming under the alternating-current department is the care and reading of meters. Besides the distribution meters in substations and hoist houses, coal company meters are installed at the power company's transformer substation. This installation consists of a graphic voltmeter, graphic power-factor meter, graphic wattmeter, and a plain watthour meter. These furnish a complete check on the watthour and demand-meter readings of the power company, and are read by the chief electrician at the same time that the representative of the power company reads his meters. In the several years of use of purchased power no discrepancies have arisen in these readings.



**Ready for an Emergency**

This three-cylinder gasoline engine serves as an auxiliary to the motor drive of the ventilating fan at No. 21 mine. Squarejaw clutches on either side of the fan are manipulated when it is desired to change from one drive to another. The engine is equipped with dual ignition and with an electric starting system.

It is with the direct-current equipment that the greatest opportunities exist for improvement in the continuity of service, and in the reduction of repair cost. There are several reasons for this condition. In the first place a direct-current motor is normally less rugged than one of the alternating-current type. In the second place, especially at the Island Creek mines where all of the direct-current equipment is on the inside, this equipment is subjected to less favorable conditions and to the likelihood of greater abuse.

The chief of the direct-current department, L. D. Thompson, has made the most of the opportunities. With the full backing of the management he practically has eliminated loss of time due to breakdowns and has cut the repair costs per ton to a figure which is worthy of the envy of any company. It would be a joy to any progressive chief electrician to see how well "set up" and well "lubricated" is this department.

The principal features, in their order of importance, which contribute apparently to the success of the department, are:

(1) The mine electricians report to the chief electrician instead of to the mine foremen.

(2) So far as possible the mine electricians are freed from all repair work which can be done in the central shop and which requires special care, special skill, or special tools.

(3) The department has the understanding, confidence and backing of the management.

(4) A system without red tape is used.

(5) Control over the operators of the equipment. As an example, the motormen must do their own repair work on the locomotive controllers, and must keep the brakes properly adjusted.

The organization of the thirty-two men composing the direct-current department is shown in Table III. Opposite each mine the daily tonnage is given to indicate how few men are needed in proportion to the size of the mine. In several instances one head electrician serves two mines. This is possible because the mines are located close together. At those mines where the electrician has no helper, a man from the central shop lends assistance whenever necessary.

At first thought it may seem peculiar that a foreman is needed for the two bonding crews of two men each. The foreman's principal duties are to find out where bonding is necessary, plan the work, and to see that material is on hand so that the men will not be delayed. Pin-driven bonds are used exclusively. Care is taken to have the holes reamed out clean before the bonds are applied.

The practice of having the mine equipment assembly work at the central shop segregated and under the chief electrician instead of under the master mechanic of the shop is an unusual arrangement, but it gives the chief electrician entire control over an important branch of the repair of inside equipment. The arrangement leaves no opportunity to shift responsibility in case of failure due to poor workmanship.

**Table III—Organization and Number of Men in the Direct-Current Maintenance Department, and Daily Tonnage of Each Mine**

| | | |
|---|---|---|
| Chief Electrician of Direct-Current Equipment (A total of 32 men in the department) | Electrician and helper, Mine 1—2,000 tons | |
| | Head electrician, Mines 7 & 8 | Electrician, No. 7—2,000 tons |
| | | Electrician, No. 8—1,700 tons |
| | Head electrician, Mines 11 & 12 | Electrician, No. 11—1,600 tons |
| | | Electrician, No. 12—1,800 tons |
| | Electrician and helper, Mine 14—2,450 tons | |
| | Head electrician, Mines 15 & 16 | Electrician, No. 15—1,350 tons |
| | | Electrician, No. 16—1,300 tons |
| | Head electrician, Mines 17 & 18 | Electrician, No. 17—1,000 tons |
| | | Electrician, No. 18—1,250 tons |
| | Electrician, Mine No. 20—1,900 tons | |
| | Electrician, Mine No. 21—1,900 tons | |
| | Foreman of bonding crews, two crews of two men each. | |
| | Foremen of winding department of central shop, four winders | |
| | Foreman of mine equipment assembly work in central shop, two men. | |

The work of the assembly department is one of the most important features connected with the maintenance of underground equipment. It is this department which relieves the mine electrician of work which can better be accomplished in a central shop. A few of the jobs done in this department will be described.

The mining machine parts repaired and assembled are the cutter chain, cutter bar, cutter head, main gear assembly, intermediate gear assembly, main frame, and bottom plate. These repaired and assembled units are kept in stock at the shop ready to send to any mine that has need of them. With cutter chains it is the practice to have the mine electrician put on a complete new chain whenever as many as three bad lugs are found. The removed chain is then taken to the shop and entirely rebuilt. Instead of putting the rivets in cold as is the usual practice when making repairs inside of a mine, the rivets are put in hot and the worn straps which are good enough to use over again are carefully paired as to length. For the riveting, an electric heater is used. This provides a quick, clean, and certain means of bringing the rivets to the desired heat.

An important feature of the work on the main gear assembly is the use of the electric arc welder to lock the cap screws of the drive sprocket. Such practice, which eliminates a former source of trouble, would not be practical if the mine electricians were allowed to renew parts of the assembly. Instead, if a main gear, drive sprocket, or other part requires renewal, he sends the entire assembly to the central shop and instals a repaired unit in its place, thus saving time and doing a better job.

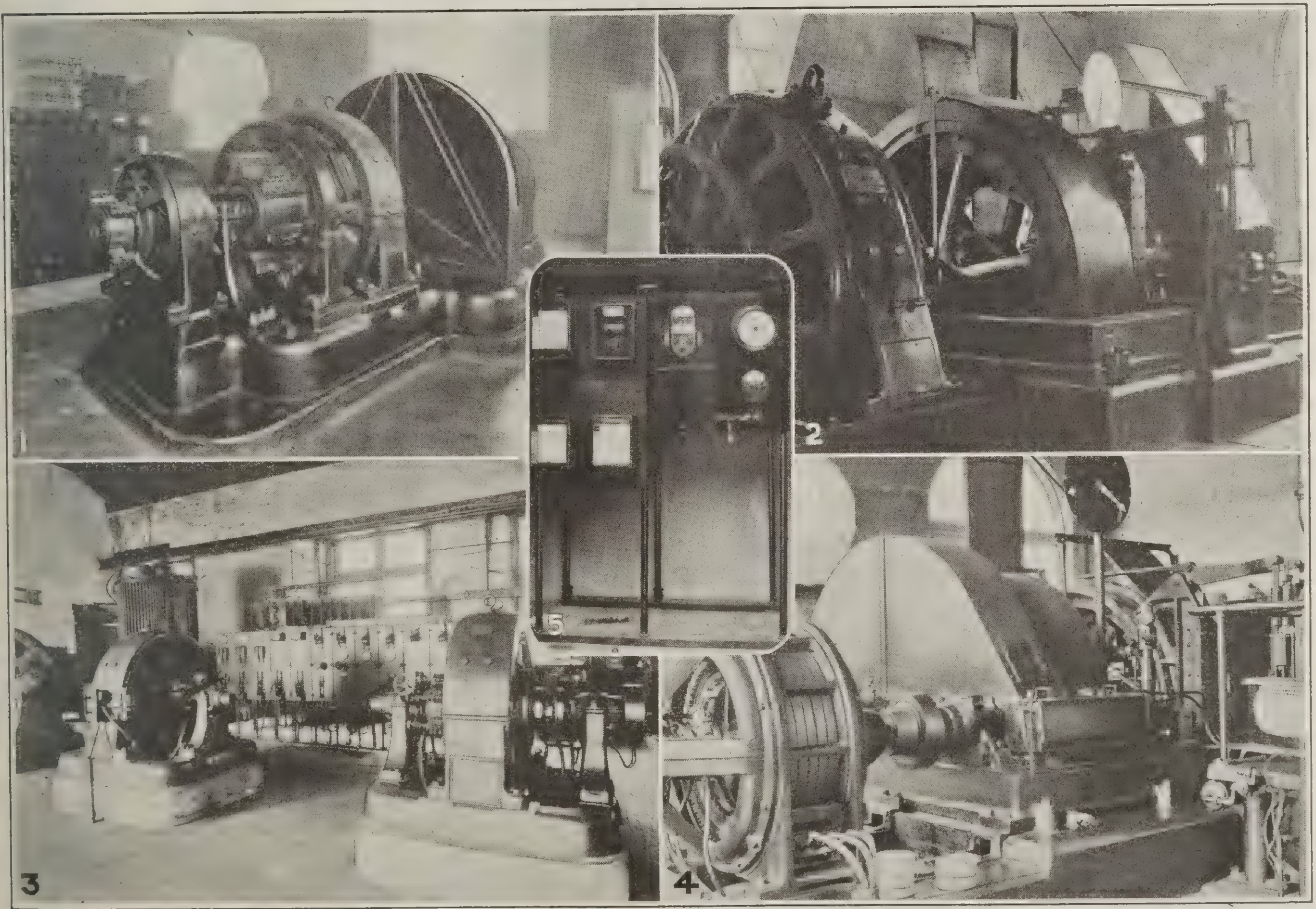
Another example of the work that can be done in the central shop, is the reinforcement of the cast-steel step plate of the bottom-plate assembly. As a result of several cases of breaking the intermediate shaft bearing housing of the step plate, these housings are now reinforced by shrinking on a ½x1¼-in. forged steel band. This is done on every bottom plate that comes to the shop for repair.

Some of the locomotive parts which are repaired and assembled at the central shop are trucks complete with tires and split gears, bumpers complete with draw pockets, and armatures complete with bearings, bearing housings and pinions.

The use of split gears is favored by the Island Creek Coal Co. because it eliminates the necessity of pressing wheels off the axles, consequently decreasing the liklihood of loose-wheel trouble. When split gears are applied in the central shop instead of at the mines, a perfect fit is assured so that there is little chance of a gear loosening. The practice is to use abrasive brake shoes interchanged with the plain type, as the condition demands, so as to wear the tire uniformly. In many cases tires serve their full life without once having to be trued in a lathe.

It is the practice not to change any locomotive draw pockets at the mine, but rather to put on complete new bumpers. The bumper is applied by setting twelve rivets. Another important locomotive practice is that of not allowing the mine electrician to change bearings and pinions on locomotive armatures. In case of trouble he puts in a spare armature which is complete with these parts. This saves time and insures the use of parts that are assembled in the best possible manner.

It was mentioned in a foregoing paragraph that sys-



**The Island Creek Coal Co. Tries to Be Economical in the Purchase and Application of Power**

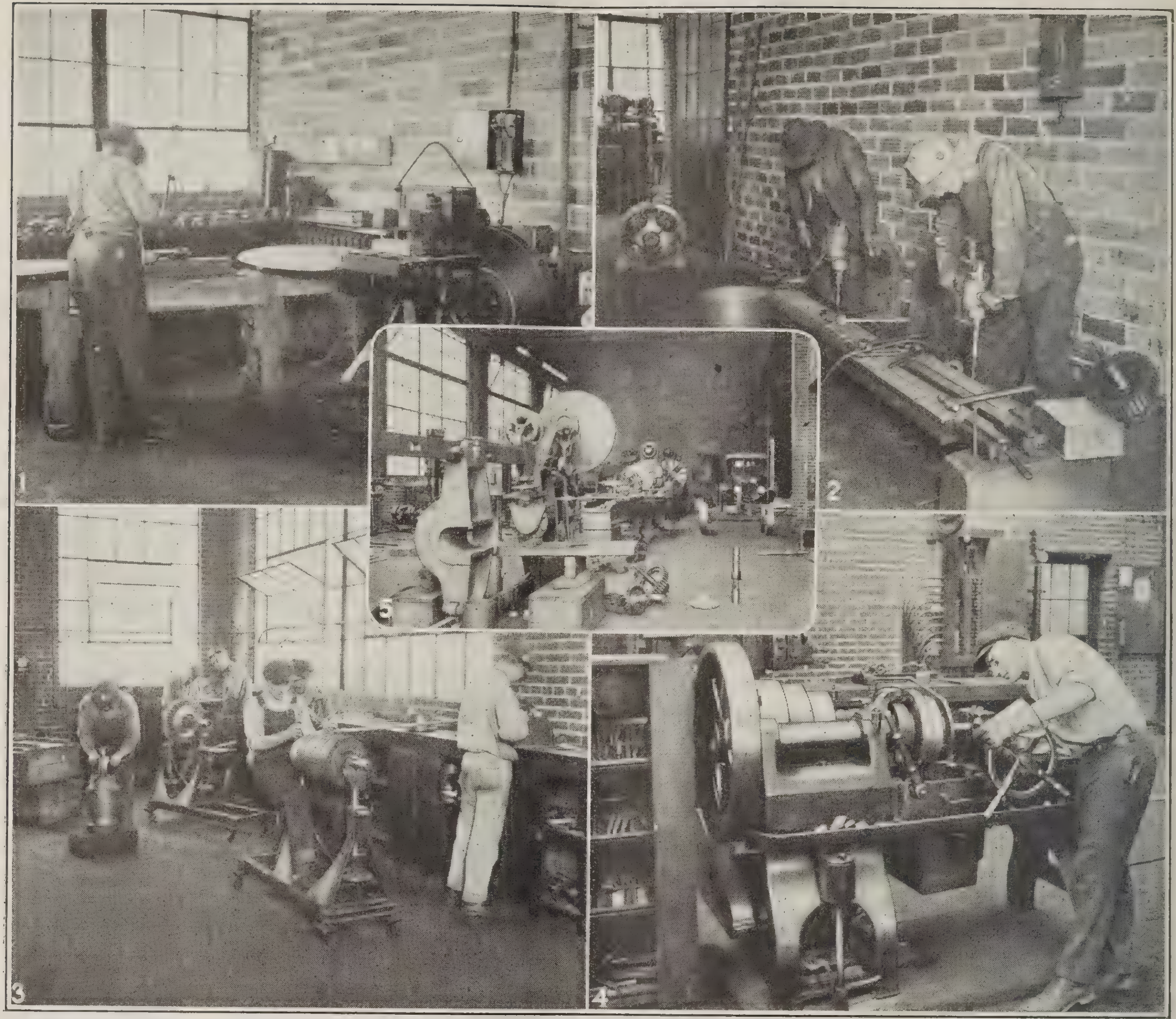
1—This is the flywheel motor-generator set of the Ilgner-Ward-Leonard hoist at Mine 21. The motor is 350-hp., the generator 400-kw., and the exciter 19-kw. During the regular hoisting of coal the demand of this motor-generator set fluctuates between 175 kw. and 275 kw. and drops to a steady value of approximately 40 kw. when the hoist is not in operation.

2—The main hoist at Mine 21, is driven by a 475-hp. direct-current motor.

3—An Island Creek substation from which alternating current is distributed to light the town of Holden, and direct current is supplied to operate Mine 1. Converters rather than motor-generator sets are used in all mine substations. No synchronous motor drives are used, yet the power factor at the central metering point averages 80 per cent.

4—An auxiliary hoist at Mine 21 which has a 200-hp. induction motor and cylindrical drums.

5—Power is checked by these electrical instruments of the power company and coal company at the central metering point. On the coal company's panel at the left are mounted, in addition to a watt-hour meter, a graphic voltmeter, graphic power-factor meter, and a graphic wattmeter. With an annual power bill of somewhat over a quarter of a million dollars, there is, naturally, considerable satisfaction in having a check on the meters of the power company because there is always a chance of error that can be corrected.



**The Island Creek Coal Co. Has a Central Machine Shop of Which It Is Proud**

1—Rebuilding a cutter chain. If a mine electrician finds as many as three bad lugs in a chain he puts on a new one and sends the old chain to this shop. Here it is entirely rebuilt. The worn straps which are found good for further use are carefully matched as to length and the rivets are put in hot. The electric rivet heater is at the right.

2—Rebuilding the cutter bar of a shortwall mining machine. The mechanical work on direct-current equipment is under the chief electrician instead of under the machine shop foreman. This centers the responsibility.

3—In the winding room plenty of space, good light, good ventilation, and steam heat for cold weather make things pleasant. Factory-made coils are used, and bad commutators are sent to the factory for repair or refilling. All armatures are dipped and then baked in an electric oven.

4—The bolt-threading machine has a motor in its base. All other machine tools are also of the individual motor-driven type.

5—Interior view of the central machine shop at Holden.

tem without red tape is responsible in part for the successful maintenance and operation of the direct-current equipment in these mines. This system involves only three employees: The motorman or machine operator, the mine electrician, and the chief of the direct-current department.

The plan begins to operate when the motorman checks in at the end of each shift, signing his name to a report, indicating the number of the locomotive which he used and its condition, detailing what sort of trouble, if any, developed during the shift. On this same kind of report sheet, the chief electrician notes any trouble encountered with the mining machines. He keeps on file one copy and sends the other to the chief electrician.

This report impresses on the equipment operators their responsibility in the proper handling of equipment; it is for reference in case of argument, and for checking the past record of a former operator who again applies for a position.

The next report in the system—the one of most concrete value—is that made up each night and morning by the chief electrician as a result of telephone conversations with the mine electricians. In making out this type of report, the chief uses no prepared form but instead a plain sheet of paper on which he notes the number of the mine and opposite it an O.K., if the mine electrician reported no trouble during that shift, and a short description of trouble if any occurred. When making up the same type report the next day, he notes whether items of trouble formerly reported have been repaired, and also what was the reason for the breakdown.

Receiving these reports each night and morning by phone keeps the chief electrician in touch with every case of trouble and affords him an opportunity to investigate before machine difficulties become "ancient history." By referring to his file of these telephone reports he can check the frequency of certain failures and be guided thereby in a decision as to what expense would be justified in improving that part of the equipment which was affected.

No cases of repeating trouble "get by" very long at the Island Creek mines. Many improvements which were first put into use at these mines have later become standard with the manufacturers of the equipment involved. Instead of accepting equipment failures as a matter of course, the Island Creek organization considers them indications of weakness in the machine, or indications of unnecessary abuse. Abuses are stopped if it is practicable to remedy the abusing condition. If the machine shows weakness, a concentrated effort is made to find a way to strengthen it.

### Inspection Cuts Maintenance Cost

The regular inspection of mining machines, locomotives and electric coal drills cuts down delays and reduces maintenance cost by revealing where the "stitch in time" is needed. The mine locomotives and coal drills are inspected each day at the end of the shift, and the mining machines once a week. Each machine has its day to be brought to the pit for this weekly inspection. Since the average is about six machines per mine, the electricians must inspect one machine each day.

To facilitate inspection, electric coal drills are placed on wooden horses by the crews at the end of the shift. These drills are set so that any stray oil will drain from the armatures back into the gear cases. Their position is such that the one mine electrician can, without help, give them a running test. An extra drill is kept on hand at each mine in order that there may be but a short delay to the crew in case of a breakdown, and to avoid the necessity of calling an electrician to the mine at night.

The handling of repair parts for the direct-current equipment is another work which is done systematically but without red tape. The main supply house, where a large and complete stock of parts is kept, is located near the central shop at Holden. To avoid delays in getting material from the main supply house to the mines, a small stock of the more commonly used parts is kept at each mine. These parts have been charged out against the mine, so that no formalities are necessary when the repairman wants to use some of this material. The stock is replenished each day, the chief electrician making out the order after finding out by phone from the mine electrician what parts have been used. The Island Creek practice is in sharp contrast to that of some large companies which seem to let the formalities of accounting interfere with the speedy repair of equipment.

As is indicated in Table III, the winding department of the central shop is under the chief electrician of the direct-current department. This is because practically all of the rewinding is for direct-current equipment. Several of the practices in the rewinding shop differ from those of some of the larger coal companies, but agree with the present trend among the majority of these organizations.

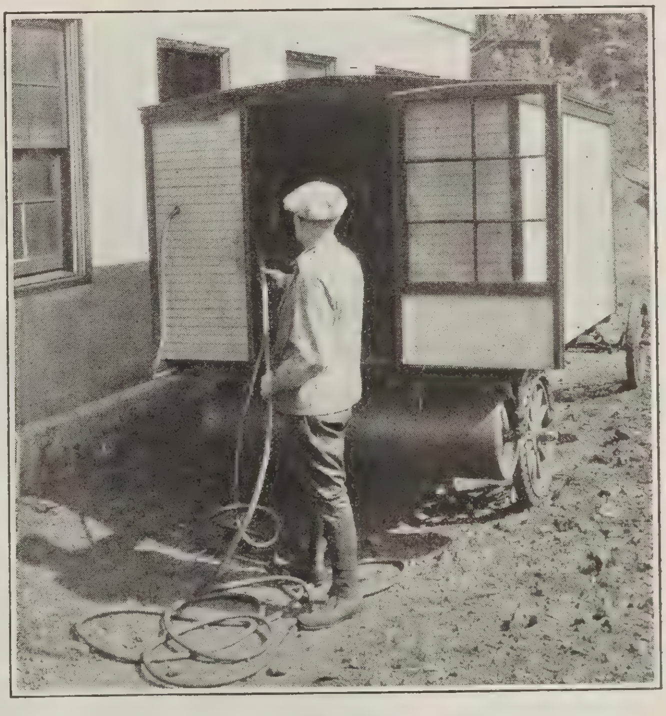
Two of the practices referred to are those followed in making armature coils and in repairing commutators. Only in cases of emergency are coils made at the Island Creek shop. Instead they are purchased from the motor manufacturer, for the reason that such coils fit better and also are more thoroughly insulated. The use of hot presses in the manufacture of coils is apparently the deciding factor in favor of the factory product.

Only the lesser repair jobs are undertaken on commutators. If one is received which requires the renewal of a large number of the mica segments, the insertion of several new bars or the replacing of all the mica V rings, then the whole commutator is returned for repair or refilling to a reliable manufacturer who is equipped with all of the special tools and presses for putting the commutator in good-as-new condition.

In the Island Creek shop, armatures are dipped and then baked in an electric oven. Special tools for speeding up the work and for improving the jobs are made for every operation which is a frequent repeater. Costs of the work are kept by distributing the material and labor charges against the specific mine and under one of the headings: "gathering motors," "mining machines," "drills," "pumps," "ventilating equipment," "tipples," or "substations." Costs are not kept of the individual jobs. The expense of clerical work for doing this is considered to exceed the value of the data obtained.

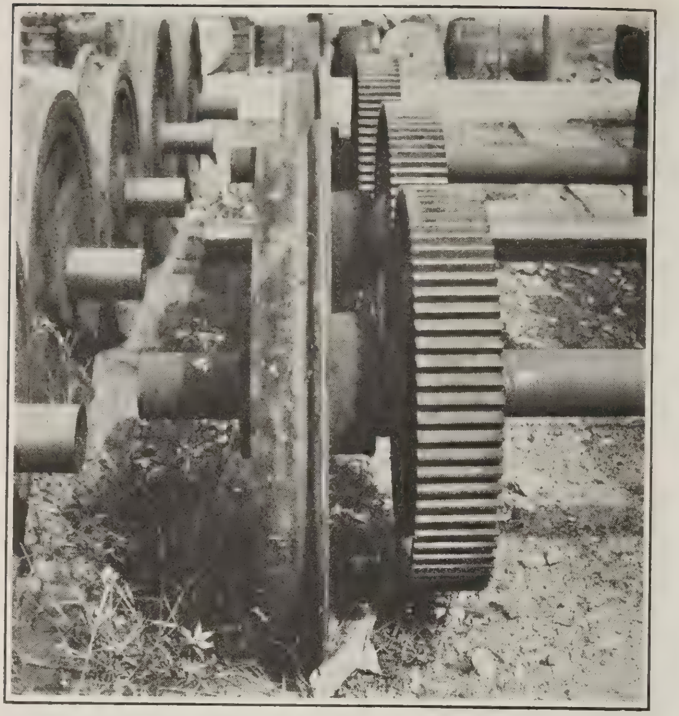
The foreman of the winding shop makes up each day for his own use and for file a list of the jobs on hand, indicating opposite each the mine to which the work is to be charged, and which of the jobs is of first importance. Any of those completed on the day the list is made up are so noted for record. The current list hangs on the wall so that the winders, upon completing a job, know what to do next even though the foreman is not there to tell them.

Little mention has been made of the machine tool, blacksmith, and autogenous welding departments. These are under a master mechanic who, like the two chief electricians, reports directly to the general superintendent. The equipment in the machine tool department



**This Portable Outfit Saves Money**

A 17.5-cu.ft. motor-driven air compressor mounted on a Ford chassis is used for air cleaning of all electrical apparatus located outside of the mines. When photographed the compressor had just been parked alongside a fan house and the operator was unreeling the hose preparatory to blowing out the fan motor. This compressor is the same size as those used in conjunction with the hoists at the two shaft mines and, therefore, acts as a spare for these installations.



**Rust Has Little Chance Here**

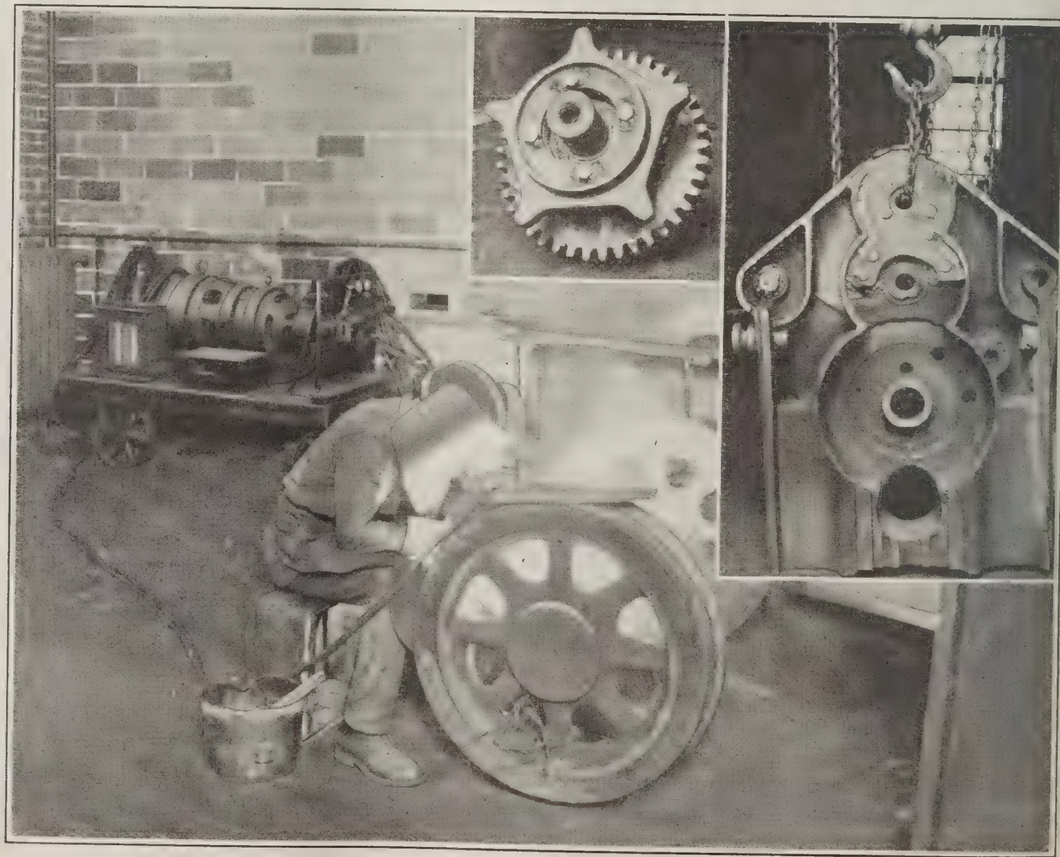
Locomotive axles should be painted before being stored; otherwise, whether the storage space is sheltered or not, the axles will rust. The Island Creek Coal Co. believes in the use of paint for this purpose and, consequently, all these axles are thus protected.

is complete but not elaborate. It consists of a planer, 30 in. x 30 in. x 9 ft.; a bolt machine which can take bolts in sizes up to 2-in. and pipe up to 1½-in.; a pipe machine, up to 6-in.; an engine lathe, 42 in. x 12 ft. (maximum chuck diameter and distance between centers) used almost exclusively for tire work; a second engine lathe, 27 in. x 12 ft.; a third engine lathe, 21 in. x 7 ft.; a 2-hp. motor-driven emery grinder; a radial drill of 24 in. radius; a radial drill of 36 in. radius; a plain, horizontal milling machine with a 28-in. feed; a power hacksaw, 9x9 in.; a shaper of 24-in. stroke; and a 100-ton wheel press.

One of the busiest machines in the shop is the 200-amp. arc welder. Roscoe Garret, the master mechanic, states that he does not see how they got along at all without this welder. All such parts as are electrically welded by other mining companies are also welded by Island Creek, except locomotive tires and armature shafts. The filling of tires was tried several years ago but was given up because the added metal did not wear as well as the original tire steel. Special manganese-steel electrodes such as are now being used by some coal companies were not tried, however. The building up of the ends of armature shafts is done with oxyacetylene. This gas torch is also used for cutting, and for the welding of cast iron.

In contrast to many mines which operated through the boom period, there is no unused machinery lying around Island Creek properties. This in itself indicates that care has been exercised in buying new equipment, and that obsolete material is disposed of promptly as second-hand material or junk.

Back of all is the management. It is true that the mining conditions under which equipment operates at the Island Creek mines are almost ideal but by no means are all of the operating conditions natural. Many were created by good management. A specific example is the arrangement whereby the mine electricians report to the chief electrician instead of to the mine foreman. Many mining men say that this is impractical, but what others say does not bother the Island Creek management. Men, methods and equipments are judged by the results they get. Results at the Holden group of twelve mines are satisfactory.



**The Arc Welder Is Busy**

Island Creek men can't understand how they ever got along without this equipment. Today they do every welding job possible at mines except filling locomotive tires and building up armature shaft ends. Two jobs are shown at the right: The cap screws on a mining machine drive sprocket have been locked in place and a $\frac{3}{4}$-in. plate riveted and welded onto the main frame of a mining machine. The casting around the rear stud hole had been broken away.

# Proper Handling Helps Make Mine Output Clean

## Pan and Belt Conveyors in Slopes and on the Inclines Transport Coal to Tipples—At Two Mines Self-Dumping Cages Are Used—Various Sizes Picked Separately

**By Alphonse F. Brosky**
Assistant Editor, *Coal Age*
Pittsburgh, Pa.

VARIATIONS IN ELEVATION of the Island Creek seam with respect to tipple levels at the twelve mines of the Island Creek Coal Co. grouped near Holden, W. Va., have necessitated the employment of several schemes for transporting the coal to the respective tipples. Thus at six of the mines the seam lies below the tipples and coal is raised on concreted slopes by pan conveyors—in one instance by a belt conveyor. At four mines the seam lies above tipple level, requiring pan conveyors to lower the coal from the headhouses to the preparators. However, at one of the four, the difference in the elevations of the discharge feeder in the headhouse and the shaker screen in the tipple is so little as to make the conveyor gallery practically level.

At the two mines most recently opened—Mines 20 and 21—the seam lies so far below the surface that shafts are needed to hoist coal to the tipples. Self-dumping cages are used. Further information covering variations in plant layout at these mines is condensed in Table 1.

Depending upon the capacity of the respective mines, double track in lengths of 600 to 1,200 ft. constitutes the trip landings adjacent to each dumping point. Cross-over dumps are employed at eight mines, kick-back dumps are in use at two, and the self-dumping cages serve the two shaft mines. Although dumping equipment is of these three different types, only three men are required for their operation at each mine, so carefully planned are the arrangements for handling cars. The equipment is so designed that in no phase of the dumping operation do two cars come together violently. This reduces mine-car wear and tear.

The arrangement of the trip-handling and dumping equipment in No. 8 mine, which is representative of seven other installations, is shown in Fig. 1. This mine is now producing about 2,100 tons a day. The double-track trip landing on the load side of the dump is 1,000 ft. long. The trips are moved forward by a feeder. Between the feeder and the dump is a 1½-per cent down-grade which causes each loaded mine car (roller-bearing equipped) to gravitate freely to the dump immediately after it is uncoupled.

The dump itself is inclined sufficiently to cause each empty car to clear the dump before the next car enters. Leaving the dump, the car rolls to a kick-back from which it is shunted to the empty storage track where it is picked up and joined with other cars by a trip maker. One man handles the two car hauls and uncouples the cars; a second man operates the dump and the third couples up the empties.

More space in this article will be devoted to Mine No. 20 than to others because it is one of two of the newest mines in the group. Mine No. 21 is a duplicate of Mine No. 20 in respect to layout and equipment, except for slight differences which conditions required. To reach Mine 20 from Holden one travels south and west about 4½ miles on a stretch of concrete road built by the company along Whitman Creek.

Here has been erected a modern mine plant of concrete, steel and stone, equipped to produce 4,000 tons of coal a day. No. 20 hoisting shaft is 285 ft. deep. It is semi-elliptical in cross section, with extreme dimensions of 12x27½ ft. It is lined with 12 in. to 18 in. of concrete and equipped with self-dumping cages in balance. A solid block of coal measuring 1,151x1,518 ft. surrounds this shaft. The shaft bottom layout is of especial interest because of the ease with which it enables three men to handle coal in 40-car trips at the rate of 4,000 tons in 8 hr.

The shaft bottom proper is supported by a brick arch resting on sandstone piers. The width of this arch is 22 ft., its length 100 ft. and its rise, 3 ft. Its minimum thickness is equivalent to four courses of standard size bricks set edgewise. The thickness of the masonry piers is 2 ft. From the inby end of the arch extends an 1,100-ft. trip landing of two tracks. A portion of the landing adjacent to the arch is permanently supported by steel sets of 15-in., I-section beams on 6-in., H-section legs. The sets are on 4-ft. centers. Already fifty-two such sets have been erected

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In the headpiece are three views at Mine No. 20. Looking at these views one in realty also sees No. 21 mine for the design, layout and equipment in both are duplicates. The desire of the company for permanence of construction in these two plants is illustrated by its use of sandstone in the piers under the big bottom arch and in the walls of the hoist house on the surface. These two mines are built to run for 50 years or more.

**Slope Bottom Arrangement at No. 8 Mine**

The layout of this bottom and the choice of equipment for it are worth particular notice. First, the grades are such as to cause a mine car to gravitate freely from the trip feeder onto the cross-over dump and off again after dumping. These grades are not excessive; it is the roller-bearing wheels that do the trick. One car leaves the dump slightly before another enters, avoiding destructive forces of impact between them.

and 100 more are being erected so that after this work is completed the approach to the shaft will be permanently supported through a distance of about 700 ft.

Loaded cars in trips of 40 are delivered on the storage track by a 15-ton locomotive to a trip feeder which passes the cars, one at a time, over a favorable grade to the shaft. As each car gravitates toward either of two cage landings it passes over an antomatic switch which is thus set to guide the car following to the opposite cage landing.

The car is stopped and held by a friction car-check at the landing. The car-check is manually operated but the cager, to which the car moves on being released from the car-check, is automatic. When a cage reaches the landing level, the stop holding an empty mine car on the cage is automatically depressed; at the same time the cager horns are swung away from the front wheels of a loaded mine car and thus both cars are simultaneously let free to move.

The loaded car moves into the cage, pushing out the empty. As the loaded car clears the cager, a front wheel trips a lever which automatically sets the cager horns in a position to hold the loaded car following. Upon leaving the cage the empty car is delivered by a kick-back to a trip maker which joints it with other cars on the empty-car storage track. The simplicity of this equipment, requiring only three men for its operation, is notable.

An excellent feature of the layout at the bottom of the auxiliary shaft is worthy of mention. Unlike the customary track arrangement at the foot of a man-and-supply shaft, that in No. 20 mine provides a 300-ft. double track. The second track is for the storage and for the assembly of a trip of supplies. By its use the latter job is greatly simplified.

No less important than efficient mining is the handling and preparation of coal on its way from the mine car to the railroad hopper. In Island Creek properties preparation really starts at the face where the miners are required to remove as much as they can see of the one band of slate which divides the seam into two benches and whatever other refuse might be mixed with the coal during shooting. This gob is stowed between the double tracks in the working place. All coal is screened, after which it is customary to pick it on its way to the loading booms.

By following the path of travel of coal through the tipple at No. 20 mine, a fair conception of preparation facilities at all of the mines of this company is gained. This tipple is spread over four railroad tracks, is of all-steel construction and has a capacity of 500 tons an hour. On leaving the mine cars on the self-dumping cages, the coal is guided by a chute into an 8-ton, steel-plate, receiving hopper, from which it is fed by a reciprocating feeder to the shaking screen. A fly gate installed in the receiving chute can be set to divert either mine rock or emergency mine-run coal from the receiving bin, and by means of a second fly gate each of these is directed to its respective destination, the

**Washing Down No. 14 Conveyor Gallery**

Coal dust on an inclined walkway is a menace to those who travel there because it makes treacherous footing. The Island Creek Coal Co. avoids this by removing the dust with a stream of water. This scheme also is employed in cleaning the interior of the tipple.

**Table I—Detail On Island Creek Coal Co.'s Twelve Mines**

| Mine Number | Class | Means of Transporting Coal to Tipple | Conveyor Details Width (in.) | Conveyor Details Length (ft.) | Slope (deg.) | Elev. of Coal with Respect to R.R. Track | Tipple Capacity (tons) | Present Mine Output (tons) |
|---|---|---|---|---|---|---|---|---|
| 1 | Slope | Belt conveyor | 48 | 285 | 18 | 37 (below) | 3,500 | 2,800 |
| 7 | Slope | Apron conveyor | 60 | 260 | 20 | 20 (below) | 2,500 | 2,100 |
| 8 | Slope | Apron conveyor | 60 | 260 | 20 | 20 (below) | 2,500 | 2,000 |
| 11 | Slope | Apron conveyor | 60 | 172 | 35 | 27 (below) | 2,500 | 1,600 |
| 12 | Slope | Apron conveyor | 60 | 172 | 35 | 27 (below) | 2,500 | 1,700 |
| 14 | Slope | Apron conveyor | 48 | 300 | 23 | 90 (below) | 3,500 | 2,600 |
| 15 | Drift | Retarding pan conveyor | 42 | 315 | 30 | 153 (above) | 1,500 | 1,500 |
| 16 | Drift | Retarding pan conveyor | 42 | 244 | 21 | 88 (above) | 1,500 | 1,300 |
| 17 | Drift | Pan conveyor (almost level) | 42 | 108 | 1½ | 61 (above) | 1,500 | 1,300 |
| 18 | Drift | Retarding pan conveyor | 42 | 400 | 30 | 189 (above) | 1,500 | 1,500 |
| 20 | Shaft | Self-dump. cages | .. | ... | .. | 285 (below) | 4,000 | 1,700 |
| 21 | Shaft | Self-dump. cages | .. | ... | .. | 228 (below) | 4,000 | 1,700 |

ISLAND CREEK TIPPLES

*Upper left—Mine 18 tipple on Mud Fork. The coal seam lies 189 ft. above the railroad track. Coal is lowered on a 42-in. retarding, pan conveyor 400 ft. long on a 30-deg. incline. This structure, like all others owned by the Island Creek Coal Co., is carefully maintained.*

*Upper right—At Mine 12. This tipple has a capacity of 2,500 tons in 8 hr. The slope is 172 ft. long and has an inclination of 35 deg. It is provided with an apron conveyor 60 in. wide.*

*Lower—Conveyor gallery and tipple at mine 14. The coal lies 90 ft. below the surface at this point. A 48-in. apron conveyor 300 ft. long and on a slope of 23 deg. is used for lifting it to the tipple. This mine is producing about 2,600 tons a day.*

former to the rock bin and the latter to a railroad car on No. 1 track.

The screening rig is double-decked and perforated to separate run-of-mine coal into lump, egg, nut and slack sizes. The upper deck is provided first with a 7x15-ft. area of stepped screen with slotted perforations which separate the lump and egg from the under sizes. The coal next flows over an 8x7-ft. area of stepped screen with slotted perforations which separates the egg from the lump size. On the lower deck the slack is separated from the nut by a 7½x15-ft. stepped and slatted screen.

From the screen the lump is discharged onto one of two picking tables and either egg or nut or both are discharged onto the other. Thence by loading booms the picked sizes are lowered with a minimum of breakage to railroad cars on the two middle tracks. A cross flight-conveyor extending from the nut-and-egg picking table to the lump picking table enables the prepared sizes to be mixed for loading on the lump track. The slack is chuted directly to a railroad car on No. 1 track. Refuse from the picking tables is carried by a conveyor to a 20-ton rock bin. This conveyor also can carry egg coal to a 20-ton, house-coal bin.

In the Island Creek seam is a 4-in. bed of soft coal at the top and a 10-in. thick bed at the bottom. These softer beds of coal are separated from the remainder of the coal on the picking tables and are loaded on No. 4 tracks as a separate product. The transfer of the soft coal is accomplished by a cross conveyor.

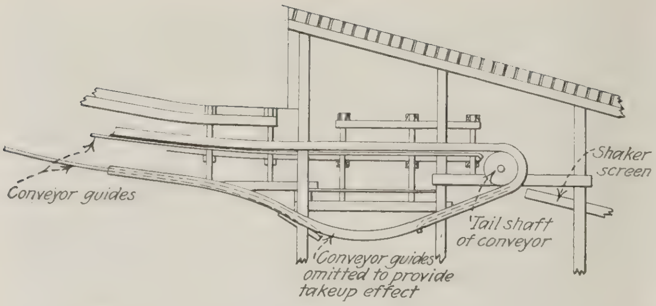
At No. 18 mine on Mud Fork the seam lies 189 ft. above the elevation of the railroad track under the tipple. In the headhouse at this mine, coal is dumped by a crossover dump and is conducted by a receiving chute to an apron feeder, by which the coal is fed to a retarding conveyor. In the receiving chute is a short, screen section which separates slack and drops it onto the conveyor behind the feeder. Thus is formed a soft bed which cushions the fall of the larger sizes as they drop from the feeder to the conveyor.

The conveyor is 42 in. wide and 400 ft. long on a slope of 30 deg. The pans are provided with 1-in. high beads which, together with the fine coal on the bottom of the conveyor, prevent the lump coal from rolling down the slope. This conveyor is driven at a speed of 60 ft. per minute by a 25-hp. alternating-current motor and is equipped with a magnetic brake and also a hand brake for emergency use. It has a capacity of about 1,500 tons in 8 hr.

An interesting feature in the design of this steep and long retarding conveyor line is the absence of a screw take-up. Slack in the conveyor is automatically gathered as shown in Fig. 7, by troughing and gapping the conveyor guides under the return strand adjacent to the tail sheaves. By reason of the "hang" of the return strand from the drive sheaves at the head of the conveyor, the slack in the conveyor sags down in the gap between the guides. This keeps the load strand of the conveyor taut.

Shaking screens, picking tables and loading booms are used in the preparation of coal at all the mines including No. 18 mine.

At Huntington, W. Va., the company is erecting a



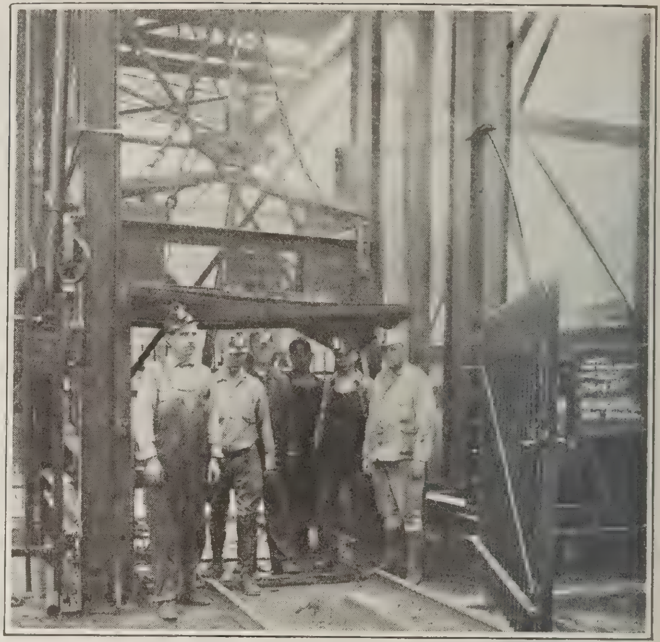
**Automatic Conveyor Take-up at Mud Fork Mines**

The coal here lies above the tipple and consequently retarding conveyors are used. Being of the retarding type the drives are at the head or top so that the load strand of the conveyor stays taut. But this design allows the return strand to hang loose. It is common practice to use a take-up screw to eliminate this slack. At these mines, however (Mines 15, 16, 17 and 18), slack is automatically taken care of by allowing the strand to sag down in a gap in the line of conveyor guides.

reloading station on the Ohio River, to which each day 6,000 tons of run-of-mine coal for steam and domestic use will be shipped by rail from the mines and reloaded into barges for reshipment to ports on the river, chiefly to Cincinnati where a rescreening plant is located. This is not a new venture of the Island Creek Coal Co. The new Huntington plant merely replaces an older plant from which coal has been shipped on the Ohio River for a number of years.

At the new Huntington reloading plant, railroad cars will be delivered one at a time by a steam locomotive to a cradle dump. After being dumped they will drift by gravity out of the dump. From the receiving hopper under the dump the coal will be fed to a belt conveyor and transported without further transfer to the river barges. This belt is 48 in. wide and the conveyor is 400 ft. long. The conveyor is arranged so that coal can be lowered to the barges with a minimum of breakage at any practicable stage of the river.

The rescreening plant at Cincinnati has a capacity of 3,000 tons per day. It is arranged so that the run-of-mine coal shipped from Huntington can be unloaded at any practicable stage of the river and reloaded as run-of-mine; or, after passing over a shaking screen, it can be lowered by loading booms into railroad cars as lump and egg. If desired, run-of-mine, lump or egg can be carried to individual storage bins from which they are withdrawn and loaded into trucks serving local trade. This plant is electrically operated throughout.

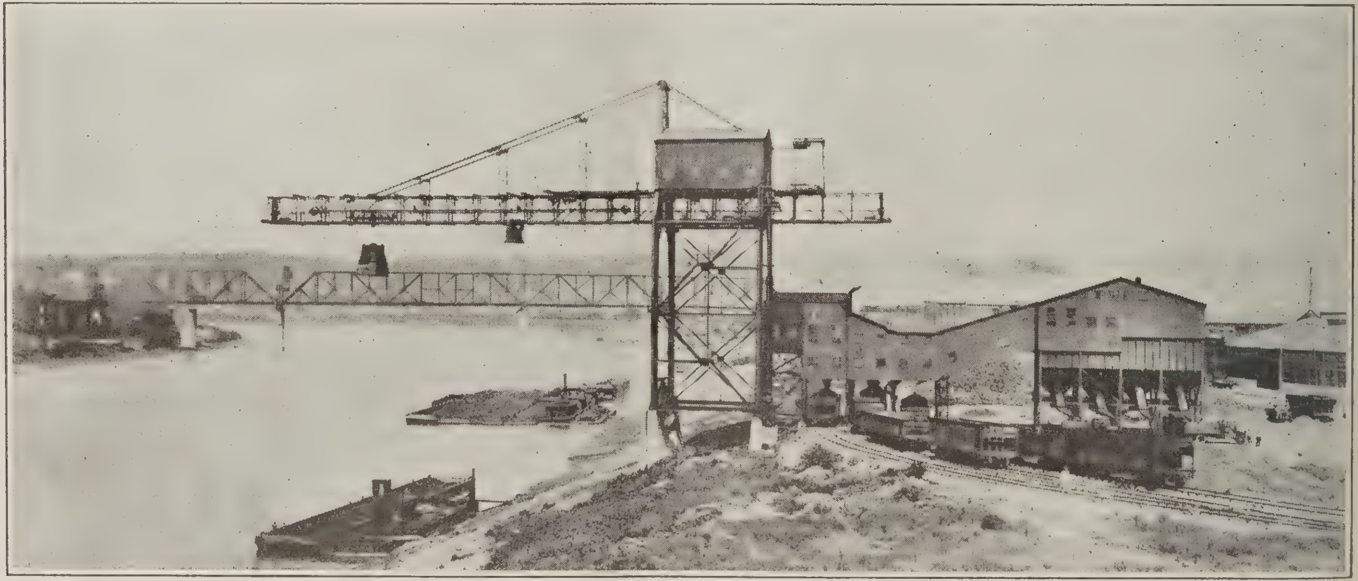


**The Top of One of Island Creek's New Mines**

This is at Mine 20. The company has only one other shaft operation: Mine 21 nearby. These two mines are just now getting into their production stride. At the right in this picture stands Supt. J. H. Madison, in almost spotless togs. He is the big boss of this mine.

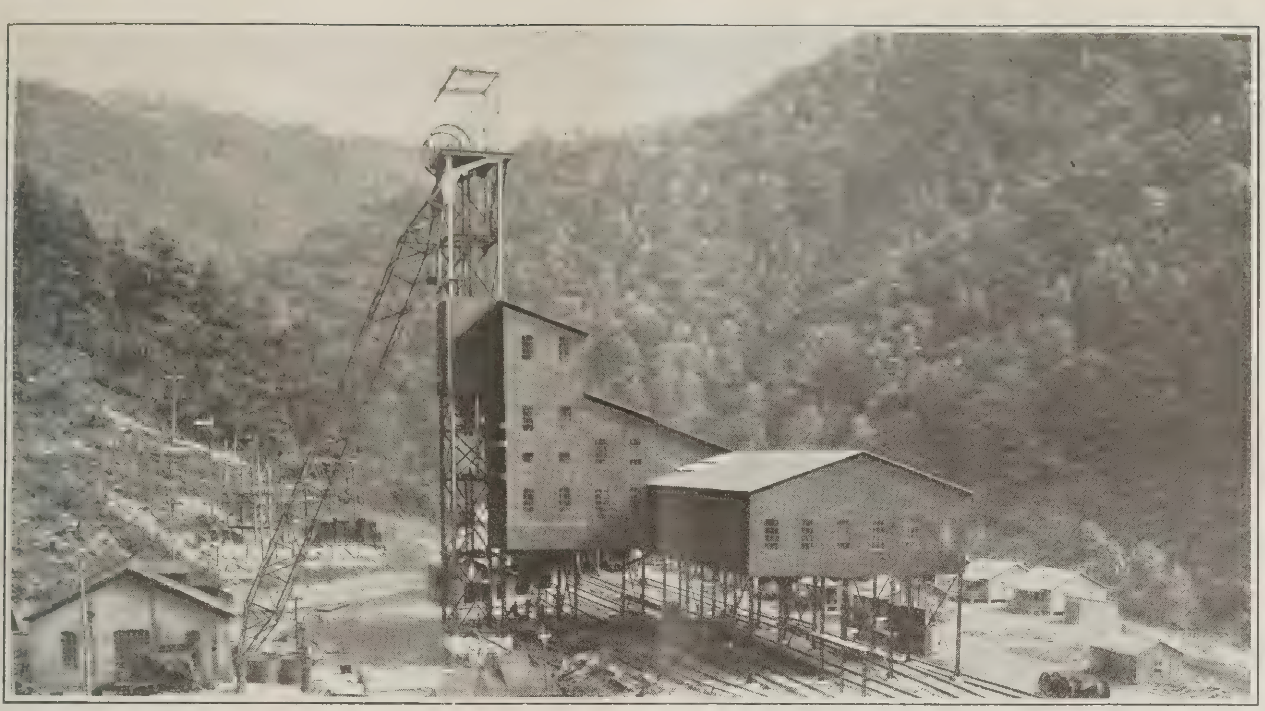
## Island Creek Mines Use Rock Dust

The company operating Island Creek properties believes thoroughly in rock dusting for protection. A good deal of experimental work has been done in the recent past and two dusting machines are on the job. A new campaign starts this fall before the approach of cold weather when moisture in the air will not be excessive as it has been in southern West Virginia all summer.



**Rescreening Plant at Cincinnati Helps Handle Island Creek River Coal Business**

About 3,000 tons of run-of-mine coal is shipped daily by rail from the mines to Huntington where it is reloaded into barges on the Ohio River and transported to this plant at Cincinnati for resizing. The plant has all the facilities of a modern mine tipple except picking tables which are not needed because refuse is removed at the mine.



# "Wireless Mine" at Bartley Strives for Safety

### New Operation of Pond Creek Pocahontas Coal Co. Has No Power Lines Underground Yet It Is 100 per Cent Electrified — Hoists 4,000 Tons Daily in 8-Ton Skips

**By J. H. Edwards**
Associate Editor, *Coal Age*,
Huntington, W. Va.

ON DRY FORK in McDowell County, W. Va., there is located a new mine, which, because of the high quality of the coal, the plans for large production, and a revolutionary step in safety, stands out prominently among the new operations of the country. The revolutionary step in safety puts the mine 100 per cent on a battery system of operation thus removing all power wires from underground. This mine is owned by the Pond Creek Pocahontas Co., which is controlled by the same interests as the Island Creek Coal Co. However, it is operated by its own local management.

The coal mined is the Pocahontas No. 4 seam. A 585-ft. shaft, recently sunk at Bartley, taps the 2,600-acre tract which is owned in fee. Judging from the present showing in the mine, and from a number of core-drill test holes, the coal will average 6 to 6½ ft. over the entire tract. Except for a 1- to 2-in. streak of bone coal located about 2 ft. from the top, the seam is free of partings. In many places this thin streak of bone disappears entirely. Generally speaking, the roof is sandstone. The coal is of a friable nature, has a columnar structure, and is of exceptionally high quality. The latter characteristic is indicated by the following general analysis: Moisture, 1.06; volatile matter, 14.90; fixed carbon, 79.58; ash, 5.52; sulphur, 0.60; B.t.u., 15,000. The high purity makes the coal one of many uses and consequently of constant demand.

Considering the conditions, and the number of problems to be worked out, rapid progress has been made in developing the Bartley mine. Although the main skip shaft was not put into use until June 16, the mine had shipped 150,000 tons of coal by Aug. 1. The equipment is designed for a capacity of 4,000 tons per day. The supply shaft was sunk to the coal, Aug. 1, 1924. From that date until Dec. 1 the coal was hoisted by bucket, then in mine cars on the single cage of the supply shaft until the starting of the skip hoist at the main shaft. The first cutting machine was put into use in December, 1924, and the first locomotive in January, 1925.

Mention of the inside equipment brings up one of the main features of Bartley shaft. It is a "wireless mine," yet the electrification is 100 per cent. Storage batteries are used exclusively for cutting, gathering and hauling. No trolley wires are in the mine and none of the tracks are bonded. This progressive step was taken in the interest of safety. The battery compartments, mining machines, and locomotives are all of the type approved by the U. S. Bureau of Mines as permissible for use in gaseous mines. A more complete description of this equipment will follow later in this article.

Both the main and supply shafts are concrete-lined through their entire depth of 585 ft. The supply shaft is 14 ft. x 27 ft. 6 in. and is divided by a concrete partition, one side being used for air and the other as a compartment for the single cage of the men-and-material hoist. A water ring, sump, and pumping station are located 230 ft. from the top. The water from this

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In the headpiece are shown the headframe and four-track steel tipple. The shaft is 585 ft. deep to the coal with an additional 65 ft. below to accommodate the car-dumping and skip-loading machinery. The rated capacity of the hoisting equipment and of the tipple is 4,000 tons per day.

**Gathering Locomotive in the "Wireless" Mine**

In this mine there are no trolley wires or machine-feeding lines, and none of the tracks are bonded. The battery in this locomotive consists of forty-eight 33-plate, lead cells and is rated at 480 amp.-hr. and 46 kw.-hr. The single motor of this locomotive is connected to both axles by worm gearing.

ring furnishes the domestic supply for the town. It is pumped from the sump to a high tank by a 60-hp. 4-stage centrifugal pump.

The main or skipshaft is 9 ft. x 26 ft. and is excavated to a depth of 65 ft. below the coal. Bottom-discharge skips of 8-tons capacity are used. The equipment at the bottom of the shaft consists of a one-car rotary dump, a 5-ton weigh hopper, and a skip-loading hopper with air-operated gates. A motor-driven car spotter feeds the trip through the rotary dump, and "hikers" located at points on the entry about 300 ft. in each direction from the dump provide added facilities for handling cars. The controls of the dump and of the other bottom equipment are grouped and interlocked so that but two men are required on the bottom.

Both the skip and supply hoists are of the geared type with plain cylindrical drums. The brakes which are set by gravity, are released and controlled by oil pressure. Weighted accumulators operating in connection with automatic pumps keep the pressure at a constant value. Wound-rotor, 2,300-volt, induction motors are used on both hoists, that on the supply hoist being rated at 250-hp., and the one on the skiphoist, 500-hp. Controllers geared to the drum shafts provide complete protection against all conditions of failure of the engineer to operate the hoist properly, and against other conditions such as overspeed due to a broken motor shaft. The duty cycle of the large hoist is as follows:

| | |
|---|---|
| Weight of skip, lb. | 21,800 |
| Maximum weight, material per skip, lb. | 17,000 |
| Total lift, ft. | 690 |
| Maximum rope speed, ft. per min. | 688 |
| Number of trips per hour (max.) | 42.4 |
| Time to accelerate, sec. | 10 |
| Time at full speed, sec. | 50 |
| Time to retard, sec. | 10 |
| Time to dump and load, sec. | 15 |

In actual operation it was noted that when hoisting a skip containing three cars of coal (about 10 tons), the motor takes a peak of 250 amp. at starting, an average of 125 amp. during the first part of the hoist, and drops to around 90 amp. near the end of the run. The full load rating of the motor is 132 amp. Power for operating this and other equipment is purchased.

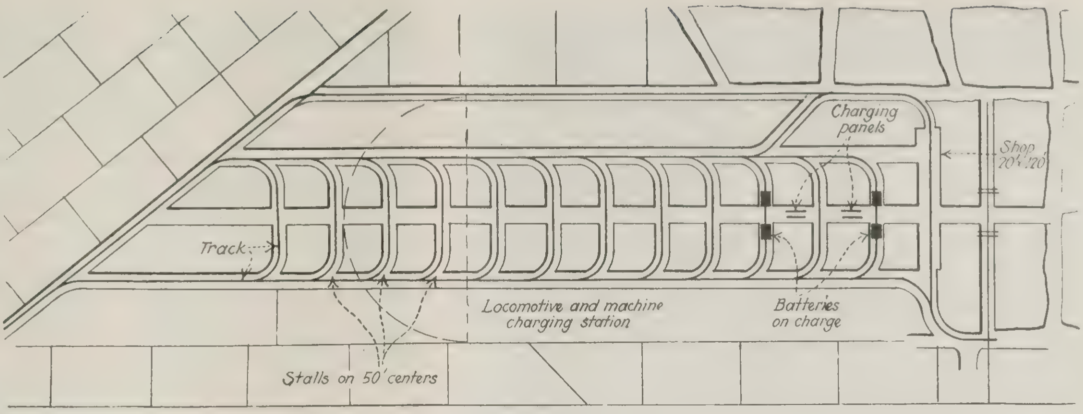
The four-track steel tipple at the Bartley mine is a model among those of its class. The floors and walkways are of concrete, and all shafting, gears, and other dangerous parts are inclosed by guards of sheet metal or wire screen. The tipple is equipped to load four sizes, three of these passing over picking tables and loading booms. By a simple arrangement of cross-conveyors the three sizes of picked coal and the slack can be reassembled when it is desired to load run-of-mine. The refuse from the picking tables is conveyed to a bin from which it is disposed of by a motor-driven, self-dumping larry.

**On the Move**

Arcwall machine traveling to the next place. The electrical equipment of this machine is approved by the Bureau of Mines as permissible for use in gassy mines. Power at 250 volts to operate the machine is supplied by a battery mounted on a self-propelling truck. The coal in the Bartley mine averages 6 to 6½ ft. in thickness, and the only impurity is a 1- to 2-in. streak of bone in which this machine cuts about 2 ft. from the top. In many places this parting disappears entirely.

**Shop Plan**

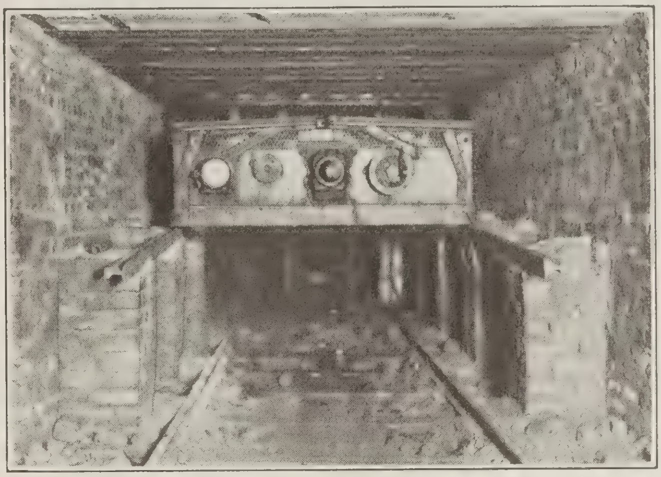
Here all batteries are charged. The compartment containing a discharged battery is deposited in one stall and a compartment containing a charged battery picked up in the adjoining stall. Power for moving the chassis from one stall to the other is furnished from the battery through a portable transfer cable.



The driving equipment of the tipple consists of seven alternating-current motors aggregating 122 hp. All of these, except the three of 5-hp. size on the boom hoists, are of the wound-rotor type. One of 30-hp. drives the three picking tables and the three loading booms. Another of the same size drives the cross-feed and mixing conveyors, and a third, the shaker screens. The remaining motor, of 7½-hp. rating, operates the feed hopper. Drum controllers in combination with magnetic line contractors are used on the one 7½-hp., and on the three 30-hp. motors.

The 12-x5-ft. mine fan is belt-driven from a 150-hp., 585-r.p.m., wound-rotor induction motor. It is the intention to install later a 300-hp. motor on this fan. Because of lack of room this will have a chain drive. The 150-hp. motor will be left in place to serve as a spare. Auxiliary power, operating the fan in case of failure of purchased power, is provided by an 8-cylinder, 1,200-r.p.m., 300-hp. gasoline engine directly connected to a 125-kw. alternator. This emergency power unit can be used for operating the men-and-material hoist at a reduced speed.

Direct current for charging batteries and for operating the slate larry is supplied by a 275-volt, 300-kw., synchronous converter located in a room adjoining the supply hoist. Positive and negative feeders, each of 500,000 circ.mil carry the direct current through the supply shaft to the battery-charging stations. For this duty, single-conductor, standard borehole cable is used. This is insulated with varnished cambric, is lead covered, and armored. The cables, each 585 ft. in length, are suspended at the top of the shaft by clamps.



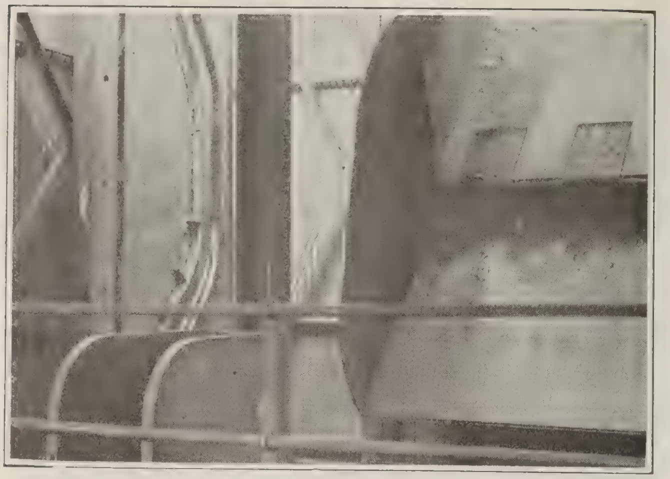
**A Locomotive Battery on Charge**

One of the temporary charging stalls is shown. It was used before the permanent stations were completed. More room is provided in the permanent stations. In order to load this battery compartment, the chassis of the locomotive is run under it, then backed out pulling the compartment along. As the compartment runs down the sloping side rails it settles down into operating position on the chassis.

The same type of cable—except that it is three-conductor—and the same method of support are used for carrying the three-phase, 440-volt power to the pumps

**"Canned" Energy for Cutting**

Each mining machine is followed by one of these power trucks. The battery consists of 110, 31-plate lead cells and is rated at 450 amp.-hr. and 99 kw.hr. This is sufficient energy to operate a mining machine during a full shift. The chassis of this power truck is worm-driven from a single motor. The unit, including the battery compartment, is approved by the Bureau of Mines as permissible.



**The Skip Dumps Its Load**

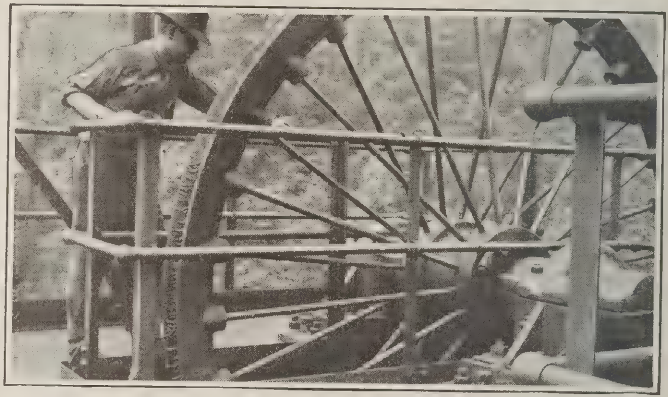
The open gate of the bottom-dumping skip is shown. One of the advantages of this type of skip is that the entire weight is available for counterbalancing the loaded skip as it leaves the bottom. This reduces the power required at starting. To the left can be seen the curved, gate-opening guide of the other skip compartment.

at the water ring and at the shaft bottom. A similar three-phase cable installed in the skip shaft conducts power to the bottom for operating there the seven 440-volt motors capable of developing 262 hp. These motors consist of the following: A 25-hp., wound-rotor driving the rotary dump; a 20-hp., wound-rotor driving the car spotter; two 25-hp., wound-rotor driving the "hikers"; a 7½-hp., wound-rotor operating the weigh; a 150-hp., squirrel-cage driving a centrifugal pump; and a 10-hp. vertical, squirrel-cage driving a centrifugal deep-well pump. This pump raises the water from the pit in the bottom of the shaft to the mine-level sump. The motor is located on a level with the coal and so is above danger in case of flooding of the pit.

Since there are no trolley wires in the Bartley mine the electrical energy for operating the locomotives and mining machines is carried "on wheels" rather than on wires. A storage battery forms a part of each locomotive and coal-cutting unit.

At present, because of the comparatively short hauls, no main-line locomotives are used in the mine. The gathering locomotives deliver the loads directly to the shaft bottom. On this service there are in use five 7½-ton, single-motor, worm-driven locomotives, geared for a speed of 3½ m.p.h. The battery compartments are of the quick-demountable type. Ten of these compartments, complete with batteries and fixtures, make up the power equipment for the five locomotives. This arrangement necessitates no shutdown of the locomotives for charging. One battery is at the charging station while the other is in use. After a locomotive arrives at the station, but a minute or so is required to change batteries.

The coal-cutting equipment consists of two arcwall plates each. The ampere-hour rating is 480 and the kilowatt-hour rating 46. This capacity is sufficient for a full shift. The normal size of trips is five cars, but a locomotive can pull ten or twelve cars. The cars are of 3½ tons capacity and the empty weight of each is approximately 2 tons. They are of the steel-body, wood-bottom type, equipped with open-end roller bearings.



**Inspecting the Sheave Wheels**

These bicycle-type head sheaves are 10 ft. in diameter. The bearings are of the ring-oiled type with large oil cellars, so they need little attention.

The coal cutting equipment consists of two arcwall mining machines and two complete, self-propelling power trucks. A power truck is made up of two main

**Well Lighted Tipple**

Picking tables in the foreground and loading booms leading down through the concrete floors to the tracks are intended to handle nut, egg, and 4-in. lump. The photograph from which this illustration was made was taken just before the tipple went into service. The numerous windows directly above the picking tables and around the walls of the tipple give ample light to aid men to load clean coal.

parts, a chassis and a quick-demountable battery compartment. The chassis is worm-driven from a single motor. The truck carries a 110-cell, 31-plate battery having an ampere-hour rating of 450 and a kilowatt-hour rating of 99. This capacity is sufficient to operate the mining machine while cutting at least thirty places —which means a full shift—and to propel the power truck to and from the charging station, and the truck and machine from place to place.

The accompanying sketch indicates the permanent arrangement of the underground shop and of battery charging stations which is now being worked out at the Bartley mine. At the end of a shift a locomotive power truck will unload its battery onto the charging rails in one stall, then pick up a charged battery in the adjoining stall. A heavily insulated transfer cable will be used as a conductor from a battery while the chassis is moving to an adjoining stall.

**Part of the Mining Town**

This view was taken from the top of the headframe showing one group of the new houses of the Pond Creek Pocahontas Co. Level ground is scarce in the mountains of West Virginia, so every available space has to be utilized for buildings. Note that on the other side of Dry Fork creek there is room only for the highway.

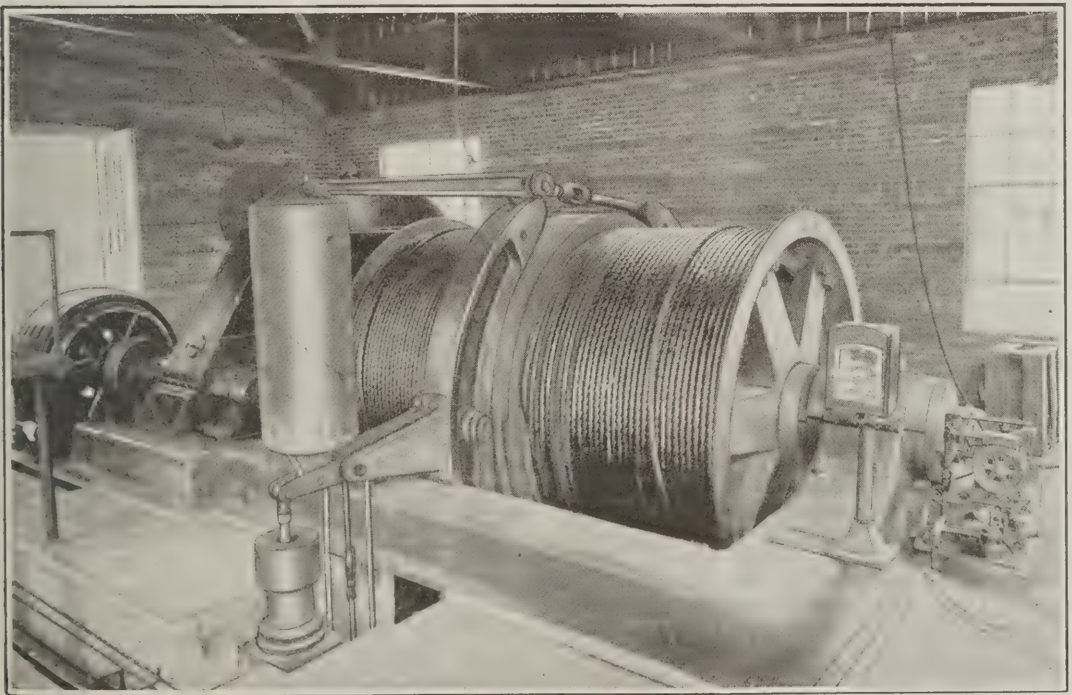
Although the primary object in using storage-battery power for cutting is to eliminate the danger of the ignition of gas or coal dust by open wiring, there are several other advantages afforded by battery operation. The most important are: More places can be cut per shift because of constant voltage because power is continuous and no time is lost in making and repairing electrical connections, there is a saving in the elimination of wires and bonds, and the peak load on the power system is reduced.

**Where the Power Goes Down**

The two 500,000-circ. mil, 250-volt, armoured cables each 600 ft. long are suspended by clamps at the top of the supply shaft. These cables carry current to the battery-charging stations inside the mine.

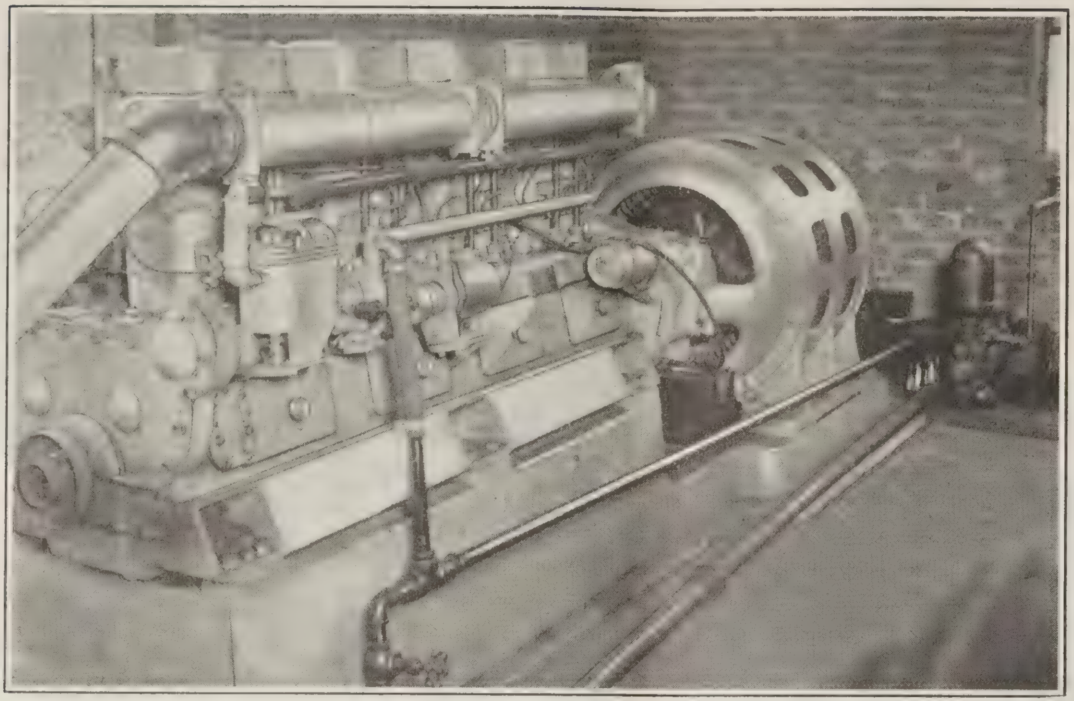
Mining methods at Bartley are not out of the ordinary. No mechanical loading has been attempted, and there is no intention of adopting longwall methods. The coal is cut at a point about 2 ft. from the top and is loaded out in two benches. Shot firers are employed to load and shoot the holes which are drilled by hand by the miners. One shot firer serves ten or twelve miners.

The firing is done by electricity from permissible



**Main Hoist**

Although the total lift is 690 ft. and 8-ton skips are used, a motor of only 500 hp. is required for hoisting the rated capacity of 4,000 tons per day. The hoist brake is set by the large weight in the foreground and is released by oil pressure. At the right is a controller geared to the drum shaft.

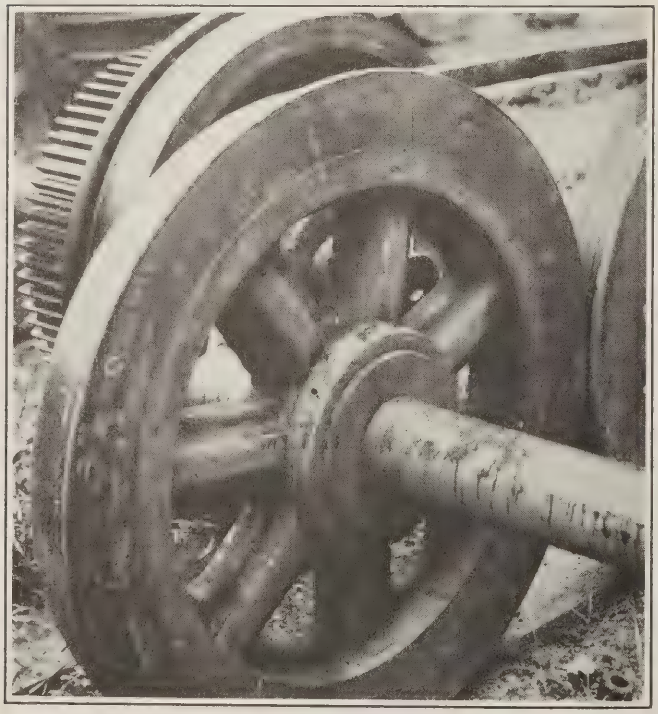


**Standby Power**

In case of failure of purchased power, this 300-hp. gasoline engine directly connected to a 125-kw. alternator generates power at 2,300 volts to drive the mine fan and supply hoist. At the right is a 2¾x 2½-in. single-cylinder pump driven by a 2-hp. motor. This pump supplies cooling water to the engine.

attachments on lamps. The two benches of the 12-ft. face are brought down by four rib shots. Ordinarily one stick of permissible is used in each of the top holes but in many places as little as half a stick suffices. In the bottom bench three sticks are used for the breaker shot, and two sticks on the other side. The shots are fired one at a time and the coal from the first shot in each bench is loaded before the next shot is fired.

With its excellent coal, up-to-date equipment, safe but efficient methods, and good management, the Bartley mine bids fair to be one of the prize operations of the Pocahontas field.



**Collar Holds Fractured Hub**

When wheels turn on their axles the axles are built up and then turned down to a snug fit. In applying the wheel under heavy pressure the hub is sometimes strained. To overcome this defect the Island Creek Coal Co. shrinks a collar on the hub.

## These Men Made Island Creek Mines Important

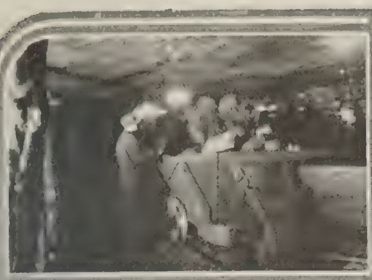
The Island Creek Coal Co. dates back to 1902 when the organization of Boston and Cleveland capital was effected. The company was started in order to develop certain Logan County, W. Va., coal land which formed the nucleus of the great holdings of today centering at Holden. A. F. Holden of Cleveland, engineer and financier, was made president of the company and held this office until his death in 1913. In 1907 T. B. Davis had become vice-president in charge of operations and he it was who succeeded Mr. Holden. He has been in active charge of affairs for the company ever since.

The same group of men organized the Pond Creek Coal Co. in 1911 and operated the property owned by that company until December, 1922 when it was sold to the Fordson Coal Co. Almost immediately thereafter, substantially the same men formed the Pond Creek Pocahontas Coal Co. to build and operate the so-called "Wireless Mine" at Bartley which is described in the last leading article beginning on page 359 of this issue of *Coal Age*.

The local management of the Island Creek properties is in the hands of James D. Francis, vice-president, and A. R. Beisel, general manager, at Huntington, W. Va., where are the head offices of the company. Both these men have been with the company for a number of years. Vice-President R. S. McVeigh of Cincinnati, Ohio, is in charge of sales.

The steady growth of the Island Creek Coal Co. is reflected in the mounting annual output of the mines since 1905 as shown in this table:

| Year | Tons | Year | Tons |
|---|---|---|---|
| 1905 | 147,703 | 1916 | 2,280,661 |
| 1906 | 351,541 | 1917 | 1,933,805 |
| 1907 | 691,547 | 1918 | 1,891,375 |
| 1908 | 941,036 | 1919 | 1,781,413 |
| 1909 | 1,220,326 | 1920 | 1,795,077 |
| 1910 | 1,665,668 | 1921 | 3,240,993 |
| 1911 | 1,876,446 | 1922 | 3,144,423 |
| 1912 | 2,039,887 | 1923 | 3,152,919 |
| 1913 | 1,916,100 | 1924 | 4,951,403 |
| 1914 | 2,207,444 | | |
| 1915 | 2,213,616 | Total | 39,443,383 |



# News
# Of the Industry

## Second Week of Anthracite Strike Finds Both Sides Standing Firm; Union Bitterly Opposes Arbitration

The first week of the anthracite strike has passed with neither operators nor miners showing the slightest intention of receding from the positions that deadlocked the wage negotiations at Atlantic City, N. J., last month. On the eve of the suspension Major W. W. Inglis reiterated his conviction that the strike was wholly unnecessary and that the contention that the miners could not continue work without a contract was a relic of the dark ages of trade unionism. Union leaders interpreted this as another demand that they submit to arbitration and made no concealment of their purpose to oppose to the limit of their resources the successful termination of a "strike to end future strikes," as the operators' attitude has been defined.

No comment was forthcoming from union headquarters at the Bellevue-Stratford Hotel, Philadelphia, Pa., on the action of certain of the operators in the region in canceling the credit privilege to strikers trading at company stores. Nor did President Lewis and his aids express any concern over reports of friction between some of the local unions and the operators over the employment of maintenance men. All such difficulties, it was stated, would be amicably ironed out under the terms of the agreement entered into at Philadelphia on Aug. 28.

### Strike 100 per Cent Effective

Both sides agreed that the suspension was 100 per cent effective. On behalf of the operators it was pointed out that the wording of the Pennsylvania mining statutes requiring two years' experience before certification made the employment of strike-breakers impossible. Moreover, they denied entertaining any intentions of attempting to operate open-shop. On its side, the union also declared itself against separate agreements with individual operators. District No. 1 reported to Philadelphia that one company had offered to sign up a contract embodying the demands in the Scranton tri-district convention platform, but the offer was declined.

Newspaper stories that the miners might again push the nationalization program, quietly sidetracked as soon as John Lewis came into power in the United Mine Works, were met with a prompt denial. In a statement made public Sept. 3 Mr. Lewis denied that the revival of the discussion had originated with the miners. "It is John Hays Hammond and not the mine workers who proposes that the federal administration shall cast overboard its policy of non-interference with business. It is Mr. Hammond who proposes that the Republican majority in Congress shall depart from its traditional policy and through legislation establish a semi-regulation of the anthracite industry.

### Lewis Points Out Hammond

"Surely the astute Mr. Hammond should appreciate that the investment bankers of New York and Philadelphia who control the anthracite industry do not desire the prying hand of Congress to bare to a scornful public gaze the amazing profits which they are taking from a natural monopoly of a public necessity. Mr. Hammond should also know that the federal Congress cannot differentiate between anthracite and bituminous mines when dealing with the basic necessity of coal. It is obvious that any legislation enacted by Congress dealing with anthracite must similarly be superimposed upon the bituminous industry. Such a contingency would be decidedly embarrassing to such friends of Mr. Hammond as the Pittsburgh Coal Co., the Consolidation Coal Co., the Bethlehem Mines Corporation and the B. R. & P. Coal interests, all of whom have torn up their agreements with the United Mine Workers."

The reference to these bituminous companies marked the limits of official comment upon the rumors that the union planned to call a soft coal strike in sympathy with the anthracite miners and to force the government to get behind the Jacksonville agreement. A direct statement on this contingency was refused. To questions whether the anthracite strike could be made fully effective without the co-operation of the bituminous miners, union spokesmen returned the enigmatic response: "Well, we seem to be going on the belief that it can, don't we?"

Neither side made any predictions as to the duration of the tie-up. The operators have been pounding upon the demand that the next agreement should contain provisions that would make future suspensions impossible. They have also launched a daily advertising campaign in the regions showing the markets and the money lost by the suspension. Union leaders express themselves so bitterly against arbitration that they convey the impression that they are willing to hold out to the last ditch on that question.

### *Governor Pinchot Silent On Strike Mediation*

Governor Pinchot of Pennsylvania has not intimated what, if any action, he intends to take regarding the anthracite strike. He is now touring the state, making an inspection of the state and semi-state institutions, and during his absence state officials are powerless to act.

Secretary of Mines Walsh has not communicated with the Governor since his return as one of the Governor's official observers at the Atlantic City conference of the operators and miners. Secretary of Labor and Industry Lansburgh has not heard from the Governor, either, since his recent return from a month's vacation.

"The Bureau of Industrial Relations of the Department of Labor and Industry," said Secretary Lansburgh, "has in effect offered its services as a mediator by being represented by David Williams at the Atlantic City conference. The bureau has no authority in law to force itself upon the contending sides. It cannot go before them unless mediation is desired."

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## Burns Brothers Absorbs Four Coal Firms

Directors of Burns Brothers, New York, approved plans Sept. 2 for the acquisition of one wholesale and three retail distributing coal companies. The properties to be acquired are the Wyoming Coal Co., the Steamship Fuel Corporation, the Schuylkill Coal Co. and the Temple Coal Co. The consolidation extends the sphere of operations throughout the metropolitan district and into New England, as well as other sections, it was said.

The Wyoming and the Steamship Fuel Corporation are the largest of the four companies in the acquisition. Both are owned by the S. A. Wertheim and affiliated interests. The Steamship Fuel Corporation is a wholesale company, selling to retailers in all North Atlantic States, with piers at Norfolk and New York. The other companies are retail distributors.

Payment will be made from the Burns A and B stock, heretofore unissued. No financing will be required.

## Central Pennsylvania Output Gains During Strike

It is too soon yet to determine the full extent of the effect of the strike in the anthracite field on production in the central Pennsylvania bituminous field, as figures for August only are available. The loadings for last month were 60,350 carloads, as compared with 54,606 for July. The seasonal increase accounts for a portion of this but the strike has had its effect as is reflected in the number of idle mines being put into operation and the fact that operators are advertising for miners.

On the present basis, the field is producing 60 per cent of its normal capacity. The district can supply 40,000 carloads, or 2,000,000 tons, additional per month.

Mine No. 1 of the Stineman Coal Co. resumed operations on Sept. 1 with 100 men. The mine had been idle two months. The same company's No. 4 mine resumed a week earlier and is now working at 50 per cent of capacity. Increased output is reported at the Ehrenfeld operations of the Pennsylvania Coal & Coke Corporation. These mines are working three and four days a week after having worked only one and two days for several months. The Barnes-Tucker Coal Co., at Barnesboro, has increased its output during the past two weeks.

The Thermal mines of the Cosgrove-Meehan Mining Co., located at Acosta, Somerset County, recently purchased by a New York firm, have been placed in operation. It is reported that a large contract has been signed with one of the largest public utilities companies in New York, providing for a large tonnage over a period of three years. The daily capacity of the two mines, which are equipped with modern screening devices, is 1,000 tons daily. At the Foustwell mine of the Cosgrove-Meehan company the output has been doubled. This is said to be one of the best substitute coals produced to replace anthracite.

At Nant-y-Glo and Vintondale production is back almost to normal.

## Fire in Omar Mine Sealed; May Burn for Year

After a week of ceaseless work directed by Chief Mine Inspector Lambie and District Inspector J. F. White, employees of the West Virginia Coal & Coke Co. succeeded on Aug. 27, in sealing off the fire in the No. 4 mine of the company, at Omar, W. Va. Sixty concrete block brattices were built around the three hundred acres of pillar territory affected by the fire, which was caused by the wrecking of a loaded trip and the consequent short-circuiting of power wires.

It is thought by engineers that at least a year will be necessary to completely smother the fire. In the meanwhile the mine will be operated by routing the coal around the fire area.

No. 4 mine was the largest of the mines recently acquired by the West Virginia Coal & Coke Co. from the Main Island Creek Coal Co., having a daily capacity of 2,000 tons. Much valuable equipment was lost.

## *Name Commission to Probe British Coal Industry*

Appointment of the Royal Commission of Inquiry which will investigate the coal situation in Great Britain was announced by the government Sept. 3. The commission consists of Sir Herbert Louis Samuel, former Home Secretary, as chairman; Sir William Henry Beveridge, an authority on economics and employment; General Sir Herbert Alexander Lawrence and Kenneth Lee, who has held many important posts having to do with trade and commerce. They will be assisted by several expert assessors, including William Brace, chief labor adviser to the Mines Department, while the secretary of the commission will be C. S. Hurst, Assistant Under Secretary of the Mines Department.

The commission will, according to the announcement, "inquire into and report upon the economic position of the coal industry and conditions affecting it, and make any recommendations for the improvement thereof," as promised by the government when it granted a subsidy in order that the mines might continue to pay current wages. This action prevented a general strike on Aug. 1. The subsidy cost the government about £860,000 in the first month, although coal output was somewhat less than normal. The subsidy will continue in effect until next May, when the commission is expected to be ready to make its report.

## Carbonized Coal Rates Stand

The Interstate Commerce Commission has declined to suspend tariffs of the Illinois Central and other railroads serving the southern Illinois district, naming the same carload minima and rates as apply on lump coal to the movement of carbonized coal, effective Sept. 1. The rates on this product were established at the solicitation of the Old Ben Coal Corporation, which has been experimenting with low temperature distillation for several years and hopes to develop a market for the new fuel. The establishment of the rates was opposed by coke producers and coal operators in other parts of Illinois, in Arkansas and Oklahoma.

As a part of a campaign launched recently to take every possible advantage of an opportunity offered by reduction of freight rates from southern West Virginia to New England on low-volatile coals and to create new markets in New England for West Virginia bituminous grades, the services of the committee on mines and mining of the Chamber of Commerce of Huntington have been tendered Governor Gore of West Virginia and the secretaries of five coal operators associations in southern West Virginia. John E. Norvell, chairman of the committee, suggested that the state Department of Mines might be able to assist in the campaign of education in New England.

## Murray Charges Conspiracy Against Miners' Union

Pittsburgh, Pa., Sept. 8.—A Labor Day audience at Bridgeville, Pa., listened impassively to Philip Murray, of Pittsburgh, international vice-president of the United Mine Workers, declare that the Pittsburgh Coal Co. had joined a conspiracy with three of the largest coal producers of the United States to destroy the union and not to seek economical production. Murray named the Bethelhem Mines Co., the Rochester & Pittsburgh Coal & Iron Co. and the Consolidation Coal Co. as the other members of the "combination."

The Pittsburgh Coal Co. had announced but a day before that, in order to provide accommodations for the increasing number of workers at Banning No. 2 mine, where the 1917 scale is being paid, the company would move idle miners' families to houses of the company at other mines free of charge. On Saturday the mine had 202 men working and produced 563 tons of coal.

The Pittsburgh Coal Co., Mr. Murray maintained, was producing coal at a cost of $22.50 a ton and was employing men picked up in a drunken condition in Pittsburgh streets. Mr. Murray said in part:

"If the Pittsburgh Coal Co. succeeds in its policy of wage depreciation, its effect will be felt most keenly in the business centres of mining communities. Go down to Banning and you will find twenty-five deputies, each armed with a gun, driving union men away."

## No Decision on Rate Fight

No decision as to final action to be taken in combating the recent order of the Interstate Commerce Commission establishing joint through rates from the low-volatile districts of West Virginia to New England and Middle Atlantic states was reached at the second conference of northern operators and railroads held at the Bellevue-Stratford Hotel, Philadelphia, Pa., Sept. 2. There was, however, further consideration of the three lines of possible procedure outlined in the preceding issue of *Coal Age*.

Interested operators from the central Pennsylvania, Pittsburgh, Somerset and Upper Potomac fields are still hopeful that they can persuade the carriers to join with them in their protest to the Commission. To that end a committee of eleven operators, headed by J. W. Searles, president, Pennsylvania Coal & Coke Corporation, met with the coal traffic executives of the New York Central, Pennsylvania, Baltimore & Ohio, Western Maryland and Reading Railroads and also plans to hold another conference with the same officials early this week.

The Northern producers declare that they are in a position to ship 3,500,000 tons of low-volatile and 1,500,000 tons of high-volatile coal suitable for domestic purposes into the New England and Middle Atlantic territory every month. Some discussion was had as to the best way in which to bring this before the coal-consuming public. Formulation of a definite publicity campaign, however, has been held in abeyance.

# Prompt Recourse to Substitutes Urged as Surest Means to Avert Hard-Coal Panic and End Strike

**By Paul Wooton**
Washington Correspondent of *Coal Age*

Now that the opposing forces in the anthracite industry have dug in for what promises to be a long-drawn out struggle, officials and others in a position to serve the public in this crisis are much concerned because of the failure of anthracite-consuming regions to stock up with substitutes. Despite the fact that every day is precious, the movement of substitutes is slow.

When it is considered that anthracite is consumed in the winter at the rate of 7,000,000 tons a week, it means that large tonnages of bituminous coal and coke even now should be moving and orders should be rolling in at a much faster rate than the producers of substitutes report. This attitude is just what John Hays Hammond warned against in his interview when he advised consumers to take the middle ground between panic and lethargy. They have avoided panic, but have fallen into lethargy.

### Consumers Have Responsibility

It is quite apparent that consumers have not been made to realize that they have a responsibility in this situation. Moreover, dangerous doctrine is being spread broadcast. Some of it is being attributed to the President, thereby assuring its publication everywhere. From the accurate knowledge here of the President's views on the coal question it is regarded as practically certain that he has said nothing to justify such an interpretation of his utterances as the following, which appeared in a Washington newspaper:

"A word of caution from President Coolidge to the people who use hard coal:

"Don't rush into the market and buy a big supply of coal. By doing so you will be contributing to a shortage and thereby provide conditions which operators and miners likely seek.

"The President's attitude on the coal strike was stated for him at White Court yesterday. There is plenty of hard coal in sight, he understands. The public can stand a long strike. He will start the necessary wheels of the government moving to provide a continuous supply. When Congress convenes he will ask for the passage of legislation to deal with the situation, if it is then acute. But he hopes the people will not be run off their feet and make the situation serious by heavy buying."

This is typical of what the people are hearing. It encourages them to think that they will be taken care of. In meeting this strike the one great need and the thing most difficult to bring about is to start buying of substitutes. No one will buy substitutes if convinced that "there is plenty of hard coal in sight" or that "the public can stand a long strike" or when assured that the President "will start the necessary wheels of the government moving to provide a continuous supply." It is natural for the consumer who is unacquainted with the inner workings of coal distribution to be influenced by the advice he receives on every hand.

On paper, nothing is simpler than to set forth the availability of adequate supplies of substitutes. This can be done even in New England—that ear of the country which sticks out to the northward and always is the first to feel the frost. With large available surpluses of byproduct coke, of low volatile coal, of medium volatile coal, and of high volatile lump, it would seem simple to provide substitutes indefinitely. The trouble is that the potential supply of bituminous coal and coke is powerless to affect the situation until it is in the consumer's bin.

The great problem that faces the fuel committees in New England, in the Northwest and elsewhere is to induce the consumer to buy substitutes before it is too late. Those who understand the situation thoroughly agree that this buying must begin at once. If the total movement of substitutes needed can be spread over seven months, they can be provided relatively easily, but if buying is delayed until winter sets in and then a sudden call goes forth for 15,000,000 tons or 20,000,000 tons of substitutes in one month, it will be found that they cannot be delivered and prices will be pushed to the anthracite level or even higher.

The duty of the New England fuel committee is plian. They should make a budget of the normal rate at which anthracite is delivered to consumers. If, for instance, that rate for Massachusetts is 100,000 tons a week, then the committee should see to it that 100,000 tons of substitute move into cellars of that state each week.

### Time Required for Preparation

There is another reason for placing orders for substitutes at once. The mines in the territory tributary to New England will have to make special preparations to size and clean their coal in a form suitable for house use. The smokeless and medium volatile coals of central Pennsylvania, Somerset, Georges Creek and southern West Virginia make a fine domestic fuel when specially prepared, but ordinarily the demand for that purpose is too small to justify the equipment necessary. More than 90 per cent of the coal from these districts normally moves as run-of-mine.

The facilities developed by the producers in the Pocahontas and New River districts are absorbed largely in supplying Western trade. It is true that a number of producers in the region on which New England must rely equipped themselves with screens and picking tables after the strike of 1922, but their total capacity for preparation of suitably sized domestic fuel is comparatively small. If put to work now they can go a long way toward meeting the demand, but there are no reserve facilities with which to handle any peak in the demand.

### *Canada Gets Welsh Anthracite*

"The threat of a strike in the anthracite fields of the United States has already brought about large imports of coal from the United Kingdom," says the Canadian Pacific Railway's weekly trade review. "In fact the imports of British anthracite for the present season already exceed the total purchases of these fuels by Canada for last year. The figure for the current season is 246,316 tons of Welsh and Scotch anthracite, as compared with a total of 219,327 tons last year. In addition there has also been received a small shipment of British coke."

To ship mine-run for domestic use would be disastrous to the hopes of the bituminous producers who seek to build a permanent market for their fuel. One season's experience with mine-run coal will confirm the anthracite habit.

### Substitutes Would Hasten Peace

There is still another major reason why buying of substitutes should begin now. If the anthracite belligerents were to see that as much as 2,000,000 tons of substitutes actually are going into the bins of consumers each week, with the consumers pledged to receive a similar amount as long as the anthracite mines are closed, it would do more to hasten the settlement of the strike than would all the suggestions for arbitration or threats of investigation by congressional committees.

It is suggested that the local fuel committees can help the situation materially if they will urge producers and dealers in substitutes to co-operate so that full-time fuel experts are provided in each community to go from house to house where substitutes are to be used to demonstrate how they should be burned.

The committees also should arrange, fuel specialists in Washington point out, to have a consulting service to which the consumer could apply for advice as to the form of substitute best adapted for use in his furnace.

It also is regarded as imperative that fuel committees understand that in this emergency they are simply to supplement the regular machinery of supply and distribution. Their rôle is to arouse the consumer's interest to the point where he will commit himself at the earliest possible date to a definite order for substitutes.

In all this a great opportunity is knocking at the door of the bituminous coal trade. If it contributes constructively to the solution of this emergency, it can add materially to its market and can checkmate the demand for regulation of the coal industry.

## Strike Order in Southwest Has Little Effect

In response to the strike call to all union miners in District 21, United Mine Workers (Oklahoma and Arkansas), employed in mines paying less than the 1924 wage scale issued by William Dalrymple, president of the district, four hundred of the nine hundred men employed in the Rock Island mines near Hartshorne, Okla., walked out Sept. 1. Late in the afternoon, however, the superintendent of the mine announced many had indicated their intention to resume work. None of the mines at Carbon, Colgate, McAlester, Wilburton, Red Oak, Lutie or eastern Oklahoma was affected. Isolated instances of a few men quitting work were reported, but the number was not sufficient to affect production. The same condition was reported from Greenwood, Denning, Russellville and Coal Hill, Ark., where all production is under the 1917 scale, and from Spadra and Paris, Ark., where half of the twelve mines are paying the 1917 scale, while the remainder are operating on a 1924 basis.

Conditions in Oklahoma have been such throughout the summer that a strike order now could be little more than a gesture. McAlester, Hartshorne and Wilburton began early to operate under a lower scale than that signed in Kansas City in May, 1924. There was union opposition and an occasional clash between the workers and union men opposed to accepting a lower wage, but they were infrequent, and production was more or less stable when, a couple of months ago, mines in Henryetta began to follow suit. This precipitated union activities. Mass meetings were held and Oklahoma National Guardsmen were sent into the district to preserve order. Under their restraining influence, picketing has since been conducted. It has been more or less peaceable, but effective to such a degree that most workers to be influenced by union opposition had quit work long before the formal strike order was issued.

*Wide World Photo*

**They Are Counseling New England Against Anthracite**

This is Gov. Fuller's conference of New England governors and their representatives called to suggest ways for the northeast states to meet a shortage of hard coal due to a strike. John Hays Hammond was made permanent chairman. They are, from left to right, seated: James J. Storrow, Gov. Fuller, Massachusetts; Gov. Brewster, Maine; Mr. Hammond; standing, left to right: John F. O'Connell, Boston Chamber of Commerce; Representative Henry L. Shattuck; Congressman Allen T. Treadway; Edward Coss representing Gov. Trumbull of Connecticut; Ernest D. Sprague, Rhode Island; John C. Sherbourne, representing Gov. Billings of Vermont; Mortimer Silverman, Massachusetts coal purchasing agent; James J. Phelan, former coal administrator; Senator Charles P. Howard of Reading, Mass.; Congressman Louis A. Frothingham, and Eugene C. Hultman, Massachusetts, commissioner of necessities of life.

## Coal Mining Consumes Large Percentage of Timber

The coal mining industry consumed 87.3 per cent of the round timber and 58.5 per cent of the sawed timber used underground in 1923 by mining establishments in this country, according to data collected by the Department of Commerce in co-operation with the Departments of Agriculture and the Interior.

Bituminous coal mines consumed 63.6 per cent of the 174,389,004 cubic ft. of round timber and 44.8 per cent of the 507,359,000 board ft. of sawed timber which, according to the report, were used underground by 6,384 mining establishments in 1923. Anthracite mining was the second largest consumer with 23.7 per cent of the round and 13.7 per cent of the sawed timber. Pennsylvania, the leading state, reported 43.6 per cent of the round and 28.7 per cent of the sawed timber, as against 28.8 per cent of the round and 36.1 per cent of the sawed timber used in 1905, in which year 5,163, mines consumed 165,535,900 cubic ft. of round timber and 435,944,000 board ft. of sawed timber.

Summary statistics are presented in the accompanying tables. The figures for 1923 are preliminary and subject to such changes as may be found necessary upon further examination of the reports.

**Table I—Quantity of Mine Timber Used Underground, by Classes of Mines: 1923 and 1905[1]**

| Class of mines | No. of Establishments[2] | | Round Timber (Cubic Ft.) | | Sawed Timber (Board Ft.) | |
|---|---|---|---|---|---|---|
| | 1923 | 1905 | 1923 | 1905 | 1923 | 1905 |
| Total | 6,384 | 5,163 | 174,389,004 | 165,535,900 | 507,359,000 | 435,944,000 |
| Bituminous | 5,149 | 2,940 | 110,983,610 | 91,309,700 | 227,340,000 | 140,790,000 |
| Anthracite | 156 | 216 | 41,358,607 | 43,676,000 | 69,301,000 | 101,201,000 |
| Iron | 165 | 143 | 13,123,228 | 13,484,000 | 16,685,000 | 13,929,000 |
| Other metal | 879 | 1,718 | 8,780,092 | 15,282,500 | 193,333,000 | 164,956,000 |
| Fire clay | 35 | ..... | 143,467 | .......... | 700,000 | .......... |
| Miscellaneous | ..... | 146 | .......... | 1,783,700 | .......... | 15,059,000 |

**Table II—Quantity of Mine Timber Used Underground, by States: 1923 and 1905[1]**

| State | No. of Establishments[2] | | Round Timber (Cubic Ft.) | | Sawed Timber (Board Ft.) | |
|---|---|---|---|---|---|---|
| | 1923 | 1905 | 1923 | 1905 | 1923 | 1905 |
| United States | 6,384 | 5,163 | 174,389,004 | 165,535,900 | 507,359,000 | 435,944,000 |
| Pennsylvania | 1,923 | 754 | 76,008,347 | 47,[illegible]06,500 | 145,528,000 | 157,324,000 |
| West Virginia | 965 | 325 | 17,430,303 | 6,716,000 | 49,519,000 | 19,645,000 |
| Illinois | 344 | 400 | 14,964,030 | 10,342,300 | 15,045,000 | 7,025,000 |
| Montana | 126 | 153 | 4,416,894 | 4,008,400 | 61,817,000 | 62,852,000 |
| Arizona | 115 | 139 | 1,085,844 | 1,045,500 | 61,858,000 | 40,498,000 |
| Ohio | 530 | ....[3] | 6,045,014 | ....[3] | 23,341,000 | ....[3] |
| Kentucky | 410 | ....[3] | 6,534,541 | ....[3] | 20,989,000 | ....[3] |
| Michigan | 81 | 60 | 6,550,501 | 12,602,600 | 10,108,000 | 11,487,000 |
| Minnesota | 57 | ....[3] | 6,336,415 | ....[3] | 10,256,000 | ....[3] |
| Colorado | 227 | 487 | 5,404,933 | 4,340,900 | 6,743,000 | 13,518,000 |
| All other states | 1,606 | 2,845 | 29,612,182 | 78,873,700 | 102,155,000 | 123,595,000 |

[1] Statistics for 1905 compiled by the Forest Service, Department of Agriculture.

[2] Reported as number of mines for 1905 and number of mining establishments for 1923. An establishment in some cases comprises a group of mines.

[3] Included in "All other States."

## Utah to Have New Coal Road In Carbon County

The Interstate Commerce Commission on Aug. 24 issued a certificate of public convenience and necessity authorizing the National Coal Railroad Co. to construct and operate eight and one-half miles of railroad in Carbon County, Utah. The line will serve the Union, Gordon Creek, Great Western and Consumers' Mutual coal companies. The road will be constructed with a stock issue, to be subscribed by the coal companies, and a bond issue of $150,000. It will connect with the Utah Railway Co.'s line, and it is understood that it will be later sold to that company at cost.

At first the program was more ambitious, but it was finally decided to construct the line mentioned only, for the present, anyway. From 7,000 to 10,000 acres of coal land will be grouped around the western end of the new line, which is at present without rail transportation facilities. It is estimated that the first section of road will in the first year handle 250,000 tons of coal, increasing to 750,000 tons by the end of the fifth year. The commission was told that the building of the road would lead to the opening of other coal mines. Present estimates are that the road will cost $437,400 to construct.

# Eureka Mine Goes on Non-Union Basis Despite Threat to Close Jones' Plants In Western Pennsylvania and Ohio

Last week the Eureka mine of the Bertha Consumers Co. started to work open shop under the 1917 wage scale. Since the announcement made recently that the Bertha-Consumers Co. of Pittsburgh, Pa., had formally broken off negotiations with the United Mine Workers in northern West Virginia, union officials and John H. Jones, president of the company, have had almost weekly conferences in Pittsburgh over the situation.

To bridge over the trouble the union agreed to put miners at work in the Eureka mine, at Maidsville, near Morgantown, for several weeks. Upon the abrogation of working conditions with the union, the miners were called out of the pits. Strikers are alleged to have attacked non-union workers since the walkout. The Rachel mines of the company, at Downs, near Mannington, has been operating non-union for several months.

One phase of the controversy that will be watched will be in connection with the union's threat to tie up the Jones plants in more firmly entrenched union districts of western Pennsylvania and Ohio. Nothing has come of it thus far. In the past the Jones concern has been an ardent believer in the miner's union and, if reports are correct, the United Mine Workers lent the firm money from the District No. 5 treasury, in the Pittsburgh district. However, union officials refuse to herald this, saying that it was strictly a personal financial transaction and not a matter of public discussion.

### Bittner Stages "Comeback"

As a "comeback" to the salutation extended to Van A. Bittner, chief international representative of the United Mine Workers in northern West Virginia, on a recent visit to Logan County, that official released for publication in Fairmont recently a letter addressed to J. P. Wright, spokesman of the Logan Chamber of Commerce. After charging that the chamber failed to give him an opportunity to reply to the statements made to him, Mr. Bittner says in part: "Your conduct in inviting representatives of our union to appear before your body and then insulting them as you did without giving anyone an opportunity to reply to your untruthful remarks, was the grossest exhibition of ignorance I have come across anywhere in the United States. However, as I say, I have no feeling against you or any other member of the Chamber of Commerce for your un-American actions because I realize that, living in an atmosphere of ignorance, suspicion and prejudice, as you do, under the domination of the king of bootleggers and thugs, you are simply a creature of environment."

After taking a series of personal slings at Mr. Wright and the commerce body, Mr. Bittner continues: "You can no more stop the organization of the miners of Logan County than you can stop the sun from shining or the rain from falling."

Former Judge Emmett M. Showalter, of Fairmont, general counsel of the Continental Coal Co. of Fairmont, which operates mines in the Scott's Run section of Monongalia County, appeared before the West Virginia Supreme Court in Charleston on Sept. 2 and asked that that tribunal act upon the writ of error granted to Bittner by one of the members of that body as soon as possible instead of waiting until the January term, because it arrived too late for the docket of the present term of court. In a mass meeting in Fairmont May 3, Bittner is alleged to have made attacks on Judge I. Grant Lazelle and his "infernal" injunctions, which were granted in Monongalia County, and personal attacks were made on Mr. Showalter, a former Fairmont banker. Bittner was fined $500 and sentenced to serve six months in the Monongalia County Jail, in Morgantown.

### Dynamite Fairmore Mine

Depredations in northern West Virginia have not halted. The pitmouth of the Fairmore mine of the Fairmont & Baltimore Coal Co., along the M. R. branch of the B. & O. R.R. at Adamstown, Harrison County, was badly damaged Sept. 1, when several sticks of dynamite are supposed to have been thrown in. The force of the explosion was so terrific that one of the rollers used in the rope haulage system was blown three blocks away and rails were broken in twain. The company began to work non-union about a week before the damage occurred. Fifteen outside men had been employed at the mine. A. Lisle White, of Clarksburg, is general manager of the mine.

While figures indicate that the union has the worst of the "go," the interest in the United Mine Workers continues. One of the largest miners' mass meetings ever held in the Fairmont region took place in a field near Monongah Aug. 30, when from 10,000 to 18,000 people were present to hear Bittner and others speak and at an ox roast held at Enterprise Sept. 1 there were 5,000 people present and three steers were slaughtered to feed the multitude.

### Miners Celebrate Labor Day

The United Mine Workers celebrated Labor Day with several large meetings. One was held at Watson and another at Pitcairn, near Clarksburg. John L. Lewis, international president, did not attend the Labor Day meeting in Fairmont, but may come for a Sunday gathering at a later date. The Knights of the Ku Klux Klan entertained the imperial wizard Labor Day and probably Mr. Lewis wanted no counter attraction. Some observers profess to see a connection between the Klan and the so-called American plan, which is opposed to employing foreigners and negroes in the mines.

### *Bryan Prepares to "Put Coal Business in Shape"*

Talk of a coal strike "is the usual show to raise the price of coal," said Charles W. Bryan, former Governor of Nebraska, in Kansas City, Aug. 30, as he rested before continuing his Chautauqua lecture tour. "I know there are fifty million cars of coal above ground now and there is no shortage. The mines are closing down because there is too much production. The operators are aided by the miners and they call the show a strike. The operators now say, 'We cannot mine coal.' After the coal is sold at a high price and the 'strike' is ended, they will say, 'We cannot supply the demand,' and raise the price."

Mr. Bryan reiterated his statement made in southern Kansas a few weeks ago that he will sell coal in Nebraska again this winter at a reduced price. "I will continue to sell coal at a low rate, as I promised the people," he said. "Excessive profits are cut out, and coal prices in Nebraska are forced low to meet my price. I started the coal business when Governor and promised when I left I would continue to help the people, just as their government should, but doesn't."

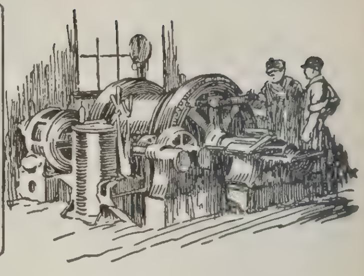
"After putting the coal business in shape," Mr. Bryan said, "Mrs. Bryan and I are going to Florida."

Local labor leaders have encountered the strictest injunction so far issued in the one handed down by Judge Warren B. Kittle of the Taylor-Barbour Circuit Court. By it union members are restrained from making any unlawful threats or suggestions of danger, are forbidden to gather in crowds, groups, single file or any other formation to intimidate employees or prospective employees of the Maryland Coal Co. of West Virginia, are prohibited from marching or staging demonstrations, useing vile, insulting language and especially the word, 'scab', and are restrained from circulating propaganda tending to intimidate employees of the plaintiff.

In the first four days of last week the non-union mines of northern West Virginia produced 5,847 cars of coal, a decrease of 581 cars from the corresponding period of the previous week. Union mines loaded 1,067 cars of coal, a decrease of 57 cars. Some of the non-union mines experienced labor trouble again last week, although it reached no alarming proportions.

Strike conditions are quiet in the Panhandle section. President Lee Hall of the Ohio miners had a conference at Wheeling on Sept. 2, with Andrew R. Watkins, international executive board member of Ohio, and a member of the international organization committee. Mr. Hall issued a statement to the effect that the union mines were working steadier in Ohio and that further improvement in working conditions was expected soon.

# Practical Pointers For Electrical And Mechanical Men



## Drying Sand by Electricity at Mines Cuts Outside Labor Cost

Heating by electricity as compared to heating by steam or heating directly from a stove or furnace is usually so much more expensive that it is entirely impractical. It is only in special cases that it pays to heat by electricity. An unusual application of electric heating is that of drying sand for mine locomotives. A number of the mines of the West Kentucky Coal Co. are equipped with dryers of this type.

Fig. 1 shows an end view of the dryer which is used at the No. 9 mine of the St. Bernard group at Earlington, Ky. Details of the inside of a similar dryer are shown in Fig. 2. The sand box, which is lined with sheet metal, has the following inside dimensions: Length, 6 ft. 6 in.; depth, 36 in.; width at top, 27 in.; width at bottom, 18 in. The resistance tubes or heating units are arranged in three horizontal rows located close to the bottom of the box. An extra-heavy galvanized screen of ⅜-in. mesh forms the bottom. The sand, when damp, will not pass through this screen by virtue of its own weight, but runs through readily when dried.

To provide for easy cleaning, the screen is mounted in a frame which is hinged at one side. When this screen becomes clogged with foreign matter, the dryer is allowed to empty. Then the screen frame is loosened at one side and dropped to a vertical position. The foreign matter falls down or is easily brushed off with a stiff broom.

The wire of the heating units is in direct contact with the sand. These units consist of grade "BB" size No. 12 B.w.g. galvanized telephone wire wrapped on 13/16-in. porcelain tubes which in turn are mounted on ⅜-in. steel rods. Each unit extends the length of the box. For single-phase, 220-volt alternating current, twenty units are used, these arranged in two parallel circuits of ten in series. At 2-ft. intervals the units are supported by large porcelain knobs mounted on cross rods.

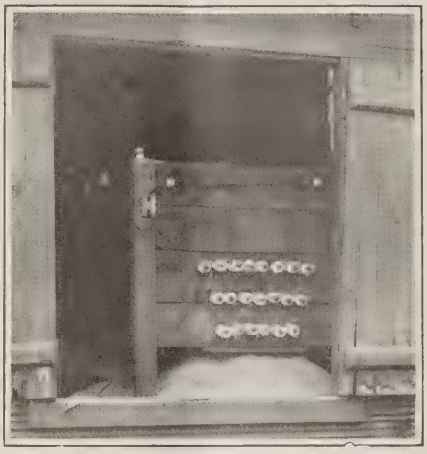


**Fig. 1—Drying Sand at No. 9 Mine**

The West Kentucky Coal Co. is using electric sand dryers at several of its mines. The power cost to operate one dryer is approximately 13c. per hour.

No data was available concerning the energy required by those sand dryers, but it was noted that standard 30-amp. fuses are used on a 220-volt single-phase supply circuit. Assuming that these fuses are carrying full load, the dryer requires 6.6 kw., which, at 2c. per kw-hr., makes the energy cost about 13c. per hour. The West Kentucky company uses the electric dryers where steam is not available. The advantages of the electric over the stove type of dryer is that much less attention is necessary, and there is a decreased fire hazard. After the electric dryer has been filled with sand it requires no more attention until the next filling. In some instances this saving in labor means the elimination of a special man.

This electric dryer was designed by N. W. Umstead, superintendent of equipment of the St. Bernard division. The several dryers in use were made in the shop at No. 9 mine at Earlington.

## Combined Level and Stadia Rod Can Be Read Easily

A new type of combined level and stadia rod or rather a new marking for such a rod intended to afford

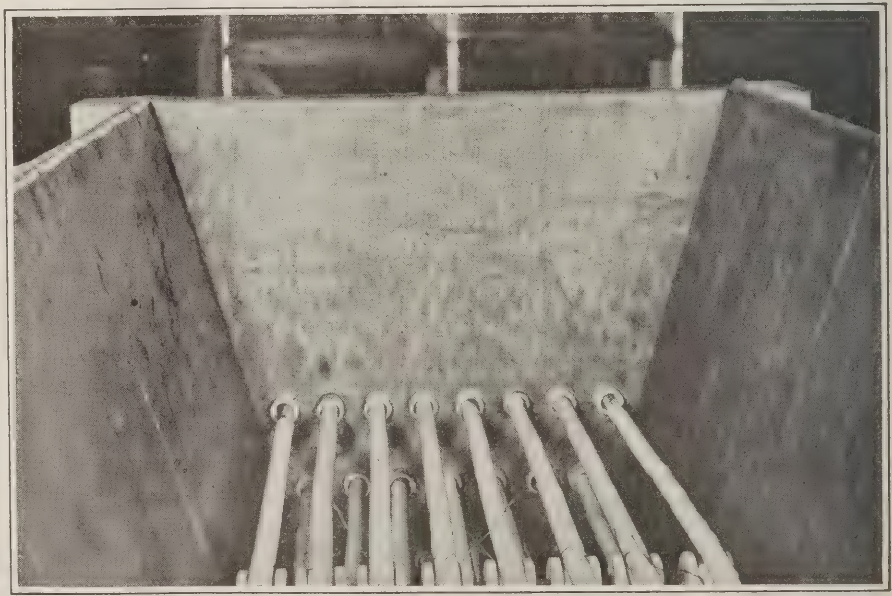
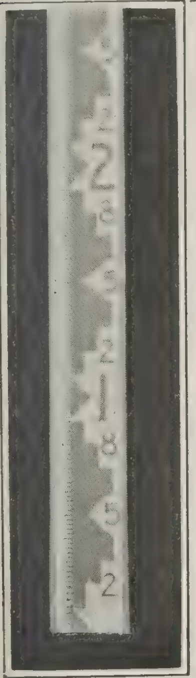


**Fig. 2—Showing the Inside Construction**

Sheet metal is used as a lining for the box. Note the tube cross-supports at the bottom of the illustration. The sand comes in direct contact with the resistance wire of the twenty heating units. The wire is wound on porcelain tubes which are mounted on ⅜-in. x 7-ft. steel rods.

great ease in reading has been devised by Otis Bledsoe, chief engineer of the Sunlight Coal Co., of Boonville, Ind. A portion of a rod bearing this new marking is shown in the accompanying illustration. Patent on this marking has been applied for by Mr. Bledsoe.

As may be seen, the marking of this rod is unusually large and legible. In actual practice this rod has been read with an ordinary transit at a distance of approximately 1,100 ft., this reading being accurate to "half a tenth." Naturally the 1/100 ft. markings were so small as to be indistinct and confusing at this extreme distance.



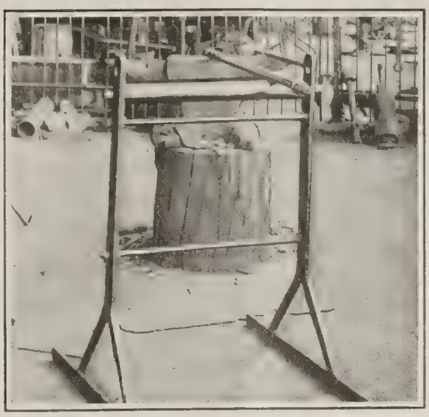
**Easily Legible Markings**

In this system of marking a black point facing the right indicates a foot; a white point facing the left indicates a half foot. The balance of the markings on this rod are so simple as to require little or no explanation. Their nature and clearness are such that they can be read at far greater distance than can any ordinary rod.

## Convenient "Old Woman" Is Effective Helper

Much of the work performed in both the mine blacksmith and machine shop, can be facilitated by the use of a suitable "old woman" to hold up the end of the work opposite that upon which actual operations are being performed. The accompanying illustration shows a device of this kind employed in the No. 4 shop of the Kingston Coal Co., Kingston, Pa. This was built up by the blacksmith and excellently answers the purpose for which it was designed.

It consists essentially of two standards fastened together by distance bolts or rods with a gudgeoned roller extending between them. This roller is made adjustable in height, its upper edge in the picture shown being at approximately the same elevation above the floor as the face of the anvil. Removal of two of the outer nuts on the distance rods will release one of the standards so that the elevation of the roller may be changed.



**This "Old Woman" Never Scolds**

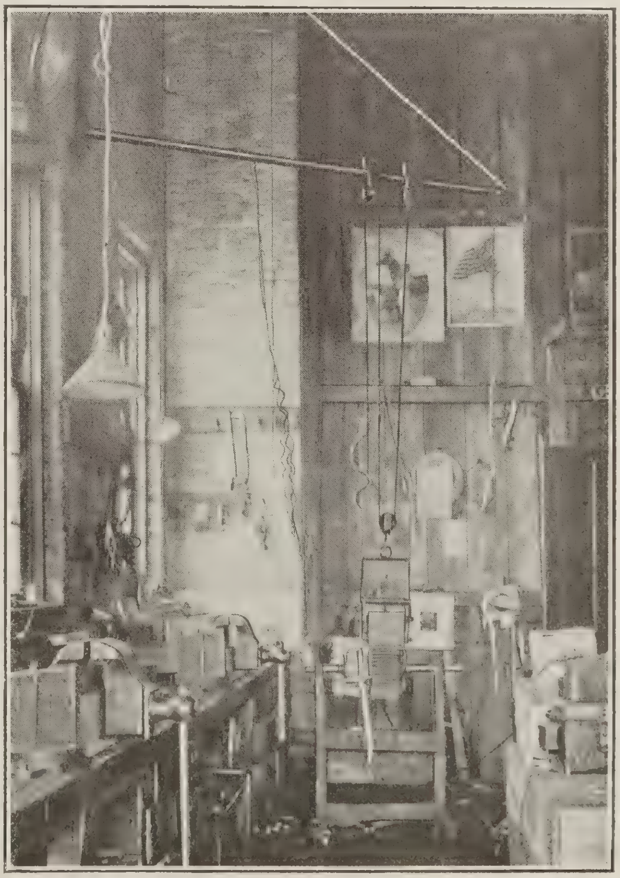
In many operations a suitable support for the dead end of the work is as convenient and effective as a helper. This stand or "old woman" is simply and easily constructed and may be adjusted readily as to height. Those who have built and used it consider it almost indispensable to their daily work.

The standard pieces are split for a certain distance from their lower ends and the two halves spread apart and fastened to horizontal foot pieces, which may be either straps or angles. In this case they are straps. The roller on this "old woman" is about 2¼ in. in diameter and made from a solid rod of metal, the two ends being turned down to form the gudgeons. It would be practical, however, to make this roller of a piece of pipe of suitable size with the ends plugged and the gudgeons driven into or attached to the plugs.

A device of this kind, as may be seen, is extremely simple to construct, yet it readily facilitates many of the operations that must be daily performed in the blacksmith shop of the mine.

## Swinging Jib Frame Aids in Motor Repairs

In the electric repair shop of the Consolidation Coal Co. at Frostburg, Md., the poles for testing armature windings are supported from a swinging jib frame of iron pipes. The apparatus is suspended from a wheel carriage which can be moved to any point on the horizontal member of the jib. By means of a simple pulley arrangement and a counterbalance the apparatus can be adjusted to the height of the armature to be tested. The carriage wheels and pulleys are old trolley wheels. The merit of this scheme is that the apparatus can be moved to any point within the radius of the swinging jib and can be raised or lowered without much effort on the part of the repairman; also it can be swung out of the way when there is no work requiring its use.



*This swinging jib frame supports poles for testing armature windings. The apparatus swung from the pipes is suspended by a wheel carriage and counter weights. The jib can be adjusted to the height of the armature to be tested, thus facilitating repairs.*

# Book Reviews

## Triumphs in Engineering

In interesting fashion with valuably reminiscent illustrations and charts of progress, Conrad Newton Lauer, general manager of Day & Zimmerman, engineers, has summed up 120 years of progress in industry in which story there is a little enough about coal or, indeed, other mining.

This publication entitled "Engineering in American Industry" is a republication of an address delivered on Dec. 12, 1923, before Princeton University under the Cyrus Fogg Brackett Lectureship in Applied Engineering Technology. It contains some 96 pp. measuring 9½x12 in., is printed on a fine grade of paper of *de luxe* character and bound in buckram.

It records what engineering has done to bring prosperity and comfort to the United States and does it in a way that makes it easy for reference. Among other charts are some showing the geographical distribution of industry in the United States by decades from 1849 to 1899 and thereafter by five-year periods, with dates of the principal developments, also maps showing centers of manufacture and of farm production. The book is published by the McGraw-Hill Book Co., 370 Seventh Ave., New York City, the price being $2.50. It has 61 charts and many illustrations.

## Facts Found by the Coal Commission

The average citizen, if he recalls at all the brief existence of the late and unlamented United States Coal Commission, remembers it as the body that spent $600,000 of the government's money without reducing his fuel bill. Not a few men who should know better give the currency of repetition to this flippancy. Disappointed because the Commission did not usher in a trade millenium which would guarantee fat profits and eliminate all worry as to the future, they ignore the cold truth of John Hays Hammond's declaration that "there is no easy panacea for this troubled industry." And many others who have been most glib in quoting the Commission as the authority for this statement and that speak, it is suspected, more from hearsay than from any intimate acquaintance with the reports of the federal fact-finding agency appointed by President Harding.

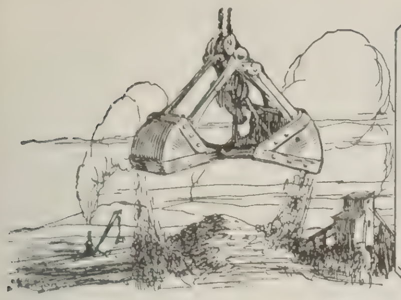
Possibly some of the blame for this state of mind should attach to the Commission, although circumstance was the major offender. The limited circulation necessarily given the mimeographed copies of the reports of the Commission cut down its audience. The highly technical, and sometimes confusing and heavy, character of the reports themselves frightened away many readers. Working against a far too early deadline, the federal fact-finding agency poured out a stream of inchoate facts which the public was in no condition to properly digest. What the Commission has needed has been a Boswell who would make its labors palatable to popular taste and time.

Such an attempt has been made in a volume just published (*What the Coal Commission Found*; The Williams & Wilkins Co., Baltimore, Md.; 416 pp. $5). Considering that it is the work of sixteen former members of the Commission staff, the fact that unevenness in style and in context is not more in evidence pays high tribute to Edward E. Hunt, F. G. Tryon and Joseph H. Willits, who acted both as editors and contributors. If some of the conclusions seem unacceptable, the answer is that whatever vice resides in those recommendations comes from the work of the Commission itself. That cannot be too strongly emphasized if the reader is to have a clear conception of the scope of the volume. The main purpose of the work is not the enunciation of any new theories, but to make available to the general reader those facts and conclusions which received the seal of the Commission's approval. Whatever quarrel there be must be with the Hammond commission, not with the scribes who wrote this book.

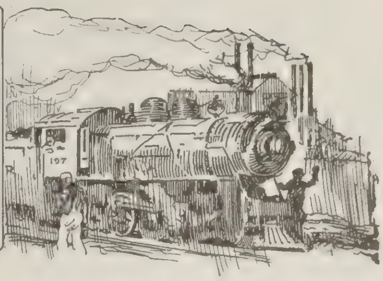
There is, naturally, practically no effort made to evaluate anew the work of the federal fact-finding agency. The direction is all in condensation, selection and digestion of the data put out by the Commission. In some respects, the results achieved represent a notable improvement over the original reports. This is particularly true of Anne Bezanson's studies of wage earnings, which discards many of the confusing and misleading tables incorporated in the Commission's report. The analysis of wage rate structures undertaken by W. E. Fisher will well repay reading in full: his summarizations in the volume under review form an intriguing and informative introduction to that work. Possibly the least readable portions of the book are the costs studies of David E. Wing; the mass of figures dealt with and the necessity for condensation were twin barriers over which the author stumbled on his way to claim the reader's attention.

The *Coal Age* family is so familiar with the reports on underground management, that a passing reference to Sanford Thompson's abstract of his work on that subject is all that is necessary. So, too, with the studies on wastes and better coordination between mining and transportation initiated by C. E. Lesher. More restraint is shown by J. W. Adams as he again wallows gleefully in the iniquities of the jobbers, and he confesses that "the total tonnage affected" by the activities he condemns was small and the practices assailed typical of the "coal bootlegger" rather than the legitimate jobber. There is real meat—not always tasty—in the sections of living conditions and the cost of living in the mining communities written by Bertha M. Neinburg and Marie L. Obenauer. Other features of the Commission's work are covered by H. Foster Bain, James E. Black, Horace B. Drury and Raymond A. Walter. The task of orienting the reader into the spirit of the book falls to Mr. Tryon and Sydney A. Hale.

The format is one of which the publisher may well be proud, and there are few typographical errors. It is all the more regrettable, therefore, that many of the charts in the book are crowded into such small space they are difficult to decipher. This is particularly unfortunate in a work intended for the lay reader who must receive his instruction with the irreducible minimum of personal exertion and inconvenience.



# Production And the Market



## Hard-Coal Strike Finds Country Well Prepared; Bituminous Market Stronger

Though the hard-coal "suspension" is in its second week both sides give every indication of maintaining their present positions indefinitely. Speculation now inclines more to the belief that there will be a protracted period of idleness than was the case at first. In order that an acute shortage may be deferred as long as possible, however, some companies—notably the D. L. & W.—have adopted regulations calculated to spread out the available supply as evenly as practicable, preference being given where necessary to the maintenance of health and comfort.

That the producers did a good job up to the last minute is indicated by an output during the week preceding the strike that exceeded that of the previous week, which was the largest since December, 1922. All in all, the country is unusually well prepared for a strike, as stocks in the hands of consumers are of goodly size and retailers' supplies are heavy.

Prices, too, are keeping within reasonable bounds, considering conditions. Company quotations are but little changed, 10c. having been added in a few instances to the quotations on egg, stove and chestnut, and 50c. on pea. Though independent schedules are considerably higher, some of these producers are out of the market, having been booked for their entire output in advance of the suspension.

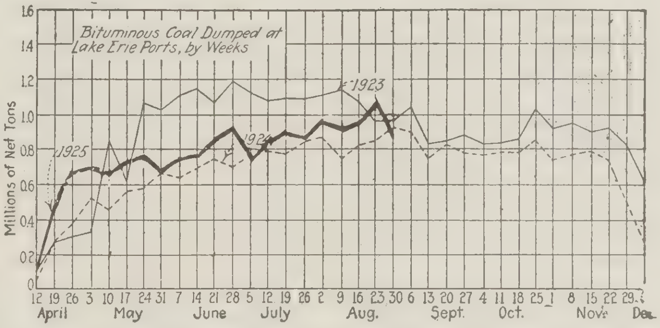
### Soft-Coal Market Maintains Strength

Despite an output exceeding consumption by more than 2,000,000 tons, the bituminous coal market continues to display marked strength. Steady accumulation of reserves by consumers, stimulated by the hard-coal suspension, has absorbed the tonnage unusually well, but how long this will continue will depend to a large extent on the duration of the halt in anthracite production.

Smokeless is easily the market feature, aided by the fear in some quarters that the rate cut by rail to New England on prepared sizes will divert considerable tonnage from other accustomed channels. Practically all grades are strong, however, and prices notably firm.

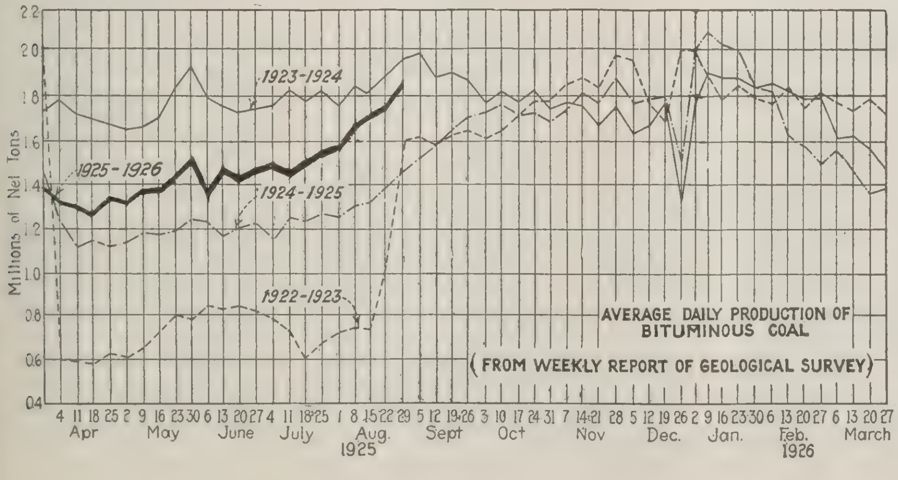
### Output Still Climbing

Output of bituminous coal in the week ended Aug. 29 is estimated by the Geological Survey at 1,218,000 net tons, compared with 10,523,000 tons in the preceding week, as shown by revised figures. Anthracite output in the week ended Aug. 29 totaled 2,319,000 net tons, as against 2,209,000 tons produced in the previous week.



*Coal Age* Index of spot prices of bituminous coal made a further advance last week, standing on Sept. 5 5 at 183, the corresponding price being $2.22.

Hampton Roads dumpings of coal at all piers during the week ended Sept. 3 totaled 421,390 net tons, compared with 411,814 tons in the previous week.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| BITUMINOUS | | |
| Aug. 15 (*a*) | 8,167,000 | 10,261,000 |
| Aug. 22 (*a*) | 8,582,000 | 10,523,000 |
| Aug. 29 (*b*) | 9,006,000 | 11,218,000 |
| Daily average | 1,501,000 | 1,870,000 |
| Cal. yr. to date | (*c*) 300,370,000 | 317,509,000 |
| Daily av. to dte | 1,473,000 | 1,555,000 |
| ANTHRACITE | | |
| Aug. 15 | 1,386,000 | 1,904,000 |
| Aug. 22 | 1,711,000 | 2,209,000 |
| Aug. 29 | 1,837,000 | 2,319,000 |
| Cal. yr. to date | (*c*) 60,307,000 | 62,417,000 |
| COKE | | |
| Aug. 22 (*a*) | 108,000 | 144,000 |
| Aug. 29 (*b*) | 110,000 | 165,000 |
| Cal. yr. to date | (*c*) 6,904,000 | 6,409,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minues two days' production to equalize number of days in the two years.

### Midwest Trade Is Brisk

In the Midwest market the demand for Illinois, Indiana and west Kentucky coals in the past week has been exceptionally good for this time of the year. There has been a general tendency again toward higher prices, especially on the best grades of west Kentucky coal.

Though the operators had quite a few cars of unbilled coal at the mines two weeks ago, this has been disposed of and they are now working on orders, which are coming in plentifully every day. Demand for prepared coal continues good, but operators have difficulty in disposing of fine coal, as large buyers are playing for prices to go lower. Fine coal is still at a low figure in the Illinois field, central Illinois bringing $1.30, and Franklin County screenings as low as $1.40. The prices on Indiana screenings have improved somewhat, Fourth Vein Indiana bringing $1.60@$1.70 and Fifth Vein Indiana $1.25@$1.40.

The market on Eastern coal continues to be very good. Prices have taken another jump of 25c. to 50c. on high grade eastern Kentucky and West Virginia coal and many jobbers have difficulty in covering orders taken on a speculative basis. The big-line yards in Iowa, who control about 70 to 80 per cent of all the retail coal yards in that state, are expected to place orders for five hundred to a thousand cars of eastern Kentucky coal for September and October shipment. Even the cheaper grades of West Virginia coal are bringing a premium, and at that it is difficult to obtain a large tonnage of this coal.

The situation in Pocahontas and New River is serious on account of the anthracite strike. Unheard of prices have already been quoted, the highest so far being $5 per ton, and dealers are willing to pay even that price. Large consumers are holding back, taking only what they have placed for shipment in the early part of August.

In the Carterville as well as the Harrisburg field domestic business has started in with a rush and all mines are oversold on lump and a few on egg. Nut is not moving well and the small sizes as well as screenings are in the way. This is the condition at the shaft mines. At the strip mines all sizes are moving fairly well with the exception of steam, and the prices of these sizes are so low that they move anyway, but in a general way the demand for steam is unusually good everything considered. Railroad tonnage is fair and car supply is good, with working time from four to five and six days a week. Mines that have been idle for many months are resuming and miners are slowly going back.

In the Duquoin field conditions are much better. Four and five days a week working time prevailed last week although steam and the smaller sizes are hard to move. Domestic is sold up for a couple of weeks ahead on lump with egg and nut about even. Prices are in line with the independent prices of Williamson County while strip prices

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| **Low-Volatile, Eastern** | Market Quoted | Sept. 8 1924 | Aug. 24 1925 | Aug. 31 1925 | Sept. 5 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.60 | $3.85 | $4.00 | **$4.50@$4.75** |
| Smokeless mine run | Columbus | 2.00 | 2.10 | 2.15 | **2.40@ 2.60** |
| Smokeless screenings | Columbus | 1.20 | 1.50 | 1.50 | **1.40@ 1.65** |
| Smokeless lump | Chicago | 3.60 | 3.85 | 4.25 | **4.50@ 5.00** |
| Smokeless mine run | Chicago | 1.85 | 2.25 | 2.60 | 2.50@ 2.75 |
| Smokeless lump | Cincinnati | 3.75 | 3.75 | 3.85 | **5.00** |
| Smokeless mine run | Cincinnati | 1.85 | 2.50 | 2.35 | **2.50** |
| Smokeless screenings | Cincinnati | 1.35 | 1.55 | 1.60 | **2.00** |
| *Smokeless mine run | Boston | 4.10 | 4.65 | 4.90 | **5.25@ 5.50** |
| Clearfield mine run | Boston | 1.90 | 1.75 | 1.70 | **1.75@ 2.10** |
| Cambria mine run | Boston | 2.25 | 1.95 | 2.00 | **1.90@ 2.35** |
| Somerset mine run | Boston | 2.05 | 1.85 | 1.85 | **1.85@ 2.20** |
| Pool 1 (Navy Standard) | New York | 2.75 | 2.55 | 2.55 | **2.75@ 3.00** |
| Pool 1 (Navy Standard) | Philadelphia | 2.40 | 2.60 | 2.60 | 2.45@ 2.80 |
| Pool 1 (Navy Standard) | Baltimore | 2.60 | 1.95 | 2.05 | **2.25@ 2.35** |
| Pool 9 (Super. Low Vol.) | New York | 2.10 | 2.00 | 2.00 | **2.10@ 2.25** |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.00 | 2.05 | 1.90@ 2.20 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.85 | 1.75 | 1.90 | **2.00@ 2.15** |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.80 | 1.80 | 1.80 | **1.90@ 2.15** |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.70 | 1.85 | 1.70@ 2.00 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.60 | 1.65 | 1.75 | **1.85@ 1.95** |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.60 | 1.60 | **1.75@ 1.90** |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.55 | 1.65 | 1.55@ 1.75 |
| Pool 11 (Low Vol.) | Baltimore | 1.45 | 1.45 | 1.55 | **1.70@ 1.75** |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.50 | 1.60 | 1.50@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.35 | 1.40 | 1.50 | **1.65@ 1.70** |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.50 | 2.50 | 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.35 | 1.55 | 1.55 | 1.50@ 1.60 |
| Kanawha lump | Columbus | 2.10 | 2.45 | 2.55 | **2.45@ 2.75** |
| Kanawha mine run | Columbus | 1.40 | 1.60 | 1.65 | 1.55@ 1.80 |
| Kanawha screenings | Columbus | 1.10 | 1.30 | 1.30 | 1.25@ 1.35 |
| W. Va. lump | Cincinnati | 2.35 | 2.35 | 2.35 | **2.50@ 3.50** |
| W. Va. gas mine run | Cincinnati | 1.50 | 1.60 | 1.60 | 1.50@ 1.75 |
| W. Va. steam mine run | Cincinnati | 1.35 | 1.50 | 1.40 | **1.35@ 1.60** |
| W. Va. screenings | Cincinnati | .90 | 1.20 | 1.15 | **1.15@ 1.35** |
| Hocking lump | Columbus | 2.40 | 2.60 | 2.75 | **2.65@ 2.90** |
| Hocking mine run | Columbus | 1.55 | 1.65 | 1.65 | 1.50@ 1.80 |
| Hocking screenings | Columbus | 1.15 | 1.45 | 1.40 | 1.35@ 1.50 |
| Pitts. No. 8 lump | Cleveland | 2.35 | 2.25 | 2.50 | 2.00@ 3.00 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.85 | 1.90 | 1.90@ 1.95 |
| Pitts. No. 8 screenings | Cleveland | 1.20 | 1.40 | 1.55 | 1.50@ 1.60 |

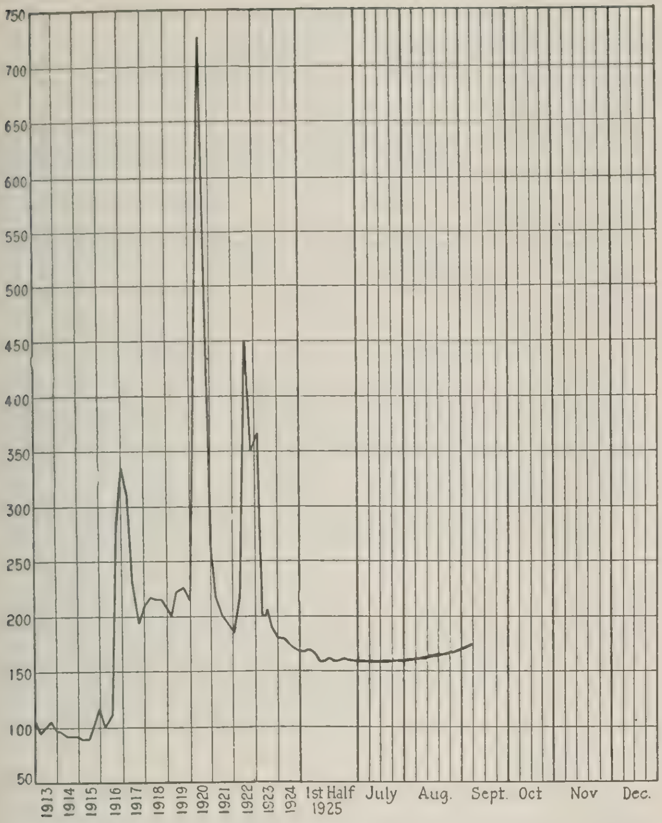
| **Midwest** | Market Quoted | Sept. 8 1924 | Aug. 24 1925 | Aug. 31 1925 | Sept. 5 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $3.10 | $3.10 | $3.10 | **$3.25** |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.65 | 1.95 | 1.95 | *1.50@ 1.75* |
| Central Ill. lump | Chicago | 2.60 | 2.60 | 2.85 | 2.75@ 3.00 |
| Central Ill. mine run | Chicago | 2.20 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central Ill. screenings | Chicago | 1.55 | 1.55 | 1.55 | 1.35@ 1.75 |
| Ind. 4th Vein lump | Chicago | 2.85 | 2.85 | 2.85 | **3.00@ 3.25** |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.65 | 1.60 | 1.60 | 1.50@ 1.75 |
| Ind. 5th Vein lump | Chicago | 2.50 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.50 | 1.45 | 1.20 | 1.15@ 1.30 |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.75 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.15 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.20 | 1.30 | 1.30 | 1.25@ 1.40 |
| West Ky. block | Louisville | 2.45 | 1.85 | 2.10 | 2.00@ 2.25 |
| West Ky. mine run | Louisville | 1.60 | 1.30 | 1.35 | 1.25@ 1.50 |
| West Ky. screenings | Louisville | 1.30 | .75 | .75 | .65@ .85 |
| West Ky. block | Chicago | 2.35 | 2.25 | 2.05 | **2.25@ 2.40** |
| West Ky. mine run | Chicago | 1.60 | 1.20 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.10 | 2.00 | 2.20 | **2.00@ 2.50** |
| Big Seam mine run | Birmingham | 1.75 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.00 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block | Chicago | 2.50 | 2.80 | 2.80 | **2.75@ 3.25** |
| S. E. Ky. mine run | Chicago | 1.60 | 1.95 | 1.95 | 1.85@ 2.10 |
| S. E. Ky. block | Louisville | 2.50 | 3.00 | 2.85 | **2.75@ 3.25** |
| S. E. Ky. mine run | Louisville | 1.50 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Louisville | 1.00 | 1.15 | 1.15 | **1.10@ 1.40** |
| S. E. Ky. block | Cincinnati | 2.50 | 2.70 | 2.55 | **2.75@ 3.25** |
| S. E. Ky. mine run | Cincinnati | 1.45 | 1.60 | 1.55 | **1.40@ 1.85** |
| S. E. Ky. screenings | Cincinnati | 1.00 | 1.15 | 1.15 | **1.10@ 1.35** |
| Kansas lump | Kansas City | 4.50 | 4.35 | 4.35 | 4.25@ 4.50 |
| Kansas mine run | Kansas City | 3.50 | 3.10 | 3.10 | 3.00@ 3.25 |
| Kansas screenings | Kansas City | 2.50 | 2.50 | 2.50 | 2.50 |

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in heavy type; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Sept. 8, 1924 Independent | Sept. 8, 1924 Company | Aug. 31, 1925 Independent | Aug. 31, 1925 Company | Sept. 5, 1925† Independent | Sept. 5, 1925† Company |
|---|---|---|---|---|---|---|---|---|
| Broken | New York | $2.34 | ............ | $8.00@$9.25 | ............ | $8.20@$8.90 | ............ | **$8.20@$8.95** |
| Broken | Philadelphia | 2.39 | ............ | 9.15 | ............ | 8.25@ 8.90 | ............ | 8.25@ 8.90 |
| Egg | New York | 2.34 | $8.50@$9.40 | 8.75@ 9.25 | $10.00@$1.00 | 8.65@ 8.90 | **$13.00@14.00** | 8.65@ 8.90 |
| Egg | Philadelphia | 2.39 | 9.00@ 9.70 | 8.80@ 9.25 | 8.90@ 9.70 | 8.70@ 8.85 | 8.90@ 9.70 | **8.70@ 8.95** |
| Egg | Chicago* | 5.06 | 8.17@ 8.27 | 8.14@ 8.20 | 8.17@ 8.60 | 8.03@ 8.28 | 8.17@ 8.60 | 8.03@ 8.28 |
| Stove | New York | 2.34 | 9.25@10.00 | 8.75@ 9.50 | 10.00@11.25 | 9.15@ 9.40 | **13.00@14.00** | 9.15@ 9.40 |
| Stove | Philadelphia | 2.39 | 9.35@10.00 | 9.15@ 9.50 | 9.15@10.75 | 9.15@ 9.30 | 9.15@10.75 | **9.15@ 9.35** |
| Stove | Chicago* | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@11.00 | 8.48@ 8.80 | 10.00@11.00 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 8.75@ 9.45 | 8.75@ 9.25 | 10.00@10.75 | 8.65@ 8.90 | **13.00@14.00** | **8.65@ 8.95** |
| Chestnut | Philadelphia | 2.39 | 8.85@ 9.80 | 9.15@ 9.25 | 9.15@10.15 | 8.85@ 8.90 | 9.15@10.15 | **8.85@ 8.95** |
| Chestnut | Chicago* | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@11.00 | 8.28@ 8.50 | 10.00@11.00 | 8.28@ 8.50 |
| Pea | New York | 2.22 | 5.00@ 5.25 | 5.50@ 6.00 | 5.75@ 6.25 | 5.00@ 5.55 | **6.00@ 7.00** | **5.00@ 6.00** |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | 5.50@ 5.90 | 5.00@ 5.50 | 5.50@ 5.90 | **5.00@ 6.00** |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.25@ 5.75 | 5.05@ 5.36 | 5.25@ 5.75 | 5.05@ 5.36 |
| Buckwheat No. 1 | New York | 2.22 | 2.25@ 2.70 | 3.00@ 3.15 | 2.30@ 2.75 | 2.50 | **2.60@ 3.00** | 2.50 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | 2.50@ 2.75 | 2.50 | 2.50@ 2.75 | 2.50 |
| Rice | New York | 2.22 | 1.75@ 2.00 | 2.00@ 2.25 | 2.00@ 2.25 | 2.00 | **2.25@ 2.50** | 2.00 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | 2.00@ 2.25 | 2.00 | 2.00@ 2.25 | 2.00 |
| Barley | New York | 2.22 | 1.25@ 1.50 | 1.50 | 1.60@ 1.80 | 1.50@ 1.60 | **1.80@ 2.00** | *1.50* |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | 1.50@ 1.75 | 1.50 | 1.50@ 1.75 | 1.50 |
| Birdseye | New York | 2.22 | ............ | 1.60 | ............ | ............ | 1.80@ 2.00 | 1.60 |

* Net tons, f.o.b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Sept. 7 | Aug. 31 | Aug. 24 | Sept. 8 |
| Index | 183 | 174 | 172 | 166 |
| Weighted average price | $2.21 | $2.10 | $2.08 | $2.01 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

range anywhere from independent prices down for as much as a dollar.

In the Mt. Olive field there has been no increase in price and domestic is in good demand for lump and egg and steam is about equal to the demand. Railroad tonnage is fair. In the Standard field there has been an increase in movement but prices are low and just about cost of production is realized. A few mines are starting up over the field and working time is from three to five days a week.

Movement of domestic coal at St. Louis continues good and a drift is beginning from high grade to middle grade on account of the high prices. Duquoin and Mt. Olive coals are rapidly coming into favor. Standard is still slow excepting on apartment and similar contracts. The poorer elements have made no effort to place their coal orders and this will cause a fairly good demand when cold weather comes for cheaper coal. Anthracite is slow. The strike has caused no uneasiness here. The storage supply is ample to take care of requirements for the winter. Smokeless is not in demand and coke is moving slowly.

### Improvement Steady in Kentucky

Steady improvement in production is reported in Kentucky with more mines in operation and on better operating schedules. The eastern Kentucky fields are quite busy and western Kentucky is gradually increasing, with a few mines showing full time operations. A large number are running half to three quarters time, the average for the field on latest reports showing 47 per cent of potential time.

About the only price changes reported over the week were in eastern Kentucky, where it is said the cheapest of block coal is bringing $2.75, while some of the specialty coal producers are asking as high as $3.50, but $3.25 appears to be the sales top. Eastern Kentucky screenings also are higher, so-called "cat and dog stuff" going as low as $1.10, but good screenings are reported to be selling at $1.25@$1.40. Western Kentucky showed no change, still having plenty of room for more business.

Demand is strong for all grades, prepared moving well to retailers, while industrial concerns are taking some prepared, some mine-run, and keeping the market well cleaned up on screenings, especially screenings from gas coal. The Kentucky trade is feeling better over the general situation than at any previous time in many months, as conditions are pointing to good volume and good values.

### Northwest Business Improves Slowly

A spurt in anthracite was the outstanding feature at Duluth last week, but other coals, apart from Pocahontas, have not picked up to any extent. In spite of the wide spread between anthracite and bituminous prices, retailers report sales of hard coal so far this season larger than up to the same time last year. If the strike ends before the close of navigation it is thought that this market can easily absorb around 1,100,000 tons of anthracite during the present coal year.

Apprehension is felt lest there be insufficient supplies of Pocahontas in this market this season, due to the hard-coal strike and lower freight rates. The almost universal call for prepared sizes is embarrassing dealers and it is likely that domestic consumers will find it necessary to accept more mine-run. There has been difficulty in disposing of smokeless screenings, but demand is being created for them to mix with other screenings to heat public and commercial buildings owing to the campaign being inaugurated against the smoke nuisance.

While industrial demand for bituminous coal is still light, some improvement is being shown and orders are expected to reach a good aggregate this month. More utilities and municipal boards in northern Minnesota are expected to put out specifications in the near future for large tonnages of steam coal. Demand for steam coal from iron mining companies on the Minnesota ranges is limited and no substantial new bookings from the independent iron mining companies are looked for this fall.

With an advance of 10c. on Sept. 1, anthracite quotations are back to a winter basis. Prices now are: Egg, $13.10; stove, $13.50; nut, $13.35; pea, $10.50, and buckwheat, $6.50. Domestic coke is unchanged at $8.50 and briquets are $9.

Milwaukee coal dock managers report a heavy demand for all kinds and sizes of coal, with an increase of interest in anthracite, which local retailers advanced 10c. a ton Sept. 1. On the 10th 60c. is to be added to the price of coke, which was advanced 50c. a ton Aug. 1. There also was a sharp advance in Pocahontas last week. The inflow of coal by cargo continues steady.

### Southwest Busier but Cautious

As demand in the Southwest continues to improve with the approach of winter the price of Kansas lump is becoming firmer at $4.50, though some operators still quote it at $4.25. Mines in Kansas are working virtually full time and others are being opened. Kansas is the only state of the Southwest where stable conditions prevail, and even there operators show a tendency to limit production rather than gamble on the future by opening up in excess of present demand. In Arkansas conditions are unchanged from the last few weeks. A few mines are working under the 1917 scale, others under that of 1924, and others are closed pending the stabilization of wages at a reduced figure. In Oklahoma, union opposition to operation under the 1917 scale grows steadily more pronounced, exerting a psychological depression on the market that denies the open shop mines an opportunity to demonstrate how effectively they might be able to supply a normal demand.

Demand for domestic coal, both lump and nut, as well as slack, continues to increase in Colorado, and mines are speeding up production. Inquiries continue to come from territory heretofore unapproachable. Mines are operating without any labor difficulties.

Effective Sept. 1 the price of Walsenburg lump is $5.50; washed nut, $4.50; washed pea, $3; Trinidad coking coal over 6-in. screen, $4.25; over 3-in. screen $4; nut, $3.75; pea, $3; Trinidad Segundo coke, $7.50; Crested Butte high grade anthracite No. 1 and 2, (furnace size), $7.25; Nos. 3 and 5 (base burner size), $7.75.

The coal business in Utah is getting better. Dealers are placing larger orders, most of which are for immediate delivery rather than storage. Business, however, is not even now what it ought to be, and if the present car shortage develops to serious proportions many will go without coal this fall and early winter.

The industrial market for coal continues steady, though business is none too heavy. The mines and smelters, cement plants and railroads are among the largest consumers. The sugar companies are buying a little coal, but supplies held over from last year, on account of a short run, will prevent their taking as much coal this fall as they would otherwise have taken. The slack market is described as "fairly easy." A few weeks ago it was difficult to supply the demand on account of the shorter working time. Prices remain unchanged. There is practically no discussion now regarding prices. The labor situation is excellent.

### Bookings Lively at Cincinnati

With several northern Ohio cities practically down to bed rock on smokeless supplies the bidding for "car numbers" at Cincinnati sent the market to about $5 for lump, with egg in close pursuit. Indiana and northern Illinois dealers accustomed to low volatile tonnage at this time of year added their business and an uncommonly large tonnage was booked in the first few days of the month. Some of the wholesale houses and direct selling agencies, especially those of the New River field, soon were taking business at the market for what available coal they would have for the rest of the month. Stove and nut moved up to $3@$3.50, and while mine-run was stationary and strong at $2.50 it was an open secret that another step up could be expected there. Screenings were solid at $2, mostly because the heavy contracting to byproduct plants had left little free coal in the large make of domestic sizings.

Locally little credit is given to the anthracite troubles for the general advance in prices, dalliance of buyers who could have had coal weeks ago being stressed as the real reason.

The upward move in high volatiles has not been so pronounced. Harlans and Elkhorns lead the Kentucky list, with the best block at $2.75@$3.25. Egg trails a little while the best gas mine-run is strong around $1.75. Low grade steam mine-run may be had around $1.35—the biggest spread, top and bottom, in this make for nearly a year. Due to the action of certain of the Logan County (W. Va.) producers the spread on 4-in. lump is not so great with $2.50 as the low and $2.75@$3 the top. The rest of the list is about the same as the Kentucky offerings.

Local retailers are now attempting to follow the smokeless market with a quotation of $9 for smokeless lump, "good for one week only." On mine-run, where supplies are assured, the price is $6.50 and some asking 25c. more for hilltop delivery. No great change has been made in bituminous pricings with $6@$6.50 for lump and $4@$4.50 for slack.

With the anthracite strike a reality, demand for all kinds of domestic coal has increased at Columbus. Smokeless grades have been practically withdrawn from the market. Other grades of West Virginia coals, including the semi-smokeless varieties, also have strengthened to a large extent. Retail prices have advanced to a certain extent, especially in smokeless grades, which are selling at $8.50@$9.25 delivered. Splints are $7.25@$8 and Hocking and other Ohio mined grades are firm at $6.50@$6.75.

There is no corresponding demand for steam grades in the Ohio market, however. Some quiet buying is reported, but prices have not advanced to any extent. Large users, including utilities and large manufacturers, have placed some contracts recently. Practically all school coal has been delivered, but municipalities and public institutions will soon place orders. Railroad business is pretty well taken care of.

Some Ohio mines which have been idle for a year or two and even longer have been prepared for starting and quite a few are in operation. Production figures have increased to about 35 or 40 per cent of capacity in the southern Ohio field.

The eastern Ohio market, in both anthracite and bituminous, has been stimulated by the anthracite strike, causing consumers of both steam and domestic to enter the markets.

Prices, therefore, are holding firm at the higher levels, to say nothing of the further sharp advances in smokeless bituminous and anthracite for domestic use. Pocahontas is quoted at $5 per ton for lump, f.o.b. mines, while anthracite is $13.50@$14.

This situation in domestic has been reflected in steam market activity although prices have not been affected to the same extent. Most industrial concerns have or are now buying not only for current needs but also building up a small reserve.

All eastern Ohio mines which are operating are reported to be receiving orders almost to capacity, but as yet no additional mines have been reopened to take care of additional demand.

### Pittsburgh Trade More Cheerful

The turnover in Pittsburgh district coal continued to increase last week at a moderate rate and sellers are more cheerful. Domestic coal movement is now moderately heavy and prices have been hardening somewhat. The steam slack market must have more absorbing power, for the increased production due to shipment of domestic lump has not lowered prices, which are still quotable at $1.30@$1.35. Production in the Pittsburgh district as a whole probably is above 25 per cent now, is against 20 per cent or less in July.

The strike is on, but has not affected the Buffalo coal trade much. The bituminous trade is just the same. A few shippers are trying to get a better price with a trifle of success, but as a rule the old bottom prices hold very much as they did. All the mines are asking more. As a rule they are not getting it in this market. Still everybody is hopeful. Prices are unchanged.

### New England Market Stiffens Further

The steam coal market in New England is responding to the pressure exerted by volume shipments west from the West Virginia smokeless districts. A shortage of anthracite is relied upon to provide a ready market for Pocahontas and New River lump, egg and nut in territory north and west of the Ohio River and every effort is being made to crowd these coals in that direction. Mine-run also is being shipped west in quantities at $2.60@$2.75 per net ton at the mines, a price level that would mean $5.43@$5.60 per gross ton f.o.b. vessel at Hampton Roads. Receipts at the tidewater terminals are relatively light in consequence, and to help out in loading boats spot coal is in strong request. Coastwise coal has already brought $5.25, and unless the Western market cracks wide open under the strain of heavy consignments it is likely the Hampton Roads price will continue on its upward trend.

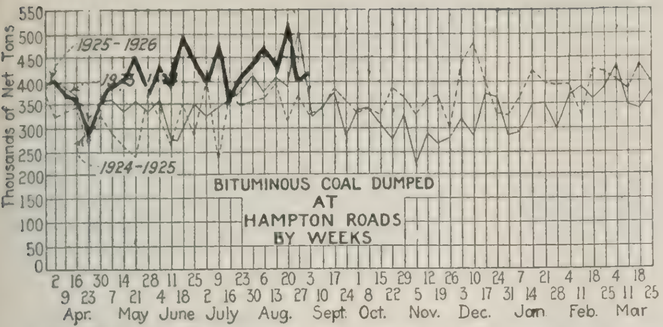
Prices on cars Boston and Providence also are mounting from day to day; $6@$6.25 as a market level has given way to $6.25@$6.50, and there is more buying in evidence than a week ago. The larger storage piles begin to show inroads, and factors who were pressing coal on their trade are now conservative in deliveries and are showing some anxiety over diminished receipts from Norfolk and Newport News. As yet there cannot be said to be anything approaching a broad market in this territory, but buyers are showing keener interest, and if the further course of prices is at all convincing there should be a really active market.

Quotations on coals from central Pennsylvania also are advancing. This is particularly true of the harder textured coals that are suitable for sizing and will carry well in shipment as substitutes for anthracite. Steam coals as such also are beginning to react.

### Strength Appears in New York Market

Considerable strength developed in the bituminous coal market at New York in the latter half of last week. Low volatile coals advanced an average of about 25c. for some grades and there was a heavier demand for low volatile domestic coals. There was no increase in demand noted for high volatile coals, however. Operators complain of the labor shortage at the mines due to the hunting season and the shift of many miners to other fields of industry.

Heavier demand has resulted in many operators being sold up for the better grades of coal for some weeks, and buyers are now willing to consider the cheaper grades in making purchases. So far there have been but few inquiries for screened bituminous coals from hard coal users but coke is gaining strength rapidly.



There was an added demand for coal at Philadelphia last week, but it is believed that after the first effects of the anthracite suspension wear off there will be a slight moderation in the soft coal market, as the usual consumers of anthracite steam grades are well stocked and continue to get good supplies from the storage yards. With so much strike talk in the air, however, the usual buyers of soft coal have been ordering more.

All prices are given now subject to acceptance on a given date. Contract customers are coming in for their share of fuel better than for some weeks.

There is considerable activity in gas grades, especially screened coal, although the largest users of this size are slow to accept coal at any increase in price. The railroads seem more interested in mine-run and are laying by more than usual and at a higher price.

Influenced by a seasonal demand for coal and the call resulting from a desire to protect industries against any sudden rise in the market due to strike complications, the price of all classes of bituminous coals advanced steadily in Baltimore last week. The increases were 20c. to 25c. Despite increased inquiry and closings on contracts, there is plenty of fuel to meet all needs, and some further change in the relationship of supply and demand probably will be necessary before there is a really sharp rise in the market. A gradual increase in price, however, is predicted. Exports of coal from Baltimore during August were larger than the foreign shipments from local terminals during any month since July, 1924.

At Birmingham consumers are now buying steam coal fairly well, the demand for high-grade washed and mine-run showing the greatest strength, with supply and requirements under present operating conditions about equal. Well prepared product from the Cahaba, Black Creek and Corona seams is fairly well sold ahead and such mines are operating on greatly improved schedules over a few weeks ago. There is also some improvement in demand for medium and lower quality commercial coal.

Domestic trade is picking up some. Car lots are being bought in greater number for shipment to individual consumers and community centers, while dealers who have not stocked any coal of consequence are beginning to make inquiry and place some business.

Quotable prices on steam coal are in line with figures last given. Domestic sizes advanced Sept. 1, Big Seam lump ranging $2@$2.50; Carbon Hill, $3.25; Cahaba, $4.25@$5; Black Creek, $4.50; Corona, $3.50; Montevallo-Straven, $5.25; Montevallo, $5.50 f.o.b. mines. Egg and nut sizes are about 25c. and 75c. respectively under lump schedules. Production is on a basis of 385,000 net tons per week.

Foundry coke is active at $4.50@$5 ovens, with egg and nut sizes moving at $3.75@$4 and $3.25 respectively, demand being sufficient to move present output readily.

## All Sizes of Hard Coal in Demand

Anthracite of any size is in good demand at New York. As soon as the suspension became a reality buyers appeared from every direction and most of the the coal lying about the harbor was quickly picked up.

Company coals are being carefully pro-rated among regular buyers and the independent producers are swamped with orders. The old line companies are drawing heavily on their storage places for chestnut and pea coals while some of the independents are sold out.

Stove and egg are on everybody's order and there is a heavy demand for chestnut and pea. Although independent domestic coals were quoted as high as $14 for inland buyers they were not willing to pay the price, and it was said not many sales were recorded at that figure. The same coals at tidewater were quoted at about $1 or more lower. Stock chestnut coal was quoted around $11.

The steam coals are stronger and in good demand.

Philadelphia consumers have finally awakened to the necessity of buying coal and when news of the suspension was broadcast they came with a rush, and many yards are now sold up on as much tonnage as they expect to get. The supply of stove was quickly exhausted, and buyers are taking nut instead. Pea is not in much demand, but it is bound to come into its own when the other sizes run down.

One company shipper has added 10c. a ton to prepared sizes for September and 50c. for pea, stating the latter expense is for the cost of storage. Inasmuch as the dealers have absorbed the monthly raises since spring, the general tendency now is to increase retail prices. Present retail quotations are: Egg, $15; stove, $15.50; nut, $15, and pea, $10.75.

Steam sizes in the storage yards are being picked up quite briskly and shipments to manufacturing plants are quite heavy. It will take close to six weeks or two months, however, before there will be anything like a shortage of steam coal.

The anthracite strike was accepted by Baltimore hard coal consumers in the most complacent manner. Nobody is excited and orders to the retailers are not especially heavy for this season. Some delayed shipments are still coming in, although these are diminishing. Stocks on hand probably will take care of the situation here into early October.

At Buffalo the only change since the strike began, so far as the hard-coal trade is concerned, is that coke dealers are putting up the price and anthracite retailers are practically out of coal. There is the usual cry among the local papers that the hard-coal companies are boosting prices, but the fact is that only the regular 10c. advance is generally made. One company did advance pea 50c., but it claims that it was that much below the others and is now just on a par with them.

Independent anthracite prices vary, but one concern is sending out quotations at $12 for stove, $11.50 for chestnut and $11 for egg at the mines, which is a premium of about $3.50 over schedule prices.

Lake shipments last week totaled only 32,600 tons, including 17,300 tons for Duluth and Superior, 7,800 tons for Milwaukee and 7,500 tons for Green Bay.

## Connellsville Coke Market Sees Possibilities

Almost all activity in Connellsville furnace coke in the past few weeks has been by Eastern buying, related more or less to the anthracite suspension. This has advanced the market from the July level 50c. to 75c. Spot furnace coke is quotable at $3.35@$3.65, the same as a week ago, with somewhat less Eastern buying in the past few days. Some observers are of opinion that the advance has come about a month too soon, there being as yet not enough tension to induce Eastern buyers to take hold freely. On the other hand, the fact that the production of 2,000,000 tons a week of anthracite has been stopped, while the output of coke by the merchant ovens of the Connellsville region has increased by only about 7,000 tons a week, and could hardly increase by as much as 50,000 tons altogether, in view of labor conditions, suggests that only a little buying of coke as an anthracite substitute would naturally have quite an effect on the market.

A blast furnace is understood to have bought a supply of coke for the month of September. Furnaces in general seem to be covered pretty well for fourth quarter and pig iron conditions do not suggest that any idle furnaces will have to go in.

Spot foundry coke has been gradually stiffening, and is now quotable 25c. higher, at $4@$4.50. The $3.75@$4.25 quotation had prevailed since early in May.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Aug. 22, 1925 | 1,080,107 | 201,095 |
| Previous week | 1,064,793 | 190,979 |
| Week ended Aug. 23, 1924 | 982,760 | 160,267 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Aug. 22, 1925 | 195,327 | 53,755 | ........ | ....... |
| Aug. 14, 1925 | 217,190 | 62,058 | ........ | ....... |
| Aug. 22, 1924 | 258,271 | 119,338 | 190 | ....... |

# Foreign Market And Export News

## Business Scarce in British Market Despite Lower Prices

The steam coal trade in Wales still remains in a very unsatisfactory state, and the immediate outlook is far from encouraging. As mentioned in a previous report, a large number of buyers at home and abroad laid in stocks in anticipation of a national stoppage, and these stocks are still lasting. In addition to this other foreign buyers sent their orders to America and Germany instead of to Wales.

Apart from the anthracite industry. where work is entirely suspended as a result of the strike, many steam coal pits are forced to suspend operations from time to time owing to their failure to get trucks cleared. Another difficulty from the point of view of the collieries which have all along remained open is the fact that pits which had previously been closed have now reopened as a result of the government subsidy.

The inquiries in Wales are very largely of a market-testing character. The operators have yielded gradually under buyers' pressure to reduce prices, and in the case of small coals the figure has reached an absurdly low level.

The Newcastle market is no better, and inquiries for export are almost negligible. Prices have reached their very lowest limit, even taking into account the government subsidy, but orders are still going to Germany. The North of England collieries are literally operating from hand to mouth.

Output of British collieries during the week ended Aug. 22 totaled 4,425,000 tons, according to a special cable to *Coal Age*. This compares with 4,370,000 tons produced the week before.

### Market Active and Strong At Hampton Roads

The market at Hampton Roads last week was "jumpy" with prices about $1 above the previous week as result of the anthracite strike. There was plenty of bituminous coal, however, although a good many mines in the southern West Virginia fields had not begun operating on full time as yet, pending an expected increase in demand.

Domestic coal jumped $1 a ton at retail for both anthracite and bituminous, although consumption of the former is not great in this territory, and the price jump is not expected to be much greater. A great many consumers of anthracite were laying in supplies of soft coal. The tone of the market was exceedingly strong and shippers took orders without effort.

### Industrial and House Coals Gain Slightly in French Market

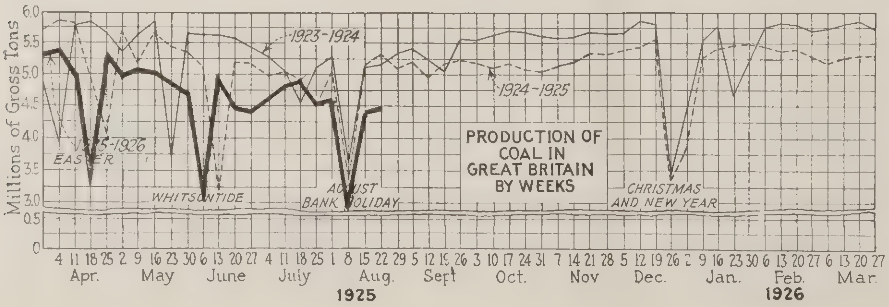
The activity which prevailed about a month ago has almost completely disappeared and the market is rather somnolent in comparison. Demand in the Nord and Pas-de-Calais, however, is being maintained and orders are fairly satisfactory. Nevertheless it is not likely that stocks are being added to at present; in fact they probably are decreasing slightly.

In household grades screened bituminous coals were perhaps a little less neglected last week than during the previous week, owing to more orders from Belgian customers. No change is discernible in the favorable situation of the market for sized coals.

Most industries show no change in their consumption and, consequently, their purchases of coal, but a few are slightly increasing them.

Empty cars are now coming in in sufficient numbers. River craft, on the contrary, are scarce and barges for coal were obtained with difficulty at 24 fr. for shipment from Béthune to Paris, the latter rate showing a rising tendency.

Following the 5 per cent wage increase granted the Sarre coal miners, the miners of the neighboring Lorraine collieries have asked for a similar advance. In a meeting with the miners' delegates held at Metz, Aug. 11, the owners declared that competition from the French northern collieries and from German imported coals would not permit them to grant any increase in wages, but that they would, however, carefully study what could be done to improve the situation and thus be able to give some satisfaction to the miners' claim.



French fuel imports in July included 1,365,575 tons of coal, 353,752 tons of coke and 89,008 tons of patent fuel, totals for the seven months ending with July being 10,089,383 tons of coal, 2,979,811 tons of coke and 681,659 tons of patent fuel. Exports in July were 300,249 tons of coal, 39,000 tons of coke and 14,103 tons of patent fuel, the seven months, total being 2,592,846 tons of coal, 215,960 tons of coke and 76,990 tons of patent fuel.

### Export Clearances, Week Ended Sept. 5, 1925

| FROM HAMPTON ROADS | |
|---|---|
| For Canal Zone: | Tons |
| Amer. Str. Achilles, for Cristobal | 12,065 |
| For Italy: | |
| Ital. Str. Mincio, for Genoa | 6,946 |
| Ital. Str. Vincenzo Florio, for Genoa | 9,888 |
| Ital. Str. Concordia, for Naples | 9,505 |
| For Brazil: | |
| Br. Str. Dalemoor, for Rio de Janeiro | 7,500 |
| For Chile: | |
| Nor. str. Romsdalshorn, for Iquique | 3,172 |
| For Canada: | |
| Dan. Str. Paris, for Montreal | 4,479 |
| Dan. Str. Virginia, for Quebec | 5,047 |
| For Nova Scotia: | |
| Amer. Schr. Jean, for Yarmouth | 1,313 |
| For Miquelon: | |
| Nor. Str. Facto, for St. Pierre | 2,236 |
| For Newfoundland: | |
| Nor. Str. Certo, for Humbermouth | 3,237 |
| Nor. Str. Evanger, for Botwoodville | 6,412 |
| For British West Indies: | |
| Dan. Str. Nordamerika, for St. Louis | 3,468 |
| For Cuba: | |
| Br. Str. Ardenhall, for Havana | 4,035 |
| Br. Str. Hollypeak, for Cienfuegos | 3,308 |
| For Virgin Islands: | |
| Br. Str. Gibraltar, for St. Thomas | 5,516 |
| FROM BALTIMORE | |
| For Italy: | |
| Ital. Str. Premuda, for Naples | 6,399 |

### Hampton Roads Pier Situation

(Gross Tons)

| N. & W. Piers, Lamberts Pt.: | Aug. 27 | Sept. 3 |
|---|---|---|
| Cars on hand | 1,618 | 1,181 |
| Tons on hand | 101,791 | 69,586 |
| Tons dumped for week | 149,926 | 147,577 |
| Tonnage waiting | 14,000 | 5,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 700 | 514 |
| Tons on hand | 55,550 | 40,550 |
| Tons dumped for week | 95,437 | 102,793 |
| Tonnage waiting | 23,550 | 10,600 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,112 | 1,969 |
| Tons on hand | 106,290 | 95,315 |
| Tons dumped for week | 122,328 | 125,871 |
| Tonnage waiting | 9,900 | 25,530 |

### Pier and Bunker Prices, Gross Tons

| PIERS | Aug. 29 | Sept. 5† |
|---|---|---|
| Pool 1, New York | $5.35@$5.60 | $5.35@$5.60 |
| Pool 9, New York | 4.85@ 5.00 | *4.80@ 5.00* |
| Pool 10, New York | 4.50@ 4.65 | **4.50@ 4.70** |
| Pool 11, New York | 4.25@ 4.50 | **4.30@ 4.55** |
| Pool 9, Philadelphia | 4.80@ 5.00 | 4.80@ 5.00 |
| Pool 10, Philadelphia | 4.50@ 4.70 | 4.50@ 4.70 |
| Pool 11, Philadelphia | 4.30@ 4.55 | 4.30@ 4.55 |
| Pool 1, Hamp. Roads | 4.50@ 4.75 | **5.40** |
| Pool 2, Hamp. Roads | 4.60@ 4.85 | **5.15** |
| Pools 5-6-7, Hamp. Rds. | 4.60 | *4.50* |
| BUNKERS | | |
| Pool 1, New York | $5.60@$5.80 | **$5.60@$5.85** |
| Pool 9, New York | 5.10@ 5.25 | *5.05@ 5.25* |
| Pool 10, New York | 4.75@ 4.90 | **4.75@ 4.95** |
| Pool 11, New York | 4.50@ 4.75 | **4.55@ 4.80** |
| Pool 9, Philadelphia | 5.00@ 5.20 | 5.00@ 5.20 |
| Pool 10, Philadelphia | 4.70@ 4.85 | 4.70@ 4.85 |
| Pool 11, Philadelphia | 4.55@ 4.75 | 4.55@ 4.75 |
| Pool 1, Hamp. Roads | 4.60@ 4.85 | **5.50** |
| Pool 2, Hamp. Roads | 4.70@ 4.95 | **5.25** |
| Pools 5-6-7, Hamp. Rds. | 4.70 | *4.50* |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Aug. 29 | Sept. 5† |
|---|---|---|
| Admiralty, large | 24s.@24s.6d. | *24s.* |
| Steam smalls | 12s.6d.@13s. | *12s.6d.* |
| Newcastle: | | |
| Best steams | 16s.3d. | *14s.9d.@15s.6d.* |
| Best gas | 24s.9d. | *17s.* |
| Best bunkers | 17s.9d. | *15s.* |

† Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

An explosion of a pocket of gas in the Dogwood Mine of the Little Gen Coal Co., in Shelby County, Aug. 27 resulted in the instant death of Will Holley and the fatal injury of Edward Clayton Roman, both white, while two negroes were badly burned from the flash.

A contract between the State of Alabama and the Bessemer Coal, Iron & Land Co. by which the former has been operating at Belle Ellen Mines with convict labor, was cancelled effective Aug. 31 and free labor will be employed in future, the mines to be operated by the owners. Under the lease agreement which has been in effect since February of this year the state not only mined the coal but also negotiated the sale of the product, paying the owners a royalty on the tonnage taken out. It is understood that state authorities have found this to be an unsatisfactory arrangement and for this reason decided to abrogate the agreement. Convicts are worked by the state at Flat Top, Banner, Aldrich and Wegra mines under a system by which the coal is mined and loaded on railroad cars at an agreed price per ton, the state not having anything to do with the sale of the product. Convict labor has been employed in whole or part at the Belle Ellen operations for many years, there being four openings.

Preparations are being made for the participation of about fifty teams from mines and industries in this district in the seventh annual field meet which will be held at Rickwood Park, Birmingham, Oct. 6, under the auspices of the Alabama Mining Institute, U. S. Bureau of Mines, Red Cross and State mining department. A program of events and prizes has been arranged and valuable trophies will be awarded the winning teams by the Alabama Mining Institute, which annually donates these prizes and plays a leading role in fostering and encouraging rescue and first-aid work in the coal-mining field. The Institute will hold its annual meet Oct. 6 for the election of three members of the governing board, which latter means officials for the next year.

## ARKANSAS

District 21 of the United Mine Workers is in the hands of a receiver, according to information received from Fort Smith. Upon complaint of the Greenwood Coal Co. and others that the district was insolvent and that the mines had suffered damage at its hands, Chancellor J. V. Bourland appointed State Senator J. V. Brewer receiver in an order commanding the district as defendant, its officers, locals, banks and coal companies to turn over to the receiver all sums in their hands held in behalf of the district.

C. L. Melton, of Alix, early in August leased the No. 6 mine of the Western Coal & Mining Co., at Denning.

## COLORADO

Herbert Addison, recently appointed receiver by the District Court for the International Fuel Co., which had large holdings in Routt County, sold the property at a foreclosure sale at Denver, Aug. 28, for $71,297 cash to Arthur Ponsford, attorney, who is acting for Pat Quealey, of Kemmerer, Wyo., and H. C. Marchant, of the Superior Coal Co., Rock Springs, Wyo. The original investment in this property was in excess of $300,000. The Routt County field is expected to be a keen competitor of other producing districts as soon as the Moffat Tunnel is completed, in 1926, which will give the Routt County operators a direct line of operations into Missouri River territory.

Judge George F. Dunklee, sitting in the second division of the district court, has authorized H. Van Mater, receiver of the National Fuel Co., to cancel lease for the mining of coal on what is known as the Reynolds-Zarlengo tract, adjacent to the Puritan mine in Weld County, due to unfavorable conditions.

The Clear Creek Development Co., in an action instituted in the District Court at Denver, Aug. 27, seeks to have set aside a foreclosure sale in which certain property of the Empire Consolidated Mines, Inc., is alleged to have been sold to Charles Cutler. Cutler, it is stated, instituted the foreclosure suit. A Denver firm intervened, claiming a superior lien on the Empire's property and the foreclosure decree was entered in its favor, according to the complaint. The plaintiff company alleges that a judgment of $21,000 it obtained against the Empire Consolidated Mines was based on a contracted indebtedness existing prior to the foreclosure suit, and declares that no part of the judgment has been paid.

## ILLINOIS

A corps of men have been engaged to put the boilers of the Keystone mine and the Consolidated Co.'s mine at Herrin in working condition. These mines, employing about 700 men, are expected to resume operations soon.

## INDIANA

Extensive additional trackage is being laid by the Big Four R.R. near Petersburg, where the road's southern coal terminal is located, to care for the increased coal business in southern Indiana. Opening of new strip mines in southern Pike County has increased the tonnage handled over the E. & I. division of the Big Four and necessitated laying of additional side tracks. The Pike County Coal Co., owners of thousands of acres of rich coal lands in western Pike County, has petitioned the Big Four to run a spur from Petersburg to Oatville, a distance of eight miles.

## KANSAS

A talk at Pittsburg, Aug. 26 by Vernon Allison, associate chemist with the safety department, U. S. Bureau of Mines, on the dangers of dust and methods of controlling it, opened a drive for safety in the southeastern Kansas field which will continue three or four months. Mr. Allison announced that a representative from the department soon will enter the Kansas field to carry on the work. Mr. Allison discussed the dangers of open lights in dusty mines and the two methods of controlling the dust: sprinkling and rock dusting. Of these, he said the Bureau had found dusting with limestone dust the most effective.

Arrangements have been completed in southeastern Kansas to send two teams to the international first-aid and mine-rescue meet at Springfield, Ill., Sept. 10, 11 and 12. The team from Western Coal & Mining Co.'s mine No. 20, which was first in the Kansas state contest, June 12, will be one, and a team from the Jackson-Walker Coal & Mining Co., which took second in the June contest, will be the other.

Permission to buy seven miles of railroad it already owned was given the Frisco R.R. Aug. 24 by the Kansas Public Service Commission. The seven miles is a coal road, known as the Pittsburg & Columbus, operating from Kramer to Weir City, Kansas. The Frisco owns all the stock and all the bonds and has been operating the line under lease for many years. The commission's decision makes it possible to make an actual transfer and incorporate the Pittsburg & Columbus road in the Frisco system.

## KENTUCKY

A gas explosion at Mine No. 3, Black Diamond Coal Mining Co., Drakesboro, on the morning of Sept. 1, following a slate fall, which released the gas, caused two men to be instantly killed, and one to be seriously burned. Four men of the seven in the entry were not injured. The mine had resumed operations within sixty days, after being down for over a year account of the western Kentucky strike.

The Imperial Elkhorn Coal Co., Sergent, is about to begin the erection of a boarding house.

The Kentucky Utilities Co. has announced its outright purchase of the big mine power plant of the W. G. Duncan Coal Co. at Greenville, for $1,000,000, including the 8,000-hp. generating plant, coal acreage to supply fuel for the plant for fifty years, two artificial lakes for boiler water, three dwelling houses for employees, 12 miles of 33,000-hp. high tension electric line, two pumping stations and switching station. The Kentucky Utilities Co. will supply the company with about 3,000 hp. when operating. The plant has been under a lease arrangement with the Kentucky Utilities Co. for some time.

Boddie and Powell, Madisonville, strip mine operators, are having test holes drilled on an 800-acre tract of strip property south of Hartford. The Maumee Collieries Co., of Terre Haute, Ind., started test drilling in the same section some time ago, but was forced to abandon the work because of lack of funds, it is said.

Further improvement of traffic handling facilities in the eastern Kentucky and West Virginia districts in which the Chesapeake & Ohio R.R. operates are promised in a statement of President W. J. Harahan, of the road, regarding contracts to be placed soon for $8,000,000 of additional equipment, principally locomotives, cabooses, two steam ditchers and two locomotive cranes.

The Elkhorn Collieries Co., Mater, is about to erect a boarding house at Kona.

Announcement has been made that the Mitchell-Willis Coal Co., of Gorman, on First Creek, in the Hazard field, will soon be in operation after a shutdown lasting nearly two years. The Reliance Coal & Coke Co., at Glomawr, which controls the Mitchell-Willis mine will operate it.

The Elkhorn Collieries Co., of Thornton Creek, with a large mine and loading tipple, is reported to be starting development of a large vein of fine cannel coal, on Colly Creek, across the mountain. Coal from the new opening will be brought across and loaded through the tripple at Thornton.

## MINNESOTA

The C. G. Hartin Coal Co. of St. Paul, whose business was sold to the Reiss Coal Co. several years ago, has been formally dissolved as a corporation.

A petition signed by seventeen prominent retail coal dealers of Minneapolis went to the City Council asking an ordinance licensing and regulating fuel dealers. It was suggested that an annual license fee of $200 be charged. This would be a move of value to the consumer and to the trade in that it would assure stability in the retail trade and reasonable assurance of reliability. The matter was referred to a committee.

Companies operating coal docks at Duluth reported a surprisingly active demand from Winnipeg for anthracite and Pocahontas coal. Buying from that quarter is being prompted by the trade up there not having recovered from recent labor troubles at Alberta mines and fears that further lake shipments of American coal for the Canadian trade may be blocked for the balance of this season. The Pittsburgh Coal Co. and the Northwestern Fuel Co. have been participating in that trade to some extent.

Aloysius E. Smith, of St. Paul, doing business as the Block Diamond Coal Co., has petitioned for a discharge from bankruptcy, after having complied with the requirements of the bankruptcy law.

A company is being formed in Minneapolis to establish a barge line to operate upon the Mississippi River to the Twin Cities. Coal would be a natural upbound cargo. Southern Illinois coal operators also are said to contemplate establishing a barge line up the river to compete for the coal business of these cities.

## MISSOURI

Prosecutions for selling short weight coal in St. Louis in the future will be brought under a state law, according to Inspector of Weights and Measures C. G. Haley and Prosecuting Attorney Albert Schweitzer. Heretofore arrests have been made under a city ordinance carrying a fine of $5 to $100. The state law provides for a jail term as the maximum punishment.

## NORTH DAKOTA

The district court at Bismarck upheld the awards of the State Board of Administration in the matter of coal supplies. The Washburn Lignite Coal Co. brought suit to prevent the state from entering into contracts with other companies for coal, holding that, its bid being the lowest, it was entitled to the business. The court held that the judgment of a court could not be substituted for the discretion of the State Board of Administration in the matter. The ruling was that even if an award were erroneously made, unless it was shown to be by collusion or fraud, it could not be interfered with.

## OHIO

A new mine is to be opened soon in the Crooksville field, according to a recent announcement. The mine is the property of the Cres-Mars Coal Co., which operates mines 3 and 7 in the Crooksville field. Ten or 15 men will be employed at first. The tipple of the mine is not quite completed as yet, but the beginning of operations is not far distant.

Calvin Holmes, of the Holmes Coal Sales Co., Cincinnati, has announced that through an arrangement with Abner Lunsford the excess output of the Banner Fork mines, at Kentenia and Tisdale, Ky., owned by Henry Ford, will be handled by his concern.

The tipple of Mine No. 5 of the Stalter-Essex Coal Co., in Pomeroy Bend, destroyed late in May, has been rebuilt and the mine is in full opera-

**Southern Coal Mine Homes Are Well Kept**

Improved streets, neat fences and garden and lawn prizes have done much to foster present-day civic pride in most industrial communities, particularly coal mine villages. This picture shows the three- and four-room types of houses erected by the Tennessee Coal, Iron & R.R. Co., at its Edgewater (Ala.) coal mine. Note the profusion of flowering and foliage plants everywhere.

tion. The tipple of Mine No. 1 of the same company, which was burned Aug. 14, has not yet been rebuilt but steps are being taken to reconstruct it.

Practically all of the larger mines in the southern Ohio field which have been equipped with screens and where lump can be produced are either in operation or will soon be opened. The Sunday Creek Coal Co. has opened all of its mines where screens have been installed and is producing about 6,000 tons daily as compared with less than half that amount produced during the summer months. The George M. Jones Co. has opened two additional mines, making four large operations in all. The mines of the Pittsburgh Coal Co. both in the Hocking Valley proper and in the Pomeroy Bend field are going, as are the mines of the Stalter-Essex Coal Co. and the mines of the Essex Coal Co. Many of the smaller mines will soon be started if conditions warrant.

**No. 11 Tipple, Stearns Coal & Lumber Co., Yamacraw, Ky.**

Receiving station of cableway and tipple, equipped with shaking screens and loading booms. The cars are handled under the tipple by car retarders.

## OKLAHOMA

The expansion shown by the mining industry in the McAlester region for this time of the year and the increasing output of the mines has led the Rock Island R.R. to put on a train out of Haileyville, local area division point. This train service reaches from McAlester to Wilburton, caring for the coal output of numerous small towns in between. Outside coal mines are served by spurs with strings of cars placed on sidings, or pulled out loaded with each daily trip.

The number of miners in the McAlester region working under the open-shop system with the 1917 wage scale is estimated at somewhat over 2,500 with 600 in the Henryetta district. It is not known as yet what per cent of the men are still at work but the number varies from normal in some of the Henryetta mines to a complete shutdown of No. 5 mine near Krebs, where the Italian miners all walked out as a result of a meeting in Krebs Monday evening. There are about 30 coal mines in the McAlester-Wilburton fields and smaller numbers at the other coal towns such as Coalgate, Lehigh, Howe, Bokoshe, and near Russellville, Ark. Only two mines in eastern Oklahoma report that they have been working with union miners under the 1924-1927 wage scale agreement.

## PENNSYLVANIA

Operations are still on the increase in the Connellsville coke region. The H. C. Frick Coke Co. has started up Leisenring No. 3 mine and fired 300 ovens at that plant, in addition to 150 more ovens at other plants already in operation. The LaBelle Iron Co. has resumed operation at its coal and coke plant on the Monongahela River above Brownsville. The Husted-Semans Coal & Coke Co. has increased operations, and the Snowdon Coke Co. has started its mine and all of the 300 ovens at its plant at Linn, near Brownsville.

Figures just compiled by the State Department of Forests and Waters show that fourteen Pennsylvania tree planters put out more than 100,000 trees each during the spring of 1925. Some of the planters requested from the state a larger number of trees than was allotted to them, but it was found necessary to limit the number to 100,000 after the tree planting season got under way, so that the smaller planters could have trees available for planting. Among the large planters were the following: Clearfield Bituminous Coal Co., Indiana, 212,970 trees; Rockhill Coal & Iron Co., Robertsdale, 100,006; Wilmore Coal Co., Philadelphia, 100,000; Berwind-White Coal Mining Co., Philadelphia, 67,900; Allegheny River Mining Co., Kittanning, 95,000; Buckeye Coal Company, Nemacolin, 67,500; Colonial Colliery Co., Natalie, 65,000; Saltsburg Coal Mining Co., Leechburg, 55,000; Kingston Coal Co., Kingston, 50,000; Potts Run Coal Co., Clearfield, 55,000.

## WEST VIRGINIA

With the mines of northern West Virginia producing 555,550 net tons of coal in the week ended Aug. 29, more coal was loaded in the 12½ counties than in any other week since September, 1923.

The Baltimore & Ohio R.R. has put all of its old employees to work and called back into the service all furloughed employees in the Fairmont district due to the increased coal loading. No new men have been put to work, however.

Rumors were afloat in northern West Virginia last week that coal operators in the New River fields were considering the advisability of raising wages $1 on the day and 10c. a ton on the loading rates to curb any movement to reunionize the New River fields.

According to information received in Fairmont, Col. Clarence W. Watson, president of the Consolidation Coal Co., and his guide, Billy Stanley, had a narrow escape from drowing recently when their 26-ft. fishing boat struck a submerged wreck four miles from the head of Wolf Island, near Cape Vincent, N. Y. Nearby ships failed to hear the distress call and Colonel Watson bailed out the boat with a two-quart dipper, while the guide pulled to Wolf Shore, where repairs were made. The propeller and a 5-in. board were pulled off the Colonel's boat, which caused the trouble.

Ground has been broken on the Hoult road, near Fairmont, for the erection of a new plant in which coal-tar products will be manufactured by the F. J. Lewis Manufacturing Co., of Chicago. The plant, it is reported, will cost in excess of $100,000. The raw materials will be obtained from the Domestic Coke Corporation, which is nearby. Creosote oil will be the chief ingredient manufactured at the plant, it is said.

Weirton Steel Co. has announced at Pittsburgh a $10,000,000 improvement program for the works at Weirton. Included in the project are 45 new by-product coke ovens to the present list and a blast furnace.

C. W. McIntire, of New York City, who is in charge of the experimental station of the Consolidation Coal Products Co., a subsidiary of the Consolidation Coal Co., announced last week that a smokeless fuel, which is a substitute for anthracite coal, has been developed at the Fairmont plant. The commercial product obtained by the pretreatment of coal can be marketed as coke and briquets. The fuel is made by means of low carbonization and the plant will start this week to produce 50 tons a day. Out of 50 tons of Fairmont coal, it is said, 30 tons of briquets are obtained. From each ton of coal, in addition to the fuel, there is obtained three gallons of tar, two gallons of light oil and gas running 1,000 B.t.u. obtained.

In the six months ending June 30 a total of 20,677,990 tons of smokeless coal was produced as compared with 17,874,035 tons during the corresponding period of 1924, an increase of 2,803,955 tons. In June alone a total of 3,704,671 net tons of smokeless was produced as compared with 2,885,222 tons in June, 1924, an increase of 819,449 tons. The gain in the Pocahontas district alone was 511,965 net tons.

**Artificial Lake Supplies Power Plant**

A rainy day at Earlington, Ky. The artificial lake in the background covers 175 acres and constitutes the only water supply of the 6,000-kw. steam plant of the St. Bernard division of the West Kentucky Coal Co. With its wooded shores this lake is a beauty spot of Hopkins County.

New River mines increased their production 120,118 tons over June, 1924; Winding Gulf mines, 105,531 tons, and Tug River mines, 81,835 tons. In June the Norfolk & Western Ry. moved 2,103,435 tons, the Chesapeake & Ohio, 1,050,025 tons, and the Virginian, 551,211 tons. The Norfolk & Western handled a total of 3,231,735 tons of coal and the Chesapeake & Ohio handled 4,740,560 tons.

In a $400,000 improvement program announced by the Consolidated Power & Light Co. in West Virginia, provision is made for the installation of coal handling machinery at Kenova.

## CANADA

F. W. Guernsey, who has just returned to Vancouver with a party organized by the Vancouver Board of Trade to make an examination of the Hat Creek coal deposit, with a view to advising the Provincial Government as to the wisdom of building a branch line from Pavilion, on the Pacific Great Eastern, to the mine, a distance of 16 miles, in order to open up the deposit, recommends that exhaustive tests be made to determine the grade of the lower seams before any action toward the construction of the branch line be entertained.

The annual financial statement of the Blue Diamond Coal Co., Ltd., shows a deficit of $88,599 for the year ending June 30, which increased the deficit account to $174,995. Total assets were $2,655,586 compared with $2,143,621 for the previous year, and current liabilities were $493,859.

Production of coke in Canada during July amounted to 89,221 tons, being the lowest tonnage recorded for any month this year and a decrease of 19 per cent from the June output of 109,604 tons.

In view of the strike of the anthracite miners in the United States efforts will be made to obtain a larger movement of Alberta coal to Eastern markets in order to better cope with the emergency. Premier Ferguson and Premier Greenfield are said to have joined in an application to officials at Montreal to further shipments, as the rate, which is a vital factor, will have to be arranged with the Canadian National or Canadian Pacific Ry.

Five hundred additional miners were given employment on Sept. 1 when collieries Nos. 1B, 2 and 4 of the British Empire Steel Corporation went on double shift for the first time since the settlement of the strike was effected. The resumption of night work means that every colliery now operated by the Dominion Coal Co. is working two shifts.

## Traffic

### Reconsignment of Hard Coal Allowed Free at Detroit

The Wabash R.R. has issued Supplement No. 1 to I.C.C. 5872, effective Aug. 2, which provides as follows: "No charge will be made for a single diversion or reconsignment of anthracite coal at Detroit, Mich., when destined to points beyond located on the Wabash or connecting lines, to which the through rate from point of origin to reconsigned destination is applicable via Detroit, Mich."

## New Companies

**The Walters Brothers Coal Co.**, Warrensville, Ohio, has been chartered with an authorized capital of 500 shares, no par value designated, to mine and deal in coal. L. E. Walters, George F. Frank, Antony J. Walters, D. M. Tubman and J. F. Potts are the incorporators.

**The Velnon Coal and Wood Co., Inc.**, of Calgary, Alberta, has been incorporated with a capital stock of $20,000 by Harold A. Jacques, Edna Allen, Lillian Thompson and others.

**The War Ridge Smokeless Coal Co.** has been organized at Clarksburg, W. Va., with a capital of $100,000. The incorporators are: George L. Duncan, John P. Keeley, E. Bryan Templeman, James J. Biblun and O. J. Billingsley.

The certificate of incorporation of the **Creek Collieries Co.** of Bolivar, Pa., has been recorded in Greensburg, Pa. The capital is $5,000 and the stockholders are J. E. Husband of Pittsburgh, P. C. Ake of Indiana and H. Irene Husband of Mt. Pleasant.

## Coming Meetings

**New York State Coal Merchants' Association.** Annual convention, Sept. 10-12, at Richfield Springs, N. Y. Executive Secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**Association of Iron and Steel Electrical Engineers.** Annual meeting at Philadelphia, Pa., Sept. 14-19. Secretary, John F. Kelly, Empire Bldg., Pittsburgh, Pa.

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries**, Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**American Welding Society.** Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering**, Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

## Industrial Notes

A deal involving the purchase of the entire physical assets and property of a railroad was announced recently by the **Hyman-Michaels Co.**, of Chicago. The Kalamazoo, Lake Shore and Chicago Ry., being unable, successfully, to compete with motor transportation now operating parallel to its right of way, recently sought and was granted permission by the Interstate Commerce Commission to discontinue service and abandon its line. The Hyman-Michaels Co. took over the entire physical assets. The work of dismantling the road and sorting of materials has already begun. The line consists largely of No. 1 80 lb. ASCE section relaying rails, suitable for use in quarries, lumber camps and mines. Every piece of equipment is being rigidly inspected.

**The Koppers Co.** of Pittsburgh, Pa., was given the contract for the construction of 77 additional byproduct coke ovens for the Inland Steel Co. at Indiana Harbor, Ind.

## Recent Patents

**Axle Counter for Mining Machines**; 1,540,019. Arthur G. Kershaw and F. J. Raymer, London, England, assignors to the Union Switch & Signal Co., Swissvale, Pa. June 2, 1925. Filed Feb. 16, 1924; serial No. 693,401.

**Miner's Cap**; 1,540,345. Frank Kowasik, Hiawatha, Utah. June 2, 1925. Filed Oct. 29, 1923; serial No. 671,367.

**Controller for Hoisting Engines**; 1,540,631. A. E. Johnson, Denver, Colo. June 2, 1925. Filed Dec. 15, 1923; serial No. 680,876.

**Hopper-Car Door**; 1,540,850. Carl M. Luth, Wilkinsburg, Pa. June 9, 1925. Filed Oct. 8, 1923; serial No. 667,258.

**Mine Cage**; 1,541,144. Wm. G. Holmes, Danville, Ill. June 9, 1925. Filed Jan. 21, 1924; serial No. 687,455.

**Coke Quenching and Loading Apparatus**; 1,541,153. Heinrich Koppers, Essen-Ruhr, Germany, assignor to the Koppers Development Corporation, Pittsburgh, Pa. June 9, 1925. Filed July 5, 1921; serial No. 482,613. Renewed Mar. 9, 1925.

**Mine-Car Loading and Haulage Means**; 1,541,361. Wm. G. Knowles, Bessemer, Ala., assignor of one-half to Arthur T. Knolwes, Bessemer, Ala. June 9, 1925. Filed March 26, 1923; serial No. 627,929.

COAL AGE

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Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. Dawson Hall
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## Keep the Issues Straight!

THE ANTHRACITE STRIKE has now entered the stage where rumor and speculation become the raw materials out of which most of the daily stories must be manufactured. The further we get away from the events preceding the suspension the easier it will be for the public to lose sight of the fundamental issues involved. In so doing, the public risks inviting a settlement that will be as injurious to its own interests as it will be to the anthracite industry. It seems wise, therefore, to dare the perils of reiteration to restate these issues with such frequency that they cannot be obscured by rumor, perversion, forgetfulness or misunderstanding.

These issues are readily understandable. They can be grasped without painful study of overwhelming statistics or the assistance of mathematical experts, budgetary specialists or trade economists. The man in the street is not even called upon to sit in judgment on the complexities of the anthracite wage structure. He is not called upon to say whether present rates of pay are adequate. But he can hardly fail to catch the significance of the action of the union in abruptly terminating negotiations before the operators could be heard upon the adequacy of those rates. The operators listened patiently for the better part of a month to the union's presentation of its demands. The union, without finishing its own case, denied the operators the right to reply. Why?

The present suspension was ordered in defiance of policies recognized and advocated by union leaders for twenty years. At the outset of the negotiations the operators asked the miners to join with them in an agreement to continue production after Sept. 1 regardless of the progress reached by that time. The union declined. The operators suggested arbitration of points upon which no agreement could be reached by the negotiators. The union declined. These offers were repeated at various times during the course of the negotiations and were as repeatedly rejected by Mr. Lewis and his associates. The record makes it convincingly clear that responsibility for the present suspension rests solely upon the United Mine Workers.

The union expresses a bitter distaste for the arbitration it once sought the high heavens to force upon reluctant producers. If the principle of arbitration was so eternally right and in the public interest in 1902, why has it become so tainted with sin in the past three years? The answer, of course, is that it has not. But, even if it were, even if Mr. Lewis were justified in his damnation of arbitration, that would be no excuse for the suspension. The operators' proposal to continue production was not conditioned upon the acceptance of their offer of arbitration.

The man in the street may not be competent to pass upon the adequacy of the wages paid the anthracite miners. That, after all, is of little direct interest to him. His direct interest is in an uninterrupted coal supply at a reasonable price. Strikes are the greatest menace to that steady flow of fuel. The man in the street, however, is competent, if he has his facts straight, to fix responsibility for any interruption to his coal supply. There is no confusion of facts to blur his judgment on that question.

## Passing the Buck

IN TIMES PAST the anthracite operators were assailed because they would not arbitrate their case with the miners. They come now asking for arbitration and only a few listen to them. These few say the mine owners are merely "passing the buck" and that they are asking the public to do what they should do themselves. Arbitration is declared wrong because the anthracite operators request it.

What would happen if operators advocated nationalization or national control of mines? We are of the opinion that it would disgust the public. The general opinion would be that the operators were "passing the buck" and that they should be men enough to handle their own affairs. Furthermore it would be said that they were hoping to make money out of the transfer on the one hand or to be assured of profits in the event of national control on the other. The public is perfectly consistent. It may have no recognized policy; it may pursue no plan of action continuously; but whatever it says or does, it shows itself to be always and everywhere against the mine operator.

## Metallurgic Economies

IN A LATER PART of this issue appears a story on thrift in the use of coal in metal mining, but really, has there not been thrift from the earliest days? Concentrators from the first sent clean ores to the smelter, for the man who sorted the ore before he smelted it saw that only the purer material found its way to the melting and slagging pot. He hunted for native metal, if he could find it, and if he couldn't he tried to get the pure sulphide, carbonate or oxide or what not. Talk about concentration! They had it in early days. Disseminated ores were not worthy of a glance.

Every time a new trick was learned in concentration leaner ore was mined and accepted, and the smelter had more to do. So the coal man found his coal in greater demand than ever. For this reason no one must take these new metallurgical developments too seriously.

When the hot blast was first used in the iron industry and hot metal from the blast furnace was taken to the steel mill, economies were made as momentous or more momentous than any today.

Powdered coal is having its triumphs, ousted, however, in places by oil, for in the copper furnace oil does not form slags as does coal whether used in larger sizes or in powdered form, particularly the latter. At Anaconda with coal on grates 2.04 tons of copper were lost in slag per 100 tons of copper obtained, with pulverized coal 2.11 tons, but with oil only 1.77 tons. So powdered coal has disadvantages even though it makes a saving of 41 per cent in the coal used as matched with coal on grates comparing the quantity and not the price. The assumption is made—and it is Bardwell and Miller who make it in a paper before the American Institute of Mining and Metallurgical Engineers—that the cost of pulverizing is offset adequately by a reduction in labor at the furnace and by the elimination of the cost of handling and disposing of ashes.

With grate firing at the Anaconda smelter 4 tons of copper are produced per ton of coal used, but when the coal was pulverized each ton produced 6.8 tons of copper. As slack was 20 per cent cheaper than lump the net result, according to the authors, was a reduction in cost of from 40 to 50 per cent per ton of copper.

The tale of economy reaches all along the line. The production of metals has recently been low and the demand for coal to smelt these metals has been even lower; but economy having once been effected we can look for a broader future because leaner and leaner ores and a widening market will make for an increased use of coal. So much has been lost to oil that when the return is made to coal the rebound will restore to the industry a stability that in recent years it has sorely lacked. Bardwell and Miller in closing their paper say that "pulverized coal is a close competitor of oil and any great increase in the price of the latter would lead to the resumption of the use of powdered coal in our furnaces."

## How Weak Is Lewis?

IF JOHN LEWIS CALLS A SOFT-COAL STRIKE it will be his flat admission that the Jacksonville wage agreement is impossible. Just now Mr. Lewis is a hard-put though still belligerent labor leader. He has seen important territory escape from union domination. He has seen business measured in huge tonnages slip over to the enemy, the non-union producers, and has had to stand and endure it even though the shift of these tonnages meant heavy and permanent losses of working time by high-wage union labor. He is cornered by economic conditions which he helped to create. He cannot offer to change the wage scale. That would mean political annihilation for him by his own rank and file. So he must effect the change by battle.

A general soft-coal strike probably is the readiest expedient at hand. In spite of the fact that a strike threat is good propaganda, Mr. Lewis is more than likely to call such a strike. He can convince many of his men that the Pittsburgh Coal Co., the Consolidation Coal Co. and other employers in Pennsylvania, Ohio and West Virginia are violating the Jacksonville agreement. He can convince them that they should strike from the State of Washington to Maryland to save their union from extinction. He can argue them into believing that even though non-union productive capacity is great enough to supply the country, the price of non-union coal during a strike would soar and transportation difficulties would arise, thus goading the consumer.

The consumer is John Lewis' target. If the public can be squeezed enough, and United Mine Workers' propaganda can be put across with its usual effect, general clamor for intervention will be loud. Then somebody will step in and relieve Mr. Lewis of his embarrassment. Enforced arbitration might cut union wages but John Lewis would not be doing the cutting.

The union stands to lose, probably, if it strikes, but it will lose eventually if it doesn't. That is Mr. Lewis' dilemma. He is desperate. Hence he may be expected to call an illogical strike. He will be violating his Jacksonville contract with the operators of Illinois and Indiana if he calls out the men in those states, but a drowning man clutches at any straw.

## Our Land of Opportunity

WATCH OUR POLITICIANS fall into rhapsodies over this land of opportunity, a country where a boy who ran barefoot to school and hardly had enough to eat could by force of character and thrift accumulate a fortune while engaged in a service of inestimable value to the public. No man, the orator declares, is barred from the right to accumulate wealth, and our individual freedom shows us the way to success. It is the American way. The road to fortune lies open to every man.

Daniel C. Jackling, mining engineer, for instance, opened up a copper mine at Bingham, Utah. Here is a man who, as president of a company which has taken $374,294,080 worth of minerals out of the ground, made $173,975,094 profits for his company and paid $131,815,787 in dividends out of a capitalization of $16,244,900. Every pound of product brought him twice what it cost him. On every sale he has averaged almost 100 per cent. The company's profits are over tenfold its investment and nearly elevenfold.

What a land of opportunity! What a marvelous man! But, one considers: What if he had been a coal operator! What a terrible tale would have been told of his exactions from the public! His achievement would have been a crime, and we would have said that he should pool his mine with the high-cost operations and should take no more than a meager profit. Metal-mine experts in the American Institute of Mining & Metallurgical Engineers would have held him up for retribution; other mining engineers on the Coal Commission would have sought to have his company controlled; no right-thinking citizen but would have scorned to put his hand against the palm of such a "coal baron."

And as for the coal miner, the public takes the view that he is not justified in seeking to get as large a wage as he pleases. This we deny, but we do say that when he seeks an undue wage by constraint of trade, Clayton Act or no Clayton Act, when he enforces his action by violence or intimidation, he must consent to have his wage set for him at reasonable levels. If he is willing to let his wage and profit come in the due course of an open market for his labor, then he is entitled to all he can get in this land of opportunity, but if he seeks it by group action, with or without violence or intimidation, he must consent to see his wage fixed by the group action of the citizens of the republic.

Any act that permits the combined action of any class of citizens as against the group interest of the whole people disrupts the commonwealth and makes a farce of government unless the group action of the public is afforded some way of making the demands of that particular class accord with reason and justice.

# Modern Concentration Mining Succeeds Where Past Methods Failed in Old Detmold Mine

## Abandoned Big Vein Coal in Georges Creek Region Is Reclaimed by Long Panels, Half Advancing and Half Retreating—Continuous Side Track Assists Haulage

**By Elkins Read**
General Superintendent, Maryland Coal Co.
Lonaconing, Md.

ALTHOUGH Old Detmold mine of the Maryland Coal Co., Lonaconing, Md., is relatively ancient—its opening dating back to 1853—the methods now employed in the recovery of much pillar coal are distinctly modern. This mine long ago was worked over and cut up into pillars which were not recovered because in the early days knowledge of mining was meager and methods primitive. No wonder, then, after a lapse of nearly three-quarters of a century, we find about 70 per cent of the coal still standing.

The mine is in a tract of what remains of the Big Vein in the Georges Creek region of Maryland. In it the old rooms and entries are caved, seemingly contesting our right to that coal which a past generation tried and failed to recover. It is easy to visualize what a large production at low cost could now be obtained, if the coal were solid again, with present-day machines, 4-ton cars and other modern equipment.

### NEW METHODS FOR OLD

THE MARKED SUPREMACY of modern methods over the old perhaps is nowhere more clearly displayed than in the Georges Creek region, where for the last 75 years the Big Vein coal seam has been mined in turn by grandfathers, fathers and sons. This contrast is the more vivid because practically one people has mined nearly all the coal taken from the region beginning in 1853. The grandfathers, recovered only about 30 per cent of the merchantable coal by driving rooms only and leaving the pillars. The fathers did better, for they recovered much of the pillar coal while mining the last tracts of Virgin Big Vein coal. The sons have been left that coal which their grandfathers abandoned and under more difficult conditions are recovering most of it by the modern methods described in this article.

But that condition having passed, we are achieving by modern methods, although under more difficult circumstances, that which our predecessors could not do. Today, coal is reclaimed by tunneling and forepoling in long panels extending along the strike of the bed from the main headings to the outcrop. Each panel is about 800 ft. wide and in length is limited only by the distance from the main headings to the outcrop.

A strip 500 ft. wide, on the higher side of each panel is mined out advancing. It is served by one intermediate haulageway and an air course within itself also by three major headings in the remaining width at the lower side of the panel, the barriers of which are recovered in the retreat.

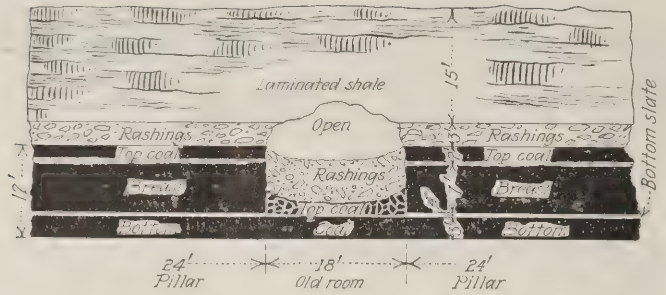
This system provides concentration and continuous working. In general the method is far ahead of what in the near past had been considered good practice and provides decided economies in haulage and ventilation. That is not to say that we have benefited as widely as we should like, for we do not have such reasonable assurance of our mine conditions as is enjoyed by companies operating in solid coal. Nevertheless, the system is working well; and by its merits should recommend itself for use generally.

The seam is 12 ft. thick, consisting of a 3-ft. bench of bottom coal separated from a 7-ft. bench of breast coal by a thin coal layer between two thin strata of slate. Above the breast coal is 8 in. of bone surmounted by a 2-ft. bed of good top coal. Over this is a bed of fire-clay shale which is soft and difficult to hold, known locally as "rashings." On top of it is a laminated shale about 15 ft. thick, which separates the Big Vein from the unimportant Redstone seam.

The Redstone seam is capped by red sandstone, 30 to 40 ft. thick. This formation and a 400-ft. cover were ever a menace to the old managements in their efforts to recover pillar coal and have since caused much destruction to the original workings. No attempt was made in the early mining to recover the 3-ft. bench of bottom coal and the top coal was left to hold the roof, so that only 7 ft. of coal was mined in rooms and entries worked in the original plan.

The Maryland Coal Co. was one of the original companies incorporated to mine coal in the Georges Creek region and still retains mineral rights to over 5,000 acres in Allegany and Garret Counties. This tract, which originally was developed by six mines, contains about 1,500 acres of Big Vein coal. The Old Detmold mine was worked until some time in the eighties. The adjoining Savage mine was opened in 1861 and abandoned also in the eighties. Another, the Kingsland mine, was opened in 1872 and abandoned just prior to 1900. Three other mines were opened and worked at later dates. These are not being re-mined now because they were operated in the years after 1890 when recovery was fairly high. There is insufficient coal left in them to warrant reclamation.

Practically all of these old mines were developed by a main heading and air course driven up the pitch. On each side, at 400-ft. intervals single butt headings were driven. Without the return of an air course the men had little air at any point far inside of the mines. Every fourth or fifth room—18 ft. wide on 42-ft.



**Bad Roof Adds to Expense**

This bed is a part of the Pittsburgh seam and like this deposit in the Pennsylvania field, has a weak roof. Over the coal in the Georges Creek region there is a soft, flaky shale, known as rashings. The coal bed is divided into three sections by bands of slate. When the mine was originally worked the bottom coal was left intact.

centers—was driven through a 100-ft. barrier pillar to the side heading above. What air did circulate was drawn by a furnace of cut stone or brick.

None of the stained coal at the outcrop was mined in those days. A belt having an average width of 200 ft. of crop coal was left around the entire property. This coal was mined between 1900 and 1910. It was then the belief of the company that all the economically recoverable coal was gone. However, along about this time J. W. Galloway, now president of the company, was made vice-president and general manager and, after going over the property, he realized the possibility of rehabilitating a dying enterprise. It was through his inspiration that reclamation mining was started in the Old Detmold and Savage mines.

During the various changes in management prior to this time the newer maps mysteriously disappeared and all that remained as guides for new operations were three old maps drawn in 1871. This made initial moves difficult.

Our first attempt at reclamation work was made at a point near the lower left-hand corner of the accompanying mine map. After tunneling through the crop workings about 250 ft. we ran into the beginning of a series of room pillars which we later discovered were located off the second left heading of the Old Detmold mine. Of course, at that time we were prospecting and knew little of the conditions so that mistakes which we made were excusable. We next made an opening in this same section at *X* and during the days of the World War these two openings were advanced to the fifth left heading of Old Detmold.

By this time enough had been learned to make us realize that in order to continue in a normal market our methods would have to be changed considerably. It was decided, therefore, to discontinue advance workings and retreat with the pillar line. In 1920 our present mine was opened by a pit mouth on the right side of Old Detmold.

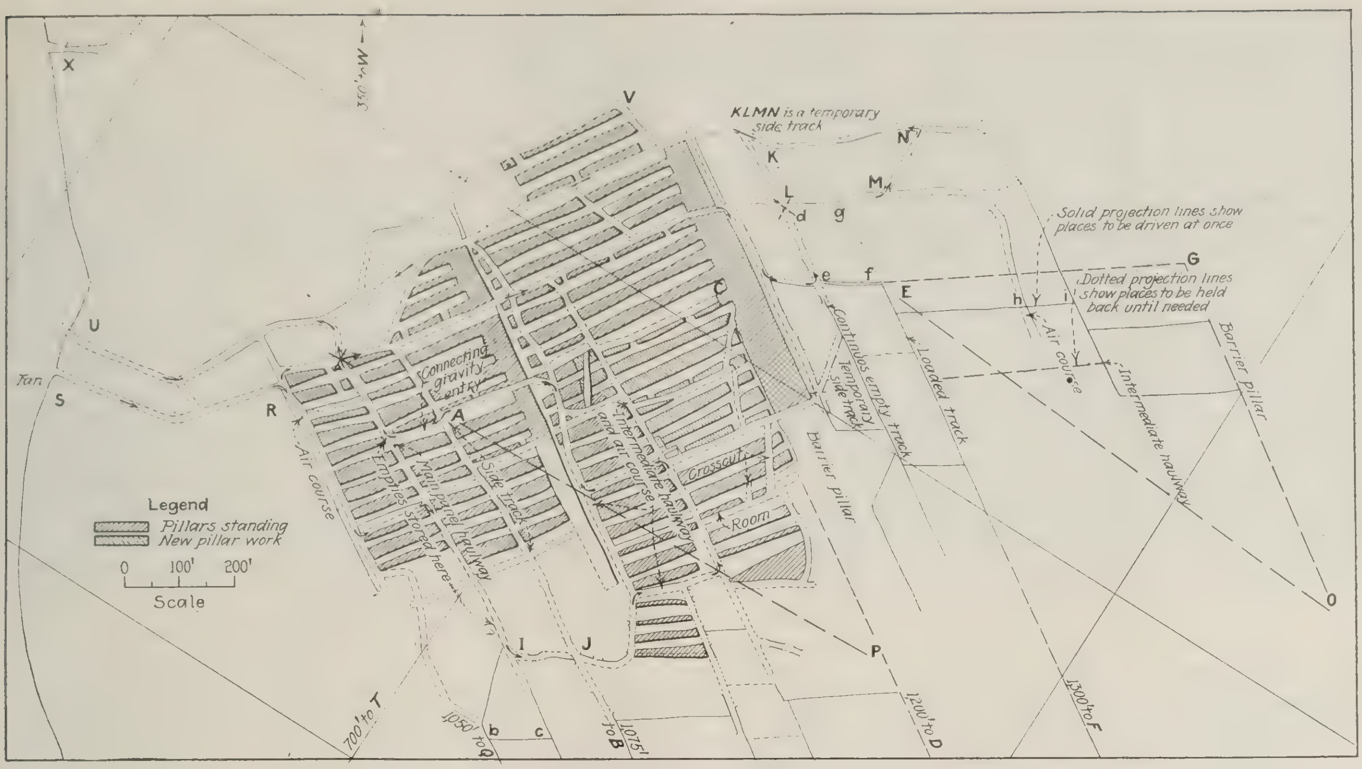
Our experience in No. 12 mine to the left of the Old Detmold main heading showed us that headings and rooms had been driven everywhere, but with the exception of a little gouging, the pillars were still standing. In all the old workings the top coal and rashings, and sometimes layers of the overlying shale, had fallen. To cross these old places various methods have been tried and finally we standardized on a method of tunneling which is described in detail later in this article.

Of necessity this tunneling is expensive and it early became apparent to us that in any successful system, tunneling must be confined to a minimum. It was decided also that the system must have as few working places as possible and that these must be concentrated and worked intensively. The reason for these requirements is that every place in the mine is held up by timber sets lagged on top and sides. Concentrated effort which is now considered an economic necessity in mining is doubly necessary in this work.

To avoid the first obstacle—excessive tunneling—our main headings and air courses are cut from the side of room pillars. These are 10 ft. wide and are kept far enough apart to avoid excessive weight. The first panel marked *RQBDPC* comprises first and second right headings of the Old Detmold mine and extends across the Savage mine to the crop line. This panel has a main air course, a haulageway and a continuous side track and room heading, all of which are driven across the old rooms and pillars paralleling the original right

**A Dead Town Revived**

Half asleep, but with one eye open, Old Detmold mine watches over Lonaconing, Md., the town which it helped to build 72 years ago. Today, with the increasing endeavor in the reclamation of Big Vein coal under these hills, prosperity is sure to be restored to this town which for many years has realized little from its buried treasure.



**Long Panels, Half Advancing and Half Retreating Prove Most Successful**

The coal between lines *CPD* and *AJB* is mined to the outcrop, advancing; barriers of the main panel haulageway, or the coal between lines *AJB* and *RQ*, is mined from the outcrop, retreating. These continuous panels are advantageous under almost any conditions because development faces are comparatively only a few feet from the live workings at all times.

headings of the Old Detmold mine. About midway between the room heading and the boundary line is an intermediate heading and an air course, the former being marked "second right" in the first panel.

The coal between *CPD* and *AJB* is being recovered on the advance, the distance between these two lines being 500 ft. The coal between *AJB* and *RQ* is to be recovered in the retreat. The same scheme is planned for all succeeding panels. When the pillar line advances to *AP* the first panel will be under full development and will continue so until this line is advanced to the outcrop. Every place in the mine is working double shift and men are switched about to meet the needs of the moment.

The mine at present is producing 450 to 550 tons in a double shift. It is probable that after the first and second panels are both under full development they together will product 800 to 1,000 tons per day, the latter being the maximum desired by the company. Main headings have been stopped and their advancement will not be resumed until a third panel is required to keep up the maximum output.

In the actual mining of a panel, 10-ft. rooms are cut from the inby side of every third room pillar, extending from the side track *AJ* to the intermediate haulageway, which is a distance of 300 ft.; and from the intermediate haulageway 200 ft. to the barrier line *CP*. Of the 200-ft. rooms, the last is driven up only a step or two in advance of the pillar line. Ordinarily the 300-ft. rooms from the main headings are not driven until required for haulage and ventilation purposes.

The pillars between these rooms are recovered by driving crosscuts on 40-ft. centers in the retreat. These crosscuts, of course, penetrate only what remains of the pillar from which the room is cut and two old rooms. Thus, every third room is entirely missed by the crosscut and by tunneling through only two old rooms two solid blocks of coal measuring 24x30 ft. are reached and recovered, together with a 14x30-ft. block in the pillar from which the room is cut.

In that part of the crosscuts included in old rooms, the top and bottom coal is recovered; but no attempt is made to recover these two benches in the old rooms between crosscuts on account of the excessive cost of dead work incidental to the handling of rock.

It would be less expensive to drive along every other pillar, but experience in No. 12 mine has proved to us that this practice cannot be followed because the support of the roof is too much weakened. We have also learned that when crosscuts are on centers wider than 40 ft. the stumps will be squeezed before they can be recovered.

Following the driving of a room to its limits by two men on each shift, the first crosscut is driven 40 ft. below the barrier line. Then a second crosscut is started at a 40-ft. interval below the first by two men. At this time an additional man is added to the first crew which has turned its attention to the recovery of the stumps above the first crosscut, making five men working in each section between two adjacent rooms.

Under full development a panel is composed of six such room sections which are worked simultaneously by five men in each. In addition, five headings are under development about half the time. These are driven only fast enough to keep them ahead of the pillar line. Thus altogether no more than 40 men will be employed per shift in the panel. The average daily output per miner, including those in tunnel places, is a little better than 6 tons. Coal is loaded on a tonnage basis and tunneling is paid for by the yard, the lump sums for each include remuneration for setting timbers.

In robbing pillar stumps only the breast and bottom coal (thickness of 10 ft.) is recovered. The 2-ft. bed of top coal is left to help support the roof. Two head-on cuts, half as wide as a room pillar, are made to recover a stump. One cut takes one-half of the stump advancing and the second cut retreating outby finishes the block. Once started, the mining of a block must be continued day and night until it is finished; otherwise the block will take excessive weight and be crushed.

Evidence of local squeezes dating back to the early days of mining is found in some parts of the mine. Not enough coal had been taken out from the old working to have caused a general squeeze. Now, since the top coal and rashings have caved and with the bottom coal left in the old places, it is practically impossible to make a clean break as the open area is not sufficiently wide. Great care must be exercised, therefore, to make as few openings as possible in the advance so as not to weaken the roof support unnecessarily. In consequence, activities are confined close to the actual pillar line.

### Predict 250,000 Tons per Year

The assumption is that the entire area of the Old Detmold mine and the Savage mine and half of the Kingsland mine can be reworked in this manner giving to the property a life of about 20 years at a mining rate of 250,000 tons per year. After the main headings of Old Detmold are driven beyond the inby boundary of No. 12 mine, panels will be laid out to the left as well as to the right of these headings. The areas marked *WXUV* and *RSQ* are reserved to maintain the output while the main headings are being drawn.

The mine mouth is located about 3,000 ft. from the tipple. Coal is gathered by mules and hauled from the side tracks to the outside by a small locomotive and thence is delivered to the tipple by a 10-ton main haulage locomotive. Although the mine operates two shifts each day, neither the locomotives nor the tipple is run more than 8 hr. The coal from the night shift is held on storage tracks in the mine. Because of the large expense of maintaining entries no runaround is provided for the small locomotive. It pushes the empties into the mine and pulls out the loads.

The sidetrack on the First Right room heading is maintained from *A* to *J*. The First Right haulageway will be extended from the main heading and maintained throughout the life of the panel. It serves as the main thoroughfare from the room sections in this panel to the main entry.

Because of the expense of widening out for switches to accommodate a gathering locomotive, none were constructed, so this motor never leaves the main haulageway of a panel except where grades will not permit running loads by gravity through one of the rooms serving as a connecting entry between the side track and the main haulageway of the panel. This practice is being followed wherever possible. Thus, loaded mine cars are gathered by mules to the side track *AJ* and are dropped by gravity through the connecting room *AT* to *T* where they are hauled away by the small locomotive which does not negotiate the switch at *T*.

When the pillar line *AP* reaches *A*, stumps will be left to maintain the side track *AJ* so long as the latter is needed in the position indicated. After the workings are advanced so far from *A* as to make the mule haulage on the side track excessively long, stumps are pulled and the side track shortened. This requires the laying of track in an advance connecting entry between the side track and the main haulageway of the panel.

By thus advancing the side track with the live working sections the inside locomotive is always kept close to the live workings and the mule haulage is limited to the distance between the heading *AJB* and the barrier line *CPD*, making a maximum haul of 700 ft. All the coal from the room workings is placed on the main side track while *abc* is a temporary side track for the development of the three major headings of the panel.

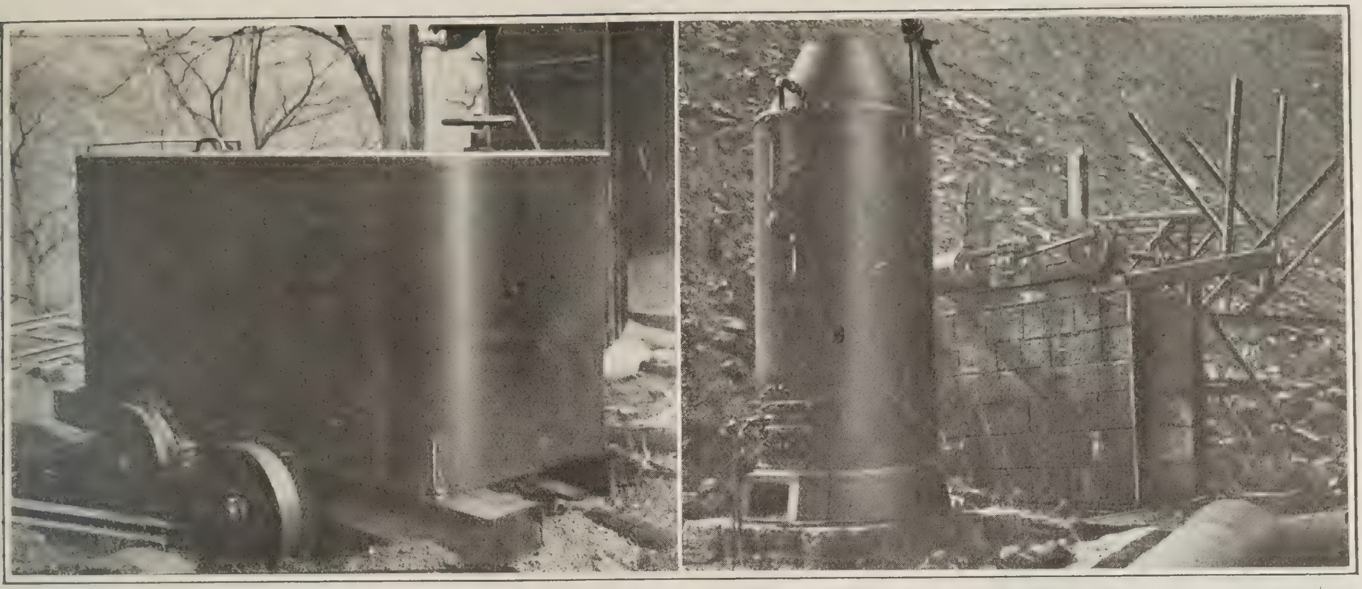
### Will Avoid Excessive Track Work

In the second panel the Fourth Right heading and its air course will be intersected by No. 1 room from the Third Right heading and the coal obtained from development work in this panel will be taken directly to the side track *defg* by one mule. A glance at the map shows that the rooms already driven from entry to entry are abreast. This practice has been discontinued. In the future, rooms between headings will be staggered as shown by the projection lines. This will be done to avoid excessive track work.

When the panel reaches capacity output, two mules on each shift will gather all the coal. The inside locomotive will handle the coal coming from two shifts and, after switching out the refuse cars, will build up

**Main Substation**

Through this plant go all the lines serving Maryland Coal Co. properties in the Georges Creek region. This company is operating the Old Detmold mine which it has reopened after many years in order to recover coal abandoned by two generations of miners.

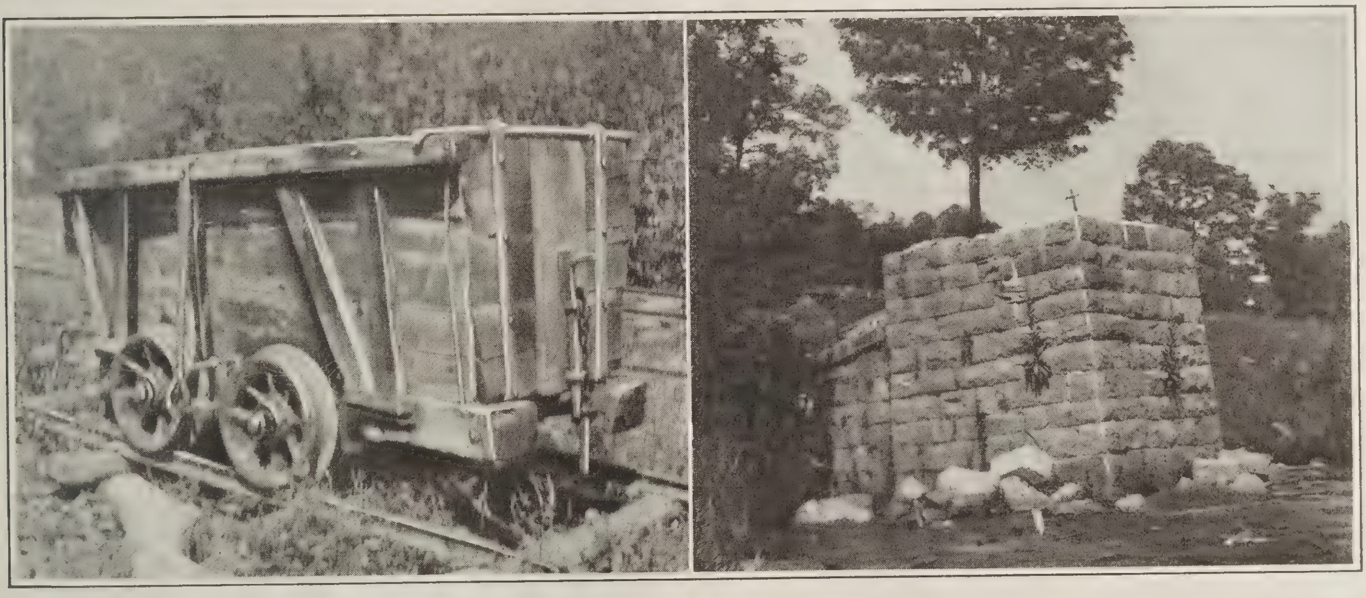


**Relics of Long-ago Mining Found in the Old Mines at Lonaconing, Md.**

At the upper left is a "bailer car" which must have been used to haul water out of the mine. The water was bucketed from sumps at various places through the workings into this car for haulage outdoors. The car probably was used a great deal because deep false flanges were worn in the wheel tires.

At the upper right is an old steam-driven fan with the blades missing from the fan frame. To be sure, an installation of this sort is not viewed by men of today as being economical. But what an improvement it was over an old ventilating furnace such as that at the lower right! The fan outfit was a plant complete in itself, with no long steam lines to waste the energy. One man for each of two shifts was required to keep this slow-motion fan running.

The old car at the lower left is a stalwart, iron-bound, end dumper more than 40 years old, which, obviously, could disgorge its load on a sloping dump track.



a trip on the main side track on the outside of the mine for the big tram locomotive. The latter, besides making a 3,000-ft. haul with all coal to the tipple, handles timbers and supplies.

### Method of Timbering

The roof in working places and live entries throughout the mine is supported by timber sets on 3-ft. centers, which are covered by flat lagging boards overhead and on each side, skin to skin, where the roof is weak or fallen as in tunneling. In driving through solid coal the lagging pieces, which are sector sections split from round timbers, are placed 1 ft. apart. The legs and cross bars are round, of 6-in. diameter or larger at the smaller end. Across the mouth of a place turned off from an entry a stringer or "king bar" is slung. This stringer supports one end of the heading cross bars and on the short-radius switches is 12 ft. long. Generally, over wide switches, it is necessary to place two stringers parallel to the heading and a third diagonally across the heading. These are 8 in. or more in diameter at the smaller end.

A system of modified forepoling and lagging is used in tunneling through falls in this mine. The forepoles are of round timbers, about 3 in. in diameter at the smaller end and 5 to 6 ft. long. These are placed 2 to 2½ ft. apart, resting on the regular timber sets which are on 3-ft. centers and covered skin to skin with lagging boards. The latter are 1 in. thick, 3 ft. long, and of varying width.

By means of iron bars, two holes 4 to 5 ft. deep are pocketed in the fallen material on one side of the tunnel and in line with the top of the timber sets. In these are placed two forepoles. The loose rock above these is carefully removed to enable placing one lagging board after another over the forepoles. After the first two forepoles are thus lagged, a third and then a fourth forepole is put in place, sometimes a fifth is required.

Although the material through which a tunnel passes is only comparatively loose, great care is exercised to

**An Old Timer**

This is W. A. McIndoe, outside superintendent at the Old Detmold mine. Mr. McIndoe has been with the Maryland Coal Co. for 52 years. He started to work when he was 12, mining with his father and has filled various positions with the company in and around the mines.

avoid starting a run. The men have been doing this work a long time and have become proficient. The forepoles and the advancing excavation above them are blocked up where necessary to hold the forepoles in place and lessen the chance of a "run."

The forepoles are lagged just far enough ahead to catch the next timber set, which is set in place after the underlying loose material is sufficiently excavated and while the front ends of the forepoles are supported by unexcavated material at that point. This completes the operation which is repeated over and over again in advancing a tunnel.

Upon leaving a pillar area and entering a fallen area the timber sets are lowered from a height of about 9 ft. to 6 ft. under the bars. In crosscutting through falls this height is further lowered to 5 ft. In the headings, the tunnels in the clear are 8 and 9 ft. wide at the top and bottom, respectively. In the crosscuts in the clear they are 7 ft. wide at the top and 8 ft. wide at the bottom. Incidentally, the timbering is not nearly so substantially done in the crosscuts as in the headings for the former are required to remain open for only a short time.

Under some conditions in this mine, timbers sometimes break immediately, and ordinarily their life never exceeds two years. Producing at the rate of 500 tons per double-shift day, this mine requires a railroad car of props for every two days.

### TEMPORARY VENTILATION SYSTEM

At present, ventilation is accomplished by a temporarily installed disk fan. One main overcast is provided at the junction of the First Right haulageway and the main intake. The air travels along the First Right air course and is conducted by temporary brattices and curtains to the working faces of the panel and back again across the overcast to the return outlet. The air circuits are indicated by arrows on the map. Another overcast will be installed to take care of the second panel. Falls are more or less open so that difficulty is experienced in controlling the air, for which reason it has not yet been determined whether to install one large fan or to use booster fans for each panel. The falls, incidentally, have some advantage in that they permit the driving of places far beyond the last new crosscut, as a certain volume of air sweeps over the falls.

The most important advantage of this system is a concentration of workings. This means low-cost haulage, better supervision, economical ventilation and less track and materials for a given tonnage as compared with that required by the usual short room-heading layout. Aside from these economies, after the panels are developed, the tonnage can be kept relatively constant from day to day by continuous operation until the property line is reached.

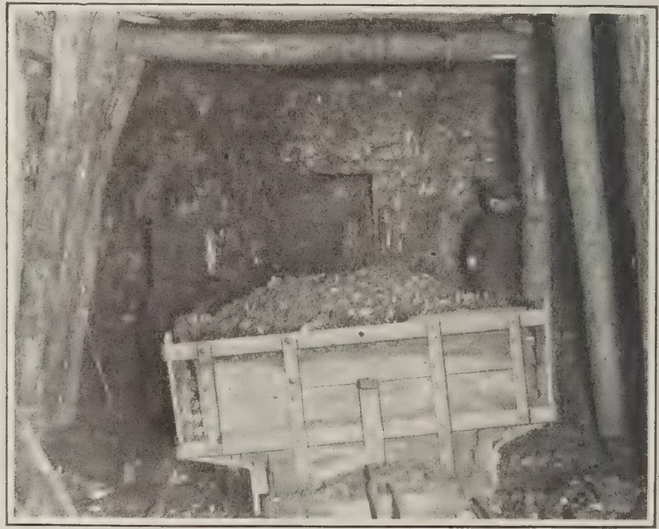
In the old panel layout with short room headings at right angles to the mains, a room heading is either under development or in the last stages of completion during a large part of the time. Thus the time during which these headings are at a high state of efficiency is relatively short.

Under the present system, once the panel is under full development it remains efficient until it is completed, which is a long time because the panel is long. And in the retreat, enough barrier coal remains to provide a complete mule-hauage section throughout its recovery.

### CAN BE MODIFIED TO SUIT CONDITIONS

This system can be modified to suit almost any conditions, even those encountered in the Middle West where no pillars are pulled. To me it seems to hold a great advantage over the methods which are now commonly used in that section. Instead of driving at right angles from the mains to a barrier line, the butt headings could be driven parallel to the mains and cut off on the rear, at the same time advancing one set of heading faces continuously until the boundary line is reached.

The system of long room headings bears the same relation to that of short room headings that a limited express train does to an accommodation train. When you get the one under way it rolls along under full steam, whereas the other has to stop at every tank station, contributing much to inefficiencies by interrupted operation.



**Mining In a Forest of Timbers**

Even in solid pillar coal in Old Detmold, places must be heavily timbered. The weight of a thick cover bearing down on the pillars for over half a century is only partly responsible for this precaution. In the early days when the Big Vein was in the virgin state the miners, even then, found the roof troublesome—so much so that they recovered little of the pillar coal. This 10-ft.-wide crosscut is blocking off a three-cornered pillar.

# Concentrator Practice in Utah Saves Coal Used Per Ton but Enlarges Total Demand

### American Institute of Mining Engineers Meeting At Salt Lake Learns of Large Progress Made at Concentrators and Savings in Coal at Smelters

**By R. Dawson Hall**
Engineering Editor, *Coal Age*
New York City

COAL-MINING MEN had an excellent opportunity to see, at the annual meeting of the American Institute of Mining & Metallurgical Engineers, held at Salt Lake City, Utah, Aug. 31-Sept. 3, how greatly new developments in smelting and concentrating are restricting the employment of fuels and may yet cause a further retrenchment in their use. But this is only per ton of product, for cheap minerals bring increase of market.

The economies practiced and foreshadowed are of many kinds, and some may be readily overlooked, for where the saving is made, there may be no fuel in use. Thus in a concentrator, the separation of ores from gangue and of metals from each other may be made so complete as to leave the smelter, which makes the semi-finished product, relatively little to do, and the concentrator, not using heat, may be electrically operated, the current being obtained from water power.

A remarkable agent, xanthate, commonly known among concentrator men as "Z," when introduced into the frothing or flotation cells in company with a frothing agent such as wood creosote or pine oil, makes possible a closer separation of the minerals being treated than can be had when xanthate is omitted. Further selective action is possible if the pyrite (iron sulphide) is rendered unfloatable by the addition of a little cyanide, the iron pyrite then, not accompanying the copper pyrite, but falling down with the gangue. The cyanide apparently does not dull the iron pyrite. It has what metallurgists term a "deadening effect," an expression that does not explain clearly the manner in which the cyanide acts.

Of course, much depends on the perfection of these methods. Should the product arrive at the smelter wholly free of iron pyrite the work of the smelter man would be greatly lightened. Only that part of the sulphur in the copper pyrite would then have to be volatilized or burned, and no iron would have to be removed. True, this is only an aim and not such an end as can be wholly attained, but in the measure in which the object sought is approached, so much the less has the smelter to do and so much the less coke, powdered coal or oil has to be used.

In smelters also fluxes must be used in quantity. These absorb an immense amount of heat and when the fluxed material is run to waste much heat is lost. With less impurity in the ore, less flux is needed, and a further saving is made in heat. So from these causes we may look for metallurgical economies similar to those effected in the power house and on the railroad. These will severely harass the operator, especially in the Rocky Mountain States where the metal industry is an important consumer of coal.

These savings, of course, reach a limit as savings have a way of doing. By selective flotation lead and zinc are already in some instances being purified from each other and from the gangue almost to that ultimate point, the lead product becoming 60 per cent pure lead instead of 30 per cent as in the past and being rid of zinc, that *bête noir* of the lead smelter man.

Sixty per cent sounds a low per centage of concentration to the average coal man, but it must be remembered that lead and zinc are in chemical combination each with another element, sulphur, and cannot be freed of that impurity in a concentrator, the action of which is merely physical. Only the smelter or leaching plant can break up chemical compounds.

Interesting but perhaps less menacing to the present opportunities of the Rocky Mountain coal producer is the leaching method of the Ohio Copper Co., of Bingham Canyon, Utah. The system of operation of this company, fortunately perhaps for the coal industry, cannot be applied generally or perhaps frequently. This company does not even mine its ore but just drives a tunnel through it and then extends branches from the tunnel and pours water on the surface of the ground above these subterranean operations.

## FLOWING WATER CONVEYS ORE

This water dissolves the water-soluble portions of the ore. Thus partially saturated the water flows into the tunnel bearing its precious mineral burden and is brought by the tunnel, with minimum impurity, to the launders where it is treated with iron scrap. The copper content in the end product is 89.39 per cent.

As may be readily understood, not all the copper in the ground is water-soluble. Of the meager 6 lb. of copper in every ton (the Ohio Copper Co.'s deposit is probably of a lower grade than any other being worked elsewhere) possibly 2.7 lb. may be leached out after many years of alternate oxidation and leaching, but the result is that the Ohio Copper Co. produces the cheapest copper in the United States and when the product is received at the smelter but little needs to be done to it as compared with what must be done with the product from other plants; so again less fuel is needed.

Other recent savings in the use of fuel for metallurgical purposes are the use of hot metal without unnecessary cooling and delay wherever that metal has to be retreated. This waste of heat has been avoided, for many years, at iron plants where steel is manufactured, and the copper plants are now taking heed to the ways of the iron-and-steel industry.

Coal loses its fight in other ways. The smelters are often a long way from the concentrators and the ore has to be hauled from the latter to the former. The concentrators need an area for tailings and an opportunity for the use of gravity in passing the rock from process to process, and the smelter needs to be where farm lands will not be destroyed or homes rendered uninhabitable by sulphurous gases. The separation of these two classes of structures causes coal to be used for transportation and there is a distinct saving in railroad fuel when the concentration of the mineral is carried further at the concentrator than has hitherto been the practice.

When the Institute party returned from a trip to the Magna concentrator of the Utah Copper Co. the visitors saw by the side of the road the badly wrecked steam-power plant of that company. For some time the Utah Copper Co. has been purchasing its power from the Utah Light & Power Co., which obtains its electrical current from water sources.

Here is another instance where coal has found a powerful competitor. In passing it may be said that the action of the Utah Copper Co. has been followed by the Carbon County coal producers.

No one knows, of course, what the final effect of the savings in the metallurgical use of fuels will be. Economies are necessary if the mines of the United States are to compete with those of far richer foreign districts such as the Katanga copper district in South Africa and the Chile Copper Co. district in South America. These savings may preserve an industry which if removed would use no fuel from the United States at all, certainly not Utah or Rocky Mountain coal and possibly not any from the United States. Katanga is well taken care of by South African coal deposits.

Just how far flotation may be used to lighten the labors of the smelter man and deprive the coal man of market is not clear. So many "gangues" can be floated, at least in a small measure, that it would be bold to say how far the principle may or may not be extended. Thus, 45 per cent of a certain quartz can be caused to float with the use of suitable agents, but other material with which it may happen to be mixed may be equally willing to float. In consequence no separation by these means may be possible.

Without avowing anything, it might be added, what a boon it would be to the iron industry if the quartz could be separated from iron oxides by flotation and the large quantities of "paint rock" and other siliceous ores made available. The coal industry of the East would lose in the coal used for the transportation and smelting of siliceous material, though it might gain in the increase of ore treated.

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# Institute Hears Argument Over Utah Mine Safety Code

A HEATED ARGUMENT over the Utah mine safety code and the reading of two coal mining papers comprised all there was of further interest to coal men in the sessions of the Institute at the Salt Lake City meeting. No trips were arranged to coal mines and no great number of coal men attended. Those interested in coal had had their opportunity at the Rocky Mountain Coal Mining Institute meeting in Price, Utah, the preceding week.

However, enough coal men were present at Salt Lake City to make a lively discussion when it was charged that the Utah operators had framed the state mining code while they were in a condition of hysteria following the Castlegate disaster of March 18, 1924. The man who made that charge was an engineer privately employed to make a study of Utah conditions last year after a carbide company had protested to state officials that the new rule against carbide lamps was unneccessarily rigid.

At the A. I. M. M. E. first session in Salt Lake City, Aug. 31, J. C. Dick, chairman of the Utah section and Governor George H. Dern, of the State of Utah, welcomed the visitors. The governor himself is a mining engineer. The papers all related to the mineral industry. At 12 noon the members visited the Mormon Tabernacle in the temple grounds and heard the world-famous organ and in the afternoon drove to Saltair, where many bathed in the salty waters of the great lake. In the evening two technical sessions were held in the Hotel Utah in one of which A. C. Watts delivered his interesting and important paper on "Electric Shotfiring Experiments in Coal Mines," printed in *Coal Age*, Sept. 3, and Daniel Harrington, an illuminating address on "Safety Methods in Utah Coal Mines." At the other session, C. T. Keighy addressed the members on the "New Byproduct Coke Plant of the Columbia Steel Co."

At the conclusion of Mr. Harrington's paper there occurred the hot discussion of which E. K. Judd was storm center. Mr. Judd declared that the state of Utah had an unusually dangerous condition because the coal was highly explosive and the air was abnormally dry (He said the maximum and minimum saturation percentages at 6 p.m. in Salt Lake City for 36 years, computed by months varied from 27 to 76 per cent and that the percentages are still less in Carbon County). The coal also is extremely thick making the detection and removal of methane from points near the roof quite difficult. However, he believed that the record was misleading. Utah did not have such an undue fatality rate in coal mining. It was true that the disasters at Winter Quarters and Castlegate were distressing in the extreme and seemed to justify the most drastic measures but between the dates of these two catastrophies were twenty-three years without a single disaster.

In those years there were 304 fatalities, 193 being due to falls, 72 to cars or locomotives, 10 to explosives, 8 to machinery, 6 to electricity and only 5 to gas or dust. As the production of Utah is thirteenth on the list, any large accident like that at Castlegate has percentage results out of proportion to those which such a disaster would cause in West Virginia, Illinois or Pennsylvania. In a state of "hysteria," said Mr. Judd, "the operators of Utah had consented to drastic regulations which they would not have considered at all if the pressure of public opinion and the explosion at Castlegate had not overpowered their judgment."

The disasters at Rains, Utah, and at Frontier and Sublet in Wyoming had all three taken place in mines worked by electric lamps. Mr. Judd believed that Daniel Harrington, former district engineer for the U. S. Bureau of Mines, had done wisely in recommending that men be sent in after the shots have been fired to see whether brattices need repairing and to repair them where they have been displaced. It appeared to him that this would relieve the firebosses giving them more time for their inspection for gas.

Mr. Judd said that the disaster at Winter Quarters was the result of an explosion of a magazine in the mine. Some men were killed by the direct force of the explosion; some by after damp. Some dust entered into and aggravated the force of the explosion. He questioned Mr. Harrington's statement that two-thirds of the mines were gaseous, his record showing that nine were gaseous, five were doubtful and 15 were not gaseous. He had noted that judging from reports made by foremen in the last month more air was being used in non-gaseous than in gaseous mines. In the former the quantity might be 1,000 cu.ft., whereas in the gaseous mines the air supplied ran from 300 to 500 cu.ft. per minute.

Otto Herres, vice-president, U. S. Fuel Co., took much exception to Mr. Judd's remarks, especially as regards "hysteria" in the adoption of Utah's concordat. He said that most of these so-called drastic regulations were being enforced by many of the coal companies before the rules regarding them were formulated by the Commission and that they were placed in operation with the consent of the operators. In fact the operators in adjoining states had somewhat generally adopted the rules for the regulation of their own mines. As for Mr. Judd's statement regarding the inability of firebosses in some mines to provide for the removal and ascertain the presence of gas, Mr. Herres said that this shortcoming would be removed in a short while.

Benedict Shubart indignantly denied there had been anything approaching hysteria. He pointed out that the Rocky Mountain Coal Mining Institute formulated a code before the concordat was signed and that its provisions, made without pressure and of its own cool judgment, paralleled those of the code. A. C. Watts and Mr. Harrington also rose in indignant protest. Harrington declared that gaseous mines were not using less air than non-gaseous mines.

In the other meetings coal men were forgotten except perhaps when, on the evening of Tuesday, E. S. Bardisell and Roy S. Miller, of the Anaconda Copper Mining Co., Great Falls, Mont., read a paper on "The Use of Pulverized Coal in Copper-Refining Furnaces."

On Tuesday everyone went to the Magna concentrator and the Bingham mine of the Utah Copper Co., visiting on their return the Garfield smelter of the American Smelting & Refining Co.

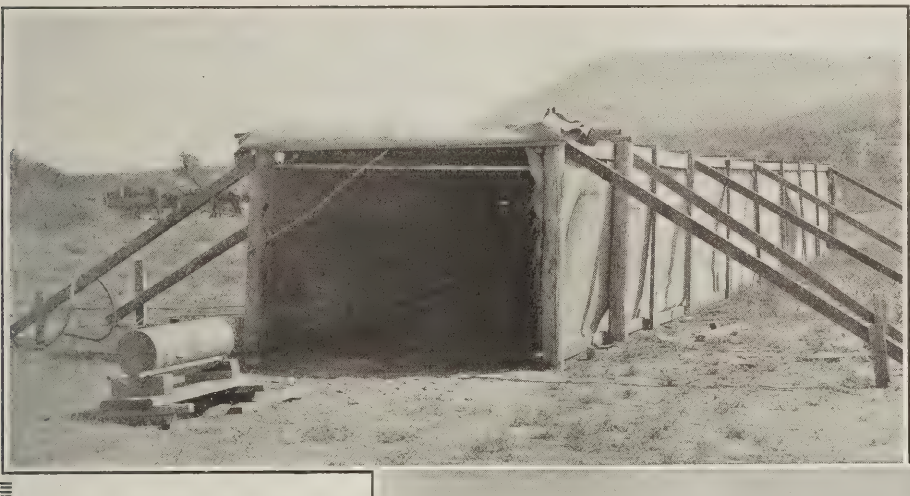
On Wednesday some went to the Murray and Midvale Smelters and others traveled nearly 50 miles in automobiles to Tronton, near Provo, where the Columbia Steel Co. is making iron from a large deposit it located in the southern part of the state using coal from Rains, and from Columbia, Utah.

Thursday some of the visitors were entertained at Park City. Others were welcomed at Tintic. Others again visited Tooele and the International smelter. That evening the visitors gathered at the Hotel Utah to see the moving pictures of the operation of ball and rod mills as modified by the presence of water and ore and by the introduction of lifters.

On Saturday after a day of rest many of the members took trains for trips in Yellowstone Park and in Zion National Park, respectively.

At Wednesday's banquet the speakers were J. V. W. Reynders, Governor Dern and Senator Charles S. Thomas. W. Mont Ferry was toastmaster. A dance in the roof garden of the Hotel Utah followed.

## *Stunts Like This Help Impress Southwestern Miners on the Dangers of Coal Dust*



This test was made at Dawson, N. M., June 7. A gallery, as shown at the left, was constructed of timber and burlap. Inside, cross-boards bearing loads of coal dust were suspended on hinges and nails. A wire to trip the boards connected them to a cannon, mounted outside the end of the gallery.

Upon firing, the recoil of the cannon jerked the wire and thus dumped the dust into suspension to meet the flash of the black-powder charge. A tremendous burst of flame and smoke resulted, as shown in the illustration on the right. Needless to say, it reduced the gallery to nothing.

# Anthracite Miners' Pay Is High For Time They Work

### U. S. Department of Labor Finds Contract Men Could Earn $8,000 a Year if They Labored Long but Averaged Only 6 Hr. 18 Minutes at Face

In the popular mind much misconception exists concerning the working conditions, hours of labor and wages received by those who actually dig the country's coal. It has long been a mental habit, indulged in by most individuals composing that vast impersonal body known as "The Public," to pity the poor downtrodden coal miner and commiserate his miserable condition, which, according to public fancy, borders upon, if it does not even constitute, industrial slavery of the most abject type. Repeated investigations by disinterested and impartial bodies have failed to dispel this false conception. One of the latest documents to set forth the true status of the mine worker is a report on "Hours and Earnings in Anthracite Mining, 1922 and 1924," printed in the July issue of the *Monthly Labor Review*, issued by the Bureau of Labor Statistics, Department of Labor, Washington, D. C. This is of unusually timely interest because of the present arbitrary stand taken by the miners' union in the anthracite region in its uncompromising demands for higher wages.

The report in question is somewhat exhaustive and voluminous, filling approximately 20 pages and containing many valuable tables. It covers a study of 56 collieries employing 44,500 wage earners during a full half month or pay period, either the last half of October or the first half of November, 1924. The figures applying to the year 1922 were taken from Bulletin No. 316 of the Bureau of Labor Statistics. Because of the length of this report only its salient features can be cited here.

### Contract Miners Work Irregularly

Most anthracite, as well as soft coal, is produced on piece work. Contract miners and contract miner's laborers constitute by far the largest class of anthracite mine workers. Of the 44,500 employees covered by this 1924 study, 11,778 were contract miners. Throughout the region day or "company" workers have fairly definite and well established hours of labor. They begin their day at 7 a.m., work either 4½ or 5 hr., take ½ hr. for lunch and quit work at 3:30 p.m. Contract or piece workers are *supposed* to follow the same routine but as a matter of fact their hours of labor depend much upon their own personal whims and inclinations. Many of them enter the mine as early as 6 o'clock and leave about noon. Others go into the mine anywhere between 6 and 7 a.m., take as much time as they choose for lunch (they usually regale themselves during odd times such as while waiting for cars), and leave the colliery anytime between 12 noon and 3:30 p.m. Few, if any, ever remain at the face after this latter hour. Indisposition, sickness, the lure of the wily trout or some other good and sufficient cause is liable to keep them from their work at least a few whole days during each month.

During the half month of 1924 covered by this report, contract miners worked 10.8 days, spent 6 hr. 18 minutes at the face each day on the average and earned an average of $9.07 per day. The average half month's pay of these men was $98.07 which would indicate a probable yearly earning capacity of $2,353.68. Over 77 per cent of these contract miners earned more than $1 per hour for all time spent at the face including the lunch hour.

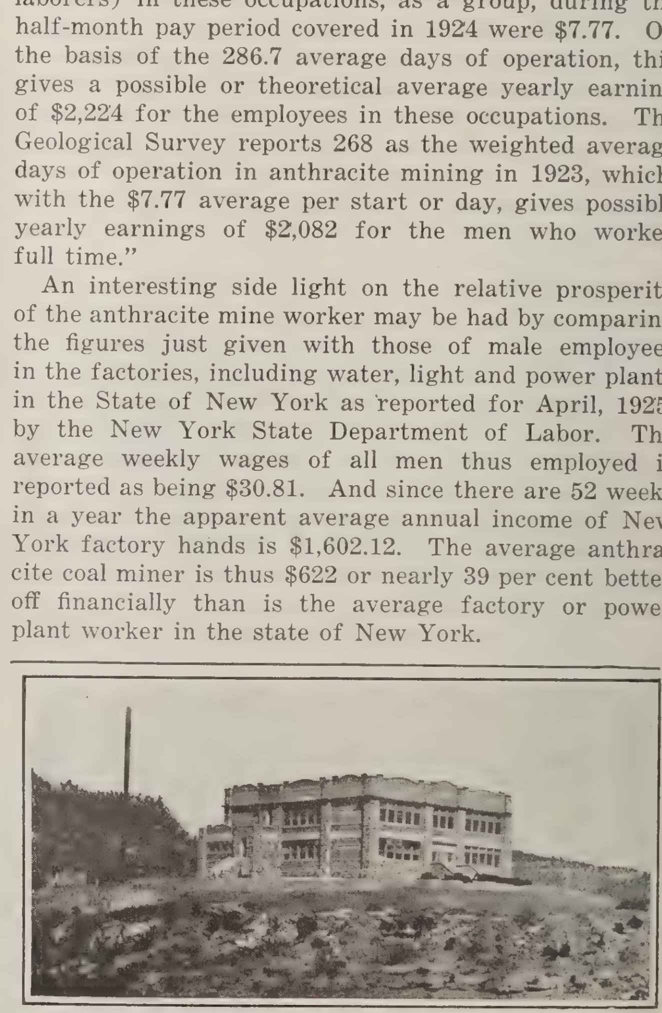
During the half month covered, 211 of these contract miners averaged over $3 per hour for all time spent at the face including that taken for lunch. This would indicate possible earnings in a full day in the mines somewhat exceeding $28. The weighted average time worked by the anthracite mines during 1924, as shown by this report was 286.7 days. If these 211 men had chosen to work at the rate that they held during the investigation, a full day every day of the year that the collieries operated their earnings would have been $8,027.60 each—and in only ten states of the Union do the salaries of the governors amount to $8,000 per year or more.

Figures covering the earnings of contract miner's laborers are scarcely less interesting. During the semimonthly period in question these men to the number of 6,794 averaged $6.47 per day and $65.39 for the half month. This would indicate annual earnings of $1,569.36.

### Average Yearly Earning of $2,224

To quote from the report: "The average earnings per start of the 23,715 employees (miners and miners' laborers) in these occupations, as a group, during the half-month pay period covered in 1924 were $7.77. On the basis of the 286.7 average days of operation, this gives a possible or theoretical average yearly earning of $2,224 for the employees in these occupations. The Geological Survey reports 268 as the weighted average days of operation in anthracite mining in 1923, which, with the $7.77 average per start or day, gives possible yearly earnings of $2,082 for the men who worked full time."

An interesting side light on the relative prosperity of the anthracite mine worker may be had by comparing the figures just given with those of male employees in the factories, including water, light and power plants in the State of New York as reported for April, 1925, by the New York State Department of Labor. The average weekly wages of all men thus employed is reported as being $30.81. And since there are 52 weeks in a year the apparent average annual income of New York factory hands is $1,602.12. The average anthracite coal miner is thus $622 or nearly 39 per cent better off financially than is the average factory or power plant worker in the state of New York.



**A Public School Building in New Mexico**

This modern stone structure is located in Dawson, N. M., where the Stag Canon group of mines is operated by the Phelps Dodge Corporation.

# Slope Conveyor Requires Less Power than Shaft Hoist

### Youngstown Sheet & Tube Co. Mine Shows Consumption of 0.31 Kw.-hr. per Ton at Shaft and 0.23 Kw.-hr. at Slope Under Identical Conditions

**By J. H. Edwards**
Associate Editor of *Coal Age*,
Huntington, W. Va.

WHEN the seam of coal to be mined lies 200 ft. or less below the surface, the use of a slope conveyor will likely prove a better proposition than a hoist. Although the item of power required per ton of coal hoisted or conveyed, is but a minor factor in the selection of equipment for a given case, it is well for the electrical man to have a general idea of what can be expected.

An excellent opportunity for obtaining a comparison of power requirements of the two methods was that afforded at the Dehue, W. Va., operation of the Youngstown Sheet & Tube Co. Here the coal lies approximately 90 ft. below the surface and for several years was mined from two openings located not over three quarters of a mile apart. One of these openings, a shaft (Fig. 1), is equipped with a modern hoist driven by a 250-hp. wound-rotor induction motor. The other opening, a slope of approximately 28 deg. (Fig. 2), is equipped with a 48-in. apron conveyor driven by a 75-hp. induction motor, also of the wound-rotor type. Each opening is served by a modern steel tipple and the rated capacity of the equipments is approximately the same, namely, about 2,000 tons per day.

The 250-hp. and 75-hp. motors are each equipped with watt-hour meters for recording the energy consumed.

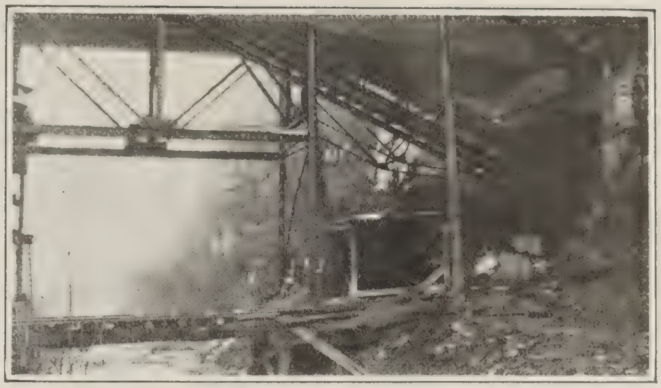


**Fig. 2—The Slope Conveyor at Dehue**

Here the average for twenty months was 0.23 kw.-hr. per ton of coal handled. A 75-hp. motor drives a 48-in. apron conveyor which enters the mine at an angle of about 28 deg. The vertical depth is about the same as that at the shaft. The conveyor has the added advantage of imposing a much lower demand on the power system.

During twenty months of continuous operation with tonnages ranging from 10,000 to 25,000 per month from each opening, the average power requirements were as follows:

| | |
|---|---|
| 250-hp. motor; kw.-hr. per ton of coal hoisted | 0.31 |
| 75-hp. motor; kw.-hr. per ton of coal conveyed | 0.23 |

In addition to the lower energy consumption per ton of coal, the conveyor has two distinct advantages over the hoist. The peak power demand is less than a third as great, and no operating engineer is required. Judging from the present trend of installations, a belt conveyor would show a still greater advantage over the hoist. This trend has received a great deal of careful thought from many mining men.

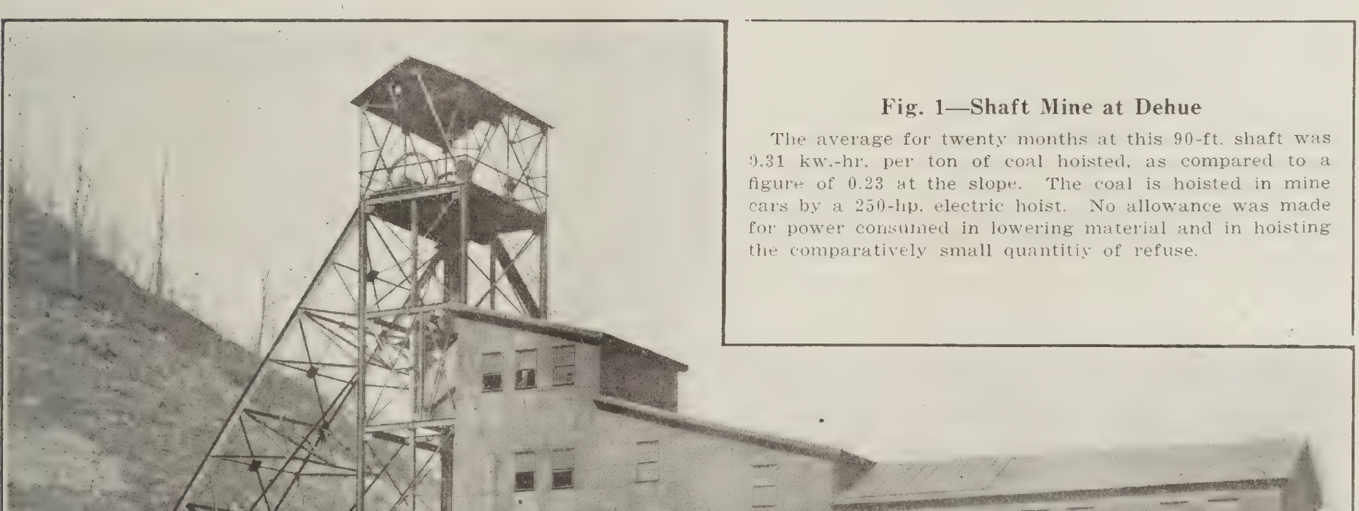


**Fig. 1—Shaft Mine at Dehue**

The average for twenty months at this 90-ft. shaft was 0.31 kw.-hr. per ton of coal hoisted, as compared to a figure of 0.23 at the slope. The coal is hoisted in mine cars by a 250-hp. electric hoist. No allowance was made for power consumed in lowering material and in hoisting the comparatively small quantitiy of refuse.

# News Of the Industry

## Pinchot Calls in Lewis and Inglis But Says It Is "Not Intervention"; Starts New Protest on Lake Rates

Governor Pinchot of Pennsylvania has taken the center of the stage in the anthracite situation. At the same time he has pledged the backing of the state to bituminous operators in the western and central districts in a rate fight against non-union competition in the lake and seaboard markets.

The Governor, whose intervention in 1923 added millions to the householders' annual fuel bill, stepped into the anthracite picture on Sept. 11 with the announcement that he had invited Major W. W. Inglis, representing the operators, and John L. Lewis, president of the United Mine Workers, to meet him on different days at his country home in Milford, Pa., to go over the situation created by the hard-coal strike. The invitations, he insisted, did not constitute an overture to intervention because he respected "the right of the President of the United States to say the first word" on that subject.

Major Inglis talked with the Governor on Sept. 12. On the following day the Governor held a conference with James B. Neale, one of the leading independent producers. On Sept. 14 Mr. Lewis was his guest. In accordance with advance announcements, no statements were issued by any of the conferees as to the course the discussions had taken or the decisions, if any, reached.

The Governor's interest in the rate situation was made known in a telegram to the Pittsburgh Chamber of Commerce published Monday morning. In that message Governor Pinchot stated that he had been deeply impressed by the serious condition of the soft-coal industry in the central and western parts of the state. "No small part of the damage," he asserted, "arises from unfair freight differentials against Pennsylvania coals." Rates to the Great Lakes and to the seaboard and interior New York and New England points, he declared, unduly favor competitors in West Virginia and Kentucky. He stated that it was his intention to proceed with an investigation into the seaboard situation "to the end that the readjustment of those rates may be taken up actively with all the backing the state government may be able to supply."

He specifically requested that the chamber take steps to ask the Interstate Commerce Commission to reopen the Lake Cargo cases, recently decided adversely to the contentions of Pennsylvania and northern Ohio, and intimated that if the cases were reopened the State of Pennsylvania would intervene in support of the plaintiffs. George R. Wallace, president of the chamber, announced that action on the Governor's request would be taken within the next few days.

### L. & N. Is Buying Heavily

Bids for passenger and freight cars, the cost of which will be approximately $3,600,000, have been asked for by the Louisville & Nashville R.R., it was announced at the office of the president Sept. 11. These inquiries are in addition to bids requested for thirty-two locomotives, costing about $1,600,000, announced recently. This is one of the largest inquiries made by railroads this year. The L. & N. is reported to have placed an order for 70,000 tons of steel rails to cost about $3,000,000.

## Retailers Back Operators In Stand for Arbitration Of Anthracite Troubles

Coal retailers of the country are lining up behind the anthracite operators in the fight to compel the United Mine Workers to accept arbitration. Concrete evidence of this stand was given at the 15th annual convention of the New York State Coal Merchants' Association at Richfield Springs, Sept. 10-12. Following an address by Walter Gordon Merritt, general counsel for the Anthracite Operators' Conference, explaining the issues of the strike, Roderick Stephens (New York) moved that the state association distribute copies of the speech to the public through its members. R. J. Wulff (Brooklyn) immediately pledged his company to take 10,000 copies. W. A. Clark, president, New England Retail Coal Dealers' Association, announced that his organization must be counted in on the plan. S. B. Crowell, president, National Retail Coal Merchants' Association, promised the support of his group in a national distribution.

The closing session of the convention went on record urging press and public to support "the anthracite operators' position that the miners shall return to work and that all grievances and demands shall be referred to a suitably chosen board of arbitration whose decisions shall be accepted by both parties to the dispute." Another resolution called upon whoever should be named to settle the strike to recognize the importance of lower prices and to work for the removal of "every unfair restriction upon output and every other restriction that prevents the attainment of a minimum production cost." A third resolution exhorted every retailer to look upon the present emergency as an opportunity for service, to adopt such policies as will best conserve supplies and promote equitable distribution and to avoid "price increases, except to the extent that such increases are necessary to equalize unusual expenses."

Mr. Merritt's address pointed out that the United Mine Workers, an outstanding advocate of arbitration in 1902, now held the doubtful "honor of being the banner bearer of industrial combat against peaceful arbitrament." Such a position he denounced as antisocial. The operators, he explained, have from time to time during the past three and one-half years offered arbitration; the suggestion that a fact-finding commission inquire into the industry; a long-term agreement, with provisions for readjustments of wages during the life of the contract; a continuance of operations pending negotiations, intervention, or arbitration, as the case may be."

Harry L. Gandy, executive secretary, National Coal Association, brought the meeting the comforting assurance that the bituminous mines of the country would be able to take care of any deficiencies in production caused by the anthracite strike. The two danger areas, the Northeast and the Northwest, were unusually well supplied with fuel at this time, said Mr. Gandy.

Mr. Stephens, in an address on "Self-Government in Business," opposed the Borah bill now being backed by the Brooklyn Chamber of Commerce and stated that the retailers hoped to have an early conference with the Brooklyn organization. Mr. Clark urged that the retailers insist upon fair distribution of anthracite and also stressed the need for a general industrial housecleaning. Eliot Farley, president, Delaware, Lackawanna & Western Coal Co., spoke briefly on genuine co-operation and complained that the industry had never sold its product to the public.

The retiring officers were re-elected. They are: Charles B. Staats, president; James M. Gaffers, treasurer; Frank A. Eldredge, recording secretary. George W. F. Woodside is executive secretary.

# Illinois Team Wins Chief Honors At International First-Aid Meet; 1,500 from U. S. and Mexico Attend

Highest honors in the annual International First-Aid and Mine-Rescue Meet at Springfield, Ill., last week were won by the Belleville (Ill.) team of the Southern Coal, Coke & Mining Co., led by Capt. D. L. Stuart. This team topped the other 65 contending teams from nineteen states and Mexico with a combined first aid and rescue score of 92.4, thus winning the congressional bronze medallion and the National Safety Council silver cup. The meet ran for three days beginning Sept. 10 and was attended by nearly 1,500 men from the mines of the continent.

The other principal winning teams and their scores were:

First-aid—Won by American Rolling Mill Co. team from Zanesville, Ohio, 99.04, Capt. Curt Magler (a congressional medal and first-aid trophies); second, Ferguson Coal Co. team, from Clinton, Ind., 98.90, Capt. Timothy Golden; third, Anaconda Copper Mining Co. team, from Great Falls, Mont., 98.76, Capt. Leon J. Deranleau.

Mine rescue—Second, Superior Coal Co. team from Gillespie, Ill., 87, Capt. James Struthers; third, Union Pacific Coal Co. team from Cumberland, Wyo., 86.5, Capt. Lyman Fearn.

William B. Wilson, former U. S. Secretary of Labor, and A. L. Assig, of Agujita, Coahuila, Mexico, who represents his country as an official of the Companie de Combustibles, the largest coal company in Mexico, were present. Mr. Wilson represented John L. Lewis, president of the United Mine Workers. Dr. Ralph Kaysen, of Milwaukee, a director of the Red Cross, officially represented the national organization.

### Bureau of Mines Men Attend

Bureau of Mines men who attended the meeting were: Dr. T. T. Read, Washington; F. C. Gregory, Duluth; E. H. Denny, Denver; Dr. A. R. Sayres, Washington; B. O. Pickard, Berkeley, Cal.; A. U. Miller and C. A. Herbert, Vincennes, Ind.; W. J. Feeney, Pittsburgh. Mine inspectors of fifteen states, representing the Governors of those states, also attended.

The first-aid tests were completed Friday afternoon. Fifty-five teams working in two relays participated. A corps of Sangamon County physicians acted as judges.

Rescue of a dummy from the gallery built for the meet was the most spectacular of the features on Saturday. The teams entered the gallery fully equipped for rescue work. Encountering imitation cave-ins, hanging roofs and "poison gas," each team located the "body" and carried it to safety. Judges watched each move, scoring the contestants on every phase of the rescue.

In an address to members of the teams and delegates, Mr. Wilson said: "The men in these teams are not only contesting with each other in these contests; they are demonstrating first-aid tactics in such fashion that anyone of the lay public watching the work will be able to apply in some measure in case of an accident the lessons he learns here."

Mr. Wilson led about four hundred of the fifteen hundred men attending the meet in a demonstration of tribute to Abraham Lincoln Friday morning when they made a pilgrimage to Lincoln's tomb at Oak Ridge cemetery. At the conclusion of Mr. Wilson's address a wreath was placed on the sarcophagus in the name of the fifteen hundred men assembled at the meet.

The banquet Saturday night was held in the Knights of Columbus club house. The winners of the trophies were announced and the awards given to the winning teams. No information as to the high scorers was given out before the banquet, the officials in charge thereby insuring the attendance of all the teams.

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## Troops May Be Called Out In Oklahoma

With the exception of picketing at the Rock Island Mine No. 12, near Hartshorne, Okla., by from 300 to 400 union miners and sympathizers each morning, the situation in the McAlester coal fields is reported as quiet. Governor Martin E. Trapp, of Oklahoma, is investigating the rumors of intimidation of non-union men by union miners on strike to decide on the application made Sept. 8 by Sheriff Will Anderson for state troops to enforce martial law in the city of Hartshorne and Dow township. McAlester and other city chambers of commerce and business men generally are urging the use of troops.

The sheriff's action came as the result of the dynamiting of the fan house on the Rock Island Mine No. 12 at about 8:30 p.m., Sunday. The explosion came on the eve of the Labor Day celebration of union miners at Krebs, four miles east of McAlester. A hard downpour of rain shortly after noon on Monday drove many of the spectators to shelter and about 1,000 persons listened to Arch Helms, president of the Missouri union miners, accuse the operators of violating their wage scale agreements. Joseph Paggani, of Indianapolis, spoke in Italian and urged peaceful methods in efforts to win the strike, or "lockout," as union officials call it. Union meetings are held almost nightly in the region.

Miners are still at work at several of the mines in the district, of which the most important is the Rock Island Mine No. 12. For the last several mornings the non-union men on going to work have had to pass through about 200 or more union picketers and sympathizers, who so far have been reported as peaceful.

These picketers pretend to be sincere in their prayers for the men going to work and for the guards, paid by the operators to watch over their property. Out of this picketing and the prayers, however, have come rumors of intimidations, when union miners have formed committees to visit the men still working and try to get them to join the lockout.

## Railroads Protest Cut In Rate on Soft Coal To New England States

Formal protest was filed Sept. 9 by the railroads against the order issued last month by the Interstate Commerce Commission to prepare a new schedule reducing rates on West Virginia low volatile coal for movement to the Atlantic seaboard and New England States. The roads were ordered to establish the lower rates by Oct. 15.

The commission intended to make it possible to move into Eastern territory at low rates types of bituminous coal used in more or less degree as substitutes for anthracite.

The Pennsylvania, Baltimore & Ohio, New Haven, Boston & Maine and Reading railroads joined in protesting the order on the ground that the decreases would reduce revenues. They declared also there was no reason for making reductions to any point south of New England, and that under the order they would be required in many cases to charge a lesser rate for a long haul than they now charge for a short haul.

Another point raised by the roads was that the rates to Baltimore from West Virginia, under the order, would be $3.45 per ton, whereas the figure should be $3.70. The objections were set forth in a brief to the commission.

The Pittsburgh Coal Producers Association and the Pittsburgh Chamber of Commerce have joined in protesting the order of the Commerce Commission. While the Pittsburgh association is not directly interested in the case, the protest, which was in the form of a telegram to the commission, is based on the belief that the new rates will cut off shipments of bituminous coal from this district to Eastern points.

Immediately after the commission's order was issued, operators in the central Pennsylvania field set to work to get a reduction on rates from that field to the East. The producers have conferred with railroad officials during the past two weeks on this question, the traffic manager of the Hillman companies being represented at these meetings.

The railroads assert that the new rates will reduce their revenues.

The Central Pennsylvania Coal Producers' Association filed a protest with the commission Sept. 14 and asked that the rates be made effective only as an emergency provision in case of possible fuel shortage in the Middle Atlantic and New England States.

At the end of the fiscal year the Bureau of Mines had 830 employees of whom 307 held technical positions. The technical staff was distributed as follows: Washington, 44; Pittsburgh, 99; field, 164. The technical staff in Washington was constituted as follows: Engineers, 19; chemists, 12; miscellaneous, 13. In Pittsburgh the engineers numbered 43, the chemists 35 and those with miscellaneous specialties 21. The division in the field force was: engineers, 83; chemists, 27, and miscellaneous, 54. These figures do not include the technical men connected with the Bureau in a consulting capacity.

## Pittsburgh Coal Co. To Open Second Mine At 1917 Wage Scale

The Pittsburgh Coal Co., according to information from an authoritative source, will reopen another mine in the Pittsburgh (Pa.) district soon, possibly within a week, on the 1917 scale. This will make the second mine of the company to be operated on the lower wage rate, and it was declared that sufficient former employees of the company have expressed a willingness to work in the new mine to start it up practically full at once.

Opening is being delayed due to the non-arrival of some supplies and negotiations for full protection by the authorities.

A report which gained circulation in the East late last week said the company planned to reopen the Warden mine, near McKeesport, but this is not true. The new mine to be opened will be located in the same district as Banning No. 2, Whitsett Junction, which has now been running for several weeks on the 1917 scale.

On the last full day of last week the company had 222 men working in Banning No. 2 and produced 679 tons of coal, which was the highest output of any day so far.

The company was host last week to a party of newspaper men on a trip to the mine, where it was conclusively demonstrated that the reports of the number of men at work, which the officials of the United Mine Workers are consistently denying, are true. The party remained overnight and thus had the opportunity of seeing the force at work twice.

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Production of coal in Alaska declined in 1924 to 99,663 tons valued at $559,980. Output in 1923 had totaled 119,826 tons worth $755,469. All other mining operations in the territory showed declines in 1924 except in the case of gold, which rose from 289,539 fine ounces in 1923 to 304,072 fine ounces. The total value of Alaskan mining products in 1924 was $17,457,333 as compared with the 1923 total of $20,330,643.

*Keystone View Co.*

**Sir Herbert Louis Samuel**

Chosen to head British Coal Commission which is to investigate the industry thoroughly, following the recent strike which had to be settled by government subsidy. As the subsidy is daily costing England much money, the new commission has been invested with power to make a thorough inquiry and consider all proposals for the reconstruction of the industry, which include nationalization.

## B., R. & P. Lease Ratified by D. & H. Stockholders

Stockholders of the Delaware & Hudson Co. at a special meeting Sept. 8 approved the recommendation of the board of managers for the leasing of the Buffalo, Rochester & Pittsburgh Ry. for 999 years. The managers approved the lease on June 24 and the directors of the B., R. & P. approved it May 1. In the balloting by Delaware & Hudson stockholders 77.4 per cent of the stock was represented. There were no objectors.

The lease provides for payment by the Delaware & Hudson Co. of an annual rental sufficient to pay 6 per cent dividends on the $6,000,000 outstanding preferred and $10,500,000 outstanding common stock of the Buffalo, Rochester & Pittsburgh. In a letter to the stockholders, President Loree expressed the conviction that the "terms of the lease are advantageous."

## Death Rate in Coke Making Lowest in History

Accidents to persons engaged in the manufacture of coke in the United States in 1924 resulted in 24 deaths and 1,645 injuries, according to statistics compiled by W. W. Adams, of the Bureau of Mines, Department of Commerce. The figures show a lower death rate and a lower injury rate for the coke industry than in any other year on record. Reports from operating companies show that 20,451 men were employed in the industry in 1924, and that they performed a volume of work equivalent to 6,204,448 man-shifts, an average of 303 workdays per man. The death rate was 1.16 per thousand men employed (full-time or 300-day workers), and the injury rate was 79.54. Injuries considered in this calculation are those causing disability beyond the remainder of the day or shift on which the accident occurred.

As compared with 1923, the number of employees in the coke industry in 1924 represented a decrease of 14 per cent; the number of man-shifts, a reduction of 19 per cent; the average workdays per man, a decline of 6 per cent. The number of deaths was 21 less than in 1923 while the non-fatal injuries were 948 fewer in number than in the previous year. Both the beehive and byproduct branches of the coking industry shared in the lowering of the accident rates in 1924. The beehive death rate per thousand 300-day workers was 0.75 and the byproduct rate 1.26.

Pennsylvania employed 6,819 men at coke ovens during 1924, which is more than were employed in any other state; Ohio was second, with 2,099 men. Other states employing more than 1,000 men each were: Indiana, 1,901; Alabama 1,527; Illinois 1,248, and Michigan 1,109.

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C. P. White, Chief of the Coal Division of the Department of Commerce, who sat with Secretary Hoover's Advisory Committee on the reorganization of the Bureau of Mines, at Salt Lake City, Utah, will inspect the field stations of the Bureau of Mines at Berkeley, Calif.; Seattle, Wash.; Minneapolis, Minn.; Columbus, Ohio, and Pittsburgh, Pa.

## Bituminous Coal Loaded Into Vessels at Lake Erie Ports During Season to End of August

(In Net Tons)

| Ports | Railroads | 1925 Cargo | 1925 Fuel | 1925 Total | 1924 Cargo | 1924 Fuel | 1924 Total | 1923 Cargo | 1923 Fuel | 1923 Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Toledo | Hocking Valley | 5,213,981 | 150,063 | 5,364,044 | 4,056,708 | 119,464 | 4,176,172 | 2,992,191 | 90,429 | 3,082,620 |
| | Big Four | 967,622 | 5,787 | 973,409 | 1,375 | 46 | 1,421 | ........ | ........ | ........ |
| | N. Y. C.-Ohio Central Lines | 596,616 | 44,782 | 641,398 | 38,159 | 1,412 | 39,571 | 1,008,393 | 31,639 | 1,040,032 |
| | Baltimore & Ohio | 2,016,591 | 61,807 | 2,078,398 | 1,110,205 | 34,710 | 1,144,915 | 1,799,619 | 53,101 | 1,852,720 |
| Sandusky | Pennsylvania | 3,390,500 | 101,427 | 3,491,927 | 2,051,571 | 63,376 | 2,114,947 | 1,903,616 | 58,689 | 1,962,305 |
| Huron | Wheeling & Lake Erie | 435,947 | 19,976 | 455,923 | 463,986 | 23,395 | 487,381 | 929,100 | 34,780 | 963,880 |
| Lorain | Baltimore & Ohio | ‡612,703 | 85,722 | 698,425 | 1,116,887 | 88,422 | 1,205,309 | 2,055,327 | 116,176 | 2,171,503 |
| Cleveland | Pennsylvania | 197,721 | 107,295 | 305,016 | 941,049 | 109,060 | 1,050,109 | 1,155,136 | 120,378 | 1,275,514 |
| | Erie | 18,138 | 1,252 | 19,390 | 205,809 | 7,454 | 213,263 | 542,678 | 24,061 | 566,739 |
| Fairport | Baltimore & Ohio | 409,545 | 60,166 | 469,711 | 332,410 | 58,593 | 391,003 | 489,935 | 43,940 | 533,875 |
| Ashtabula | New York Central | 233,408 | 58,425 | 291,833 | 615,871 | 71,283 | 687,154 | 2,256,891 | 158,990 | 2,415,881 |
| | Pennsylvania | 452,075 | 54,966 | 507,041 | 700,496 | 51,796 | 752,292 | 1,333,344 | 58,592 | 1,391,936 |
| Conneaut | Bessemer & Lake Erie | 751,034 | 143,991 | 894,825 | 1,034,305 | 137,462 | 1,171,767 | 1,781,915 | 139,319 | 1,921,234 |
| Erie | Pennsylvania | 143,291 | 35,747 | 179,038 | 374,051 | 50,843 | 424,894 | 395,920 | 53,604 | 449,524 |
| Total | | 15,439,172 | 931,206 | 16,370,378 | 13,042,882 | 817,316 | 13,860,198 | 18,644,065 | 983,698 | 19,627,763 |
| Storage Loading | | †33,017 | 1,048 | 34,065 | *182,060 | 4,940 | 187,000 | | | |

* Coal loaded into vessels in December, 1923, after close of navigation and forwarded from Lake Erie ports during 1924.
† Coal loaded into vessels in December, 1924, after close of navigation and forwarded from Lake Erie ports during 1925.
‡ Includes 42,005 tons cargo; 2,798 tons fuel dumped at Huron account fire at Lorain, June 12, 1925. Also includes 3,631 tons fuel dumped over ore docks at Lorain.
Compiled by Ore & Coal Exchange, Cleveland, Ohio; H. M. Griggs, manager.

# Bittner Calls Out Non-Union Men In West Virginia Strike Region; More Attempts at Tipple Burning

Fairmont, W. Va., Sept. 15. — A strike call to the non-union coal miners of the Fairmont field, effective Friday, Sept. 25, was issued today by Van A. Bittner, chief international representative of the United Mine Workers in charge of northern West Virginia.

The strike is to go into effect the day before the arrival of John L. Lewis, international president; Philip Murray, international vice-president, and Thomas Kennedy, international secretary and treasurer, who will participate in one of the largest gatherings of union coal miners held here recently, union officials assert. In addition to a parade, for which the miners obtained a permit yesterday, Mr. Lewis and the other international officials will address a large assemblage of coal miners at the old fair grounds, in Maple Avenue, on the outskirts of Fairmont, in the afternoon of Sept. 26.

This will be Mr. Lewis' first visit to the region since Feb. 4, when he conferred with the coal operators of northern West Virginia, signatories to the Baltimore agreement, who wanted a wage adjustment in the scale commencing April 1. The international president refused to consider this request.

A circular letter to officers and members of local unions issued by Bittner Sept. 11 announces another membership drive in the strike zone. The letter reads as follows:

"As a part of our campaign of organization in northern West Virginia, it is absolutely necessary that non-union production be completely eliminated. It is impossible at this time to disclose all the plans and policies of the United Mine Workers of America in their fight for American standards in northern West Virginia.

"Local unions are instructed to immediately proceed to accept membership of the present non-union miners and initiate these men for the sum of $1. You will be told in the very near future just when the charter of our organization will again be closed and applicants not allowed to be initiated in this field.

"Call special meetings of your local unions, select your organization committees and clear the deck for action."

### Alleged Tipple Burners Caught

After state deputy fire marshals were at work on the case for some time, Harry Craig, 32 years; Glenn Pife, 26 years, and Joseph Secreta, 19 years, were arrested Sept. 11, in Harrison County, charged with burning down the tipple at mine No. 55 of the Consolidation Coal Co., at Meadowbrook, on Aug. 29, causing a loss of $40,000.

An unsuccessful effort was made to burn the tipple of the Eureka mine of the Bertha Consumers Coal Co. at Maidsville, near Morgantown, early Friday morning, Sept. 11. The fire, which is reported to have started by igniting gasoline-soaked rags, was discovered by a Monongahela Ry. crew connected with the Maidsville yards. "Big Bertha," as it is dubbed by the miners, produces 50 cars of coal a day and is regarded as the largest single tipple mine in the Morgantown section.

Information was received in Fairmont late last week that the West Virginia Supreme Court had refused to act immediately upon the writ of error granted to Van A. Bittner, chief international representative of the United Mine Workers, who was sentenced to six months in jail and fined $500 for contempt of court. The case will come up in the next regular term and probably will not be reached before Jan. 1, if then. Former Judge Emmet M. Showalter, general counsel of the Continental Coal Co., the complaining concern, tried to get the court to pass on the writ forthwith.

### Shooting Affrays Reported

A. J. Phillips, a mine guard employed by the Jamison Coal & Coke Co. at No. 8 mine, near Farmington, was shot in the face from ambush early last week, but escaped serious injury. Bullets shot from a gun with a silencer, were found in the mine fan, company officials report. A mine guard employed by the New England Fuel & Transportation Co. shot and killed C. H. Harris, who conducts a pressing establishment at Grant Town, last week, when he attempted to stab a non-union miner with a butcher knife. All of the parties are negroes.

In the first four days of last week the non-union mines produced 5,063 cars of coal, a decrease of 784 cars compared to the corresponding period of the previous week. The output, considering the fact that only 200 cars of coal were loaded Monday, is considered remarkable. Union tonnage in the first four days—really three work days—was 825 cars, compared to 1,067 cars the previous week. On the average 183 non-union mines were at work during that time and 13 union mines. Non-union production on the Monogah Division, B. & O., on Sept. 10 set a new record at 915 cars, and mines on the Wyatt-Bingamon & Helen's Run of the Western Maryland set a new pace at 68 cars.

Little new has developed in the Panhandle strike, except that on Sept. 11 announcement was made by the Richland Coal Co., of Wheeling, that within the next two weeks it will reopen four mines in the Panhandle section closed since early in June, when receivers were appointed. A. E. Bryant and the Dollar Savings & Trust Co. are the receivers, and Mr. Bryant is authority for the statement that the mines will resume operation on a non-union basis.

The activity of the Ku Klux Klan in the labor struggle in northern West Virginia was bitterly attacked by James L. Studdard and other international representatives of the United Mine Workers at Labor Day meetings in the strike zone. When the Klan arranged a big demonstration in Fairmont on Labor Day the labor representatives charged that the organization sought to usurp a day dedicated to labor. The imperial wizard failed to arrive, however, and the affair was not of the magnitude promised.

International organizers seem to think that there is a close alliance between the Klan and non-union coal operators. On several occasions while miners' mass meetings were being held, international men say, bombs were exploded on nearby hillsides to disturb the gatherings, only to be followed later by "fiery crosses.'

Employees of the Sitnek Coal Mining Co. at Lumberport a non-union operation, held an outing Labor Day and obtained a minister to deliver an address, instead of labor agitators.

### *Temple Iron Co. Dissolves*

Final action to dissolve the Temple Iron Co. was taken at a special meeting of stockholders of the company at Reading, Pa., Sept. 2. The company has been inactive since 1914, when it was obliged to dispose of its anthracite mine holdings on the order of the U. S. Supreme Court, which ruled that it constituted a monopoly. The Temple Iron Co. for years was known as the hard coal trust and one of its presidents, the late George F. Baer, was the bitter foe of union labor.

Distribution has already been made of most of its assets. In the last few years the company has functioned in name only, maintaining its charter rights by annual meetings and election of officers. The last president of the company was E. T. Stotesbury, of Philadelphia.

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## M. F. Burns Left $3,475,570

Michael F. Burns, who was the head of Burns Brothers, New York coal merchants, until his death on April 28, 1924, left an estate appraised at $3,475,570 gross and $3,062,114 net. The appraisal showed that he owned only 30 shares of preferred stock of Burns Brothers, valued at $4,850, and 800 shares of common stock in the Burns Holding Co., appraised at $102,110. The bulk of his estate consisted of securities valued at $2,102,996.

Mr. Burns owned real estate valued at $262,949; had mortgages and accounts valued at $536,476, and $102,946 in cash. His personal effects were worth only $5,092. He had an interest of $250,000 as a special partner in the cotton commission firm of Curran & Barry, 320 Broadway. Another taxable item was a contract with Burns Brothers, by which he was to receive $50.000 yearly from 1925 to 1928.

The will left the estate in equal shares to the daughters, Belle Schwarzmann, Elsie Cavanagh and Lillian Barry, and the son, Francis L. Burns, who got $767,528 each. The report also showed that in May, 1922, Mr. Burns gave $29,918 in cash and 200 shares of stock in the American Telephone & Telegraph Co. to each of his children, the total gift aggregating $217,194.

## Oddie Bill May Be Buffer Against Radical Action On Coal by Congress

**By Paul Wooton**

Washington Correspondent of *Coal Age*

Inquiry of members of Congress now in Washington and at the offices of others still absent from the Capital fails to disclose anyone with a definite purpose to push coal legislation. That there will be committee consideration of various coal bills is conceded generally. Some are of the opinion that some measures will reach the floor, but doubt is expressed as to the ability of Congress to agree on anything in the way of regulatory legislation.

Whether or not Senator Oddie calls up his bill providing for compulsory returns of basic facts will depend on the amount of demand from within and from without Congress. It never has been his idea to foist the bill on Congress. He has assembled some of the recommendations of various authorities on coal and has put these ideas in legislative form. He rather is of the opinion that some of those who have had harsh things to say about his bill will be anxious to see it brought forward before the Congress is very old, so as to offset radical proposals.

### Coal Commission Report Delayed

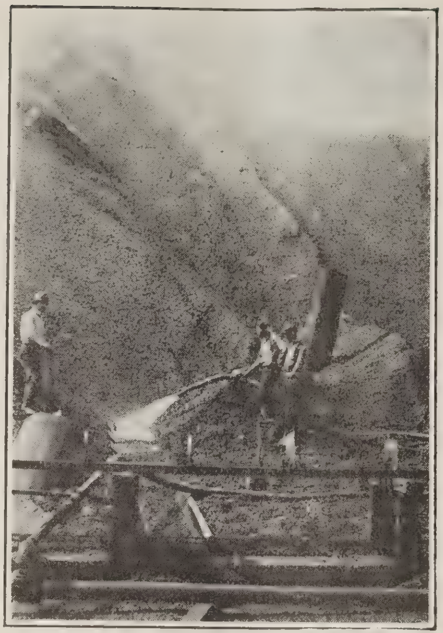
Some members of Congress are displaying no little impatience because the report of the Coal Commission is not yet available. Interest is evinced in that phase of the report which deals with a differential profits tax. It is recognized by the legislators who think the anthracite industry should be regulated that one of the great difficulties they face is to devise a method whereby a part of the profits of the low-cost producers may be applied in such a way as to make possible a reduction in the price of coal or, in the case of those anxious to help the United Mine Workers, to apply on an increased wage. The Coal Commission's plan contemplates the return of excess profits to the whole public.

In Great Britain a somewhat similar proposal took the form of the suggested wages pool. The low-cost mines would contribute to the fund from which the high-cost mines would draw. This plan has been resisted vigorously by the British industry, but it persisted throughout the discussion in the United Kingdom this summer and now a related idea has cropped up here in connection with the transportation situation.

Former Commissioner Potter of the Interstate Commerce Commission and one of the receivers of the Chicago, Milwaukee & St. Paul R.R., has suggested that freight rates be advanced and that all the profit from that increase go to the weaker railroads. His reasoning is that the stronger roads after having had a reasonable return should contribute their excess earnings to the betterment of transportation generally. He points out that a whole tier of states in the Northwest is dependent upon the C., M. & St. P. and that such a common carrier must be maintained.

This proposal has aroused unusual interest in Washington as it is recognized as simply a restatement of the principle involved in the recapture clause of the Transportation Act, the constitutionality of which already has been upheld by the Supreme Court of the United States. Furthermore, it presents the same principle involved in the Pullman surcharge, which was so decisively upheld at the last session of Congress. While Mr. Potter's suggestion amounts to a tax on the public, it is pointed out that the public, in one way or another, has to pay to keep the weak roads going and by this method they can do it without paying larger profits to the strong roads. It is agreed that the last has not been heard of the Potter proposal.

The application of some such principle to coal is expected to occur to some of the national legislators. Moreover, any number of them were in the British Isles during the heat of the coal discussion there and are familiar with the wages pool idea. That bills attempting to apply a modification of the idea to the situation here will be introduced is fully expected.



P. & A. Photos.

**Storage Pile That Will Help to Weather Hard Coal Strike**

Reserve stock at mine near Scranton, Pa., pictured on eve of the strike. The coal is being flushed through a trough into a scraper conveyor to be taken to the loading point or to the colliery to be washed and sized.

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The Virginian Ry. will receive bids until Sept. 23 for its estimated requirements of high volatile mine-run locomotive fuel coal for the year beginning Oct. 1, 1925. Approximately 600,000 tons will be required, delivered at the rate of about 50,000 tons per month. Bids must be submitted to D. C. King, purchasing agent, Terminal Building, Norfolk, Va.

## Brotherhood Sells Its Rail Line to C. & O. Ry.

With the approval Sept. 8 by the Interstate Commerce Commission of the purchase of the line of the Coal River & Eastern Ry. by the Chesapeake & Ohio Ry. that purchase, which has been pending for several months, has been completed. The Coal River & Eastern was a subsidiary of the Coal River Collieries Co., owned by the Brotherhood of Locomotive Engineers, and is 12 miles long, having been built from Seth to Prenter for the purpose of reaching the Coal River branch of the C. & O.

In order to obtain a division of rates, the Coal River & Eastern in 1924 petitioned for authority to operate its line as a common carrier, a petition which was opposed by the C. & O., that road contending that the Coal River & Eastern was only a spur. The petition did lead, however, to negotiations for the purchase of the short line, and in May it became known that an offer of $370,000 had been made by the C. & O.

The Coal River Collieries Co. is preparing to embark upon a program of expansion, following the sale of the road, and expects to increase the output of the company to a million tons annually. The output of the mine at Prenter, now in operation, will be increased from 1,000 to 5,000 tons daily and other improvements made.

## Railroads Save on Fuel Bill

Class I railroads saved about $22,500,000 on their fuel bill during the first half of this year compared with the first half of last year, according to figures issued by the Interstate Commerce Commission. The total cost of coal and fuel oil for the first half of last year was $185,572,620 against a cost of $163,120,525 for the first half of this year. This saving of $22,452,095 resulted partly from a decrease in the price of coal and partly from economies effected by the railroad managements, as the average cost per gallon of fuel oil advanced.

Notwithstanding this saving, the railroads increased the average number of cars per freight train from 40.7 in the first six months of 1924 to 42.9 in the first six months of this year and the net tons per train from 694 to 727. In spite of the heavier and longer trains, the freight traffic of the country moved 0.4 of a mile faster this year than last.

The railroads covered in the report consumed 47,406,574 net tons of coal at an average cost of $2.78 per ton in the first half of 1925, compared with 49,721,957 tons at an average cost of $3.18 a ton in the corresponding period of 1924. In June 7,126,738 net tons of coal was consumed, as against 6,916,210 tons in June, 1924. The average cost per ton in June was $2.70, compared with $3.02 in the same month a year ago, the respective totals being $24,376,103 and $25,314,756.

# Problems In Underground Management

## Improved Low-Head Siphon Has Many Virtues

### Operates with Least Possible Head, Draws Water Over High Humps and Always Remains Primed Even Though Sump Goes Quite Dry

By **J. Alfred Scollon**
Barnesboro, Pa.

The improved siphon shown in the accompanying illustration is really nothing more than the ordinary device of this kind supplemented by a short inverted siphon at each end. It is designed to operate with the least effective pressure head, to efficiently draw water over higher summits than will a common siphon, and to remain primed, or full when the water in the sump has been lowered to the same elevation as the discharge level, or even when the sump for any reason may be completely drained.

As the effective pressure head decreases (see accompanying drawing) the velocity in the siphon likewise will decrease until the water level of the sump reaches the same elevation as the discharge level, when the flow naturally will cease. Since the water level at the suction end $A$, and at the discharge end $D$ are then the same, the hydrostatic pressure will be equal at both extremities. With the atmospheric pressure on the ends the same, the two legs of the siphon will exactly balance, regardless of the length of either. With the upturned portions $AB$ and $DE$ filled with water, air cannot enter the line from either end on account of its being so much lighter than the water in the pipe. The water is held in the line as long as it is thus balanced. When the water in the sump again rises above the discharge level, the total pressure at $A$ will be greater than that at $D$, and the siphon will resume its operation.

The limit of vertical height $S$ to the summit of the siphon is equal to the height of water column that the atmospheric pressure will balance. This limit will vary with altitude and atmospheric conditions, and may be found by multiplying the barometer height by the specific gravity of mercury (13.58 at 60° F.). Thus, if the barometer reading is 28 in. this limit will be:

$$S = 13.58 \times 28 = 380.24 \text{ in} = 31.69 \text{ ft.}$$

This improved siphon is installed and put into operation in practically the same manner as the ordinary device of this kind, and the same formula applies.

Practical considerations determine the highest permissible water level in the sump. The vertical distance, $H$, from this level to the discharge elevation may be measured and the length of the required siphon line may likewise be determined. Then if the rate of maximum influx of water to the sump is known or can be estimated, the size of pipe may be calculated. This pipe must have sufficient capacity to carry the maximum amount of water entering the sump when the height, $H$, of the water in the sump above the discharge level is as high as possible. Assuming that the curvature in the turned-up ends of the pipe is uniform, and that the radius of curvature is not less than about twelve times the diameter of the pipe, the extra friction due to these curves may be considered negligible.

The following formula is used:

$$D = \sqrt[5]{\frac{G^2KL}{8H}}$$

When

$D$ = Diameter of the pipe in inches,

$G$ = Number of gallons per minute flowing into the sump,

$L$ = Total length of the siphon line in feet,

$K$ = Coefficient of friction (usually taken as 0.01),

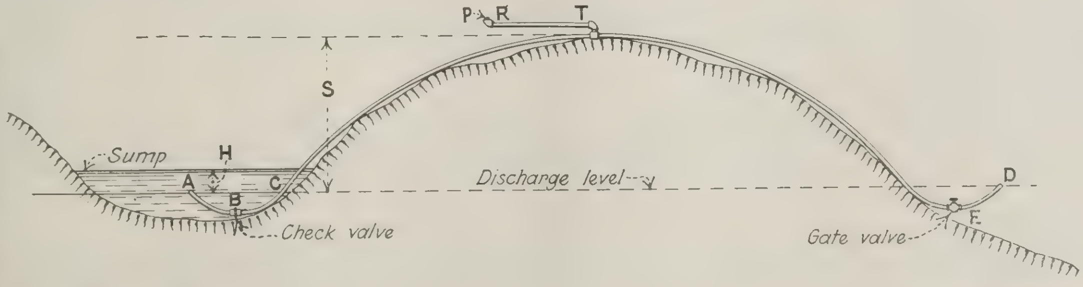
and

$H$ = Highest permissible effective head in feet.

From the same formula we find that $G = 2.83D^2\sqrt{\frac{DH}{KL}}$,

$$\text{and } H = \frac{G^2KL}{8D^5}$$

When installing a siphon of this kind it is well to make each of the distances from the low points $B$ and $E$ to the discharge level, at least six times the diameter of the pipe. If the siphon is to be used in a mine where the ventilating pressure is different at its two ends, the effective pressure head, $H$, will be increased or decreased by the height of water gage which this difference



*Arrangement of Improved Siphon*

in ventilating pressure will produce. This height of water gage should be added to or subtracted from the vertical distances from the points *B* and *E* to the discharge level.

In place of having the ends of the line turned up as shown, they may be turned downward and submerged in a barrel or other suitable receptacle filled with water. The elevations of the ends of the pipe will then correspond to the low points *B* and *E* and the overflow points of the barrels will correspond in elevation to the discharge level of the siphon as here shown. If it is definitely known that the water in the sump will never go below the level of the discharge line, the short section *AB* on the suction end may be omitted.

After the proper elevations, size of pipe, etc., have been determined the next most important consideration is so to construct the line that it will be absolutely air-tight when under pressure. Usually a check valve is placed in the line at the low point *B* on the suction end and a gate valve at the corresponding point of the discharge end. These should be closed only when the line is being primed or filled. The siphon may be primed by means of a force pump connected to either end, or by pouring in water at the summit.

In order to bleed out all the air (which may result from the formation of small bubbles in the line while it is being primed), an air chamber connected to a tee at the summit of the siphon should be used. This may take the form of an air-tight tank, or a piece of pipe, preferably of larger diameter than the siphon line, as shown by *TR*. This tank has an opening on top, *P*, that may be tightly closed by a metal plug. A valve should be placed between the summit of the siphon and the air chamber. The upper internal surface of the short piece connecting the siphon line and the air chamber, as well as that of the chamber itself, must have a continuous upward pitch, so that any air-bubbles reaching the summit of the siphon may pass, without obstruction into the air-chamber when both have been filled with water.

While the siphon is being primed, the gate valve between its summit and the air chamber as well as the vent, *P*, in the top of the air chamber are left open so that all air may be expelled. When the whole system has been filled to the top of the air chamber, and practically all air in the line has been expelled at *P*, the valve between the siphon summit and the air chamber should be tightly closed. It may be reopened when the vent at *P* has been closed.

Before opening the gate valve at *E* the short turned-up section of pipe *ED* should be filled with water. The siphon is put into operation by opening this valve.

If it is later found that the flow has stopped when the water level in the sump is above the discharge level, or if the velocity at the discharge has fallen below normal for the existing height of the water in the sump, it is probable that either the gate valve at *E* has been fully or partly closed, or that air is entering the line through a small leak. If the latter is found to be the cause of the trouble, the air in the siphon may be expelled by closing the valve between the siphon summit and the air chamber, opening and refilling chamber with water, closing it tightly, and then opening the valve between it and the siphon summit. Unless the leak is found and repaired, it will be necessary to repeat this operation later.

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# Device for Extension of Face Tracks Has Back-Stop Horns

By C. P. Turley

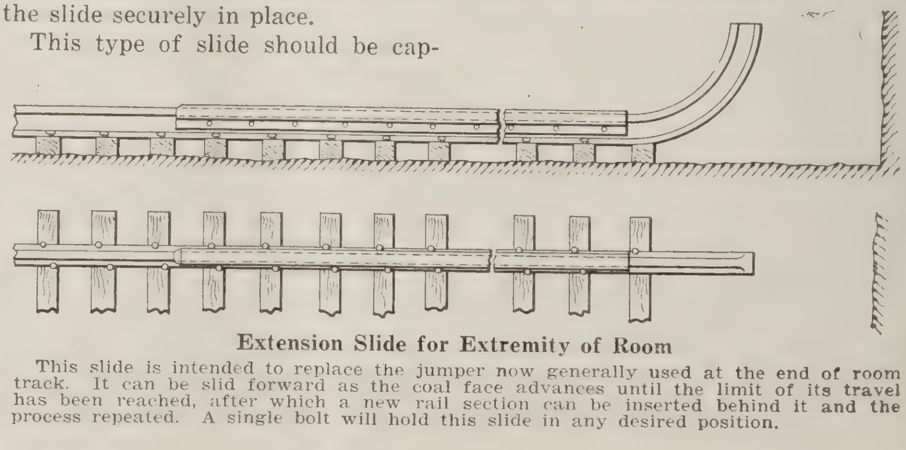
Stirrat, W. Va.

It has long been recognized by mining men that the method usually employed for extending track at the working face is inefficient, troublesome and expensive, yet little progress has been made toward overcoming these difficulties. Surely at a time like the present, when every effort is being made to decrease the cost of production, this item of expense should not be overlooked.

In seeking a remedy for the difficulties encountered in extending track, my attention has been called to a device that appears to possess many advantages over means and methods now in use. This contrivance is shown in the accompanying illustration. It consists of a steel slide, U-shaped in cross-section, with a short piece of curved rail bolted to its extremity. The slide is so made as to conform to the shape of an ordinary T-rail and readily slips back and forth upon the size of rail for which it is designed. Holes are so placed in this slide as to conform to the drilling of the rail fitted. A bolt inserted in one of these holes and passing through the rail holds the slide securely in place.

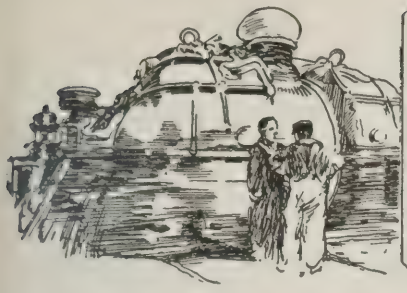
This type of slide should be capable of being extended 15 ft. Such a slide when thus used in conjunction with a 15-ft. section of rail will permit the employment of 30-ft. rail lengths. Before such a length of rail is put in place, however, the slide should be slipped over its end. As the face advances the slide may be moved forward until it is fully extended when a 15-ft. rail length may be added. Other lengths of rails and slides may, of course, be used.

If shortwall machines are to be used at the face the bolts holding the slide to the rail may be withdrawn, and the slide pushed back until the machine has passed, after which it may be slid forward again and fastened in place. The horn at the extremity of the slide is designed to prevent cars from running off the end. This effectively forestalls loss of time from this cause. Where the grades will permit, the motorman can "kick" empties to the face. Also in picking up loads he need not exercise extreme care in approaching or coupling onto them. Even if the loaded car is bumped by the locomotive it will not be derailed.

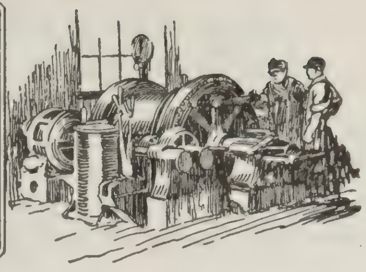


**Extension Slide for Extremity of Room**

This slide is intended to replace the jumper now generally used at the end of room track. It can be slid forward as the coal face advances until the limit of its travel has been reached, after which a new rail section can be inserted behind it and the process repeated. A single bolt will hold this slide in any desired position.



# Practical Pointers For Electrical And Mechanical Men



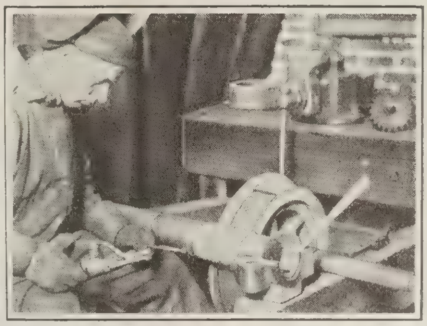
## Electric Welds Should Be Reinforced, Results of Many Tests Show

It was about 1908 that autogenous welding by means of an electric arc and a metallic electrode made its first commercial appearance. From then until 1914 the process made but slow gain, steam railway companies being the principal users. It was not until 1919 that coal mining companies began to install electric welders in their repair shops. Now an electric welding machine is considered as one of the first essentials of a well equipped repair shop.

In order to make intelligent applications of electric welding it is necessary to have an understanding of what strength can be expected from welds made by an experienced operator. The following figures are a summary of the results of tests on a series of welds made by an operator who up to that time had had about ten years' experience and was considered the best among a number of operators. The welds were made on sections of boiler plate $\frac{3}{8}$ in. thick and 3 in. wide. The ends to be butt welded were ground on an emery wheel to the correct bevel, and ordinary mild-steel electrodes of $\frac{5}{32}$-in. diameter were used. The specimens were pulled and broken in a testing machine.

| | |
|---|---|
| Tensile strength of original plate, lb. per square inch | 56,000 |
| Efficiency of joints welded on both sides, per cent | 90 |
| Efficiency of joints welded on one side, per cent | 83 |
| Ratio of strength (per square inch of section) of welded metal to the original, when plain electrodes were used, per cent | 63 |
| Same, when using flux-coated electrodes, per cent | 71 |

In every test of the welded specimens the rupture took place directly through the center of the weld rather than along the line where the added metal was joined to the plate. The average tensile strength, per square inch of welded metal at the break, was 38,200 lb.



**Welding in a Mine Shop**

Filling the tread of a steel tire and building up a worn axle are the jobs which happened to be caught in the photograph from which this illustration was made. It will be noted that the second layer of metal is being applied to the tire and that the bead is put on crosswise. The operator's face shield is raised while he changes electrodes.

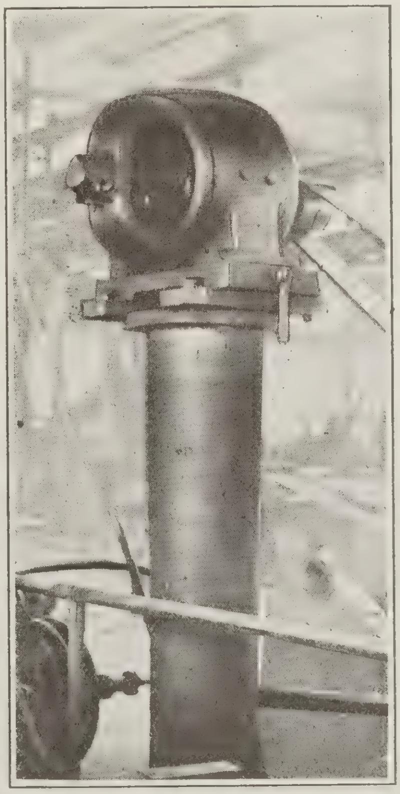
The ratio of strength of the added metal to the original, 67 per cent (an average of the above figures for plain and flux-coated electrodes), indicates that if the specimens had been reinforced at the weld to approximately 150 per cent of the original size, the strength of the welded specimen would have been equal to the original. From this is deduced the rough rule that an electric weld on ordinary low-carbon rolled steel should, if possible, be reinforced so that the weld will have an area about $1\frac{1}{2}$ times larger than was the area of the break.

## Cast-Iron Pipe Makes High Motor Stand

It is a well recognized principle of mechanics that in order to attain its maximum efficiency, a belt should be run horizontally or nearly so. This is because in this position the weight of the belt assures adequate tension and consequent friction of the belt on the pulleys. It is also well recognized that, particularly in shop and mill work, it is advantageous to place the motor driving a machine at a point somewhat elevated above the shop or mill floor. It is, however, not always convenient to find a suitable foundation at such an elevated point.

The accompanying illustration shows an elevated motor stand employed in the No. 4 shop of the Kingston Coal Co., Kingston, Pa. This stand consists essentially of an old length of cast-iron pipe, the lower end of which is imbedded in a suitable concrete foundation, set level with the shop floor. The flange on the upper end of the pipe furnishes a suitable bearing for the oak beams upon which the motor itself rests and to which it is bolted, the beams being fastened to the flange.

A support of this kind answers all the requirements of motor mounting. The cast iron pipe is sufficiently rigid to absorb any vibration that may be present, and also to resist the tension of the belt.



**Keeping It Up**

Elevating the motor well above the mine shop floor has many obvious advantages. A large cast-iron pipe set flange end up in a substantial concrete foundation accomplishes the desired result—raises the motor well off the floor, keeps the belt tight and affords a firm yet resilient base.

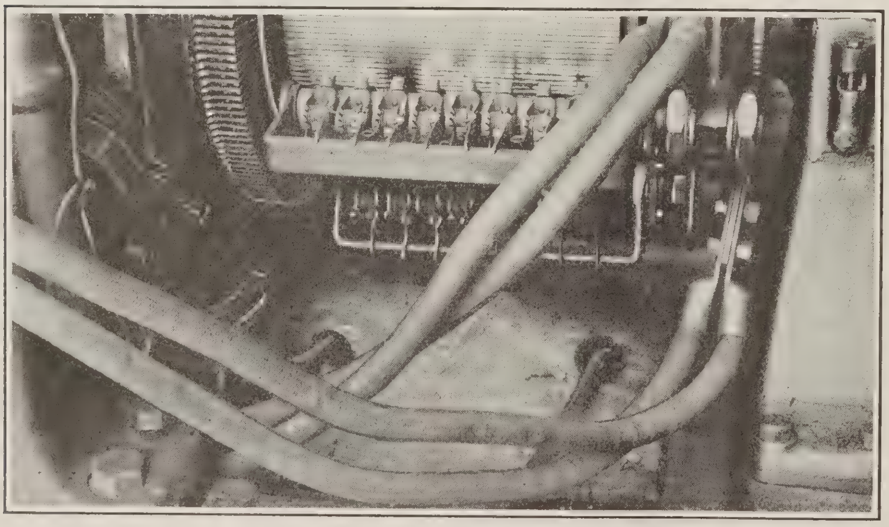
## Cable Conduits Terminate Below Floor Level

It has happened many times that the floor of a substation has been flooded, but that no damage has been done to the under-floor wiring because of the fact that it was installed in metallic conduit and the ends of this conduit carried to a point a few inches or more above the floor. Other instances have occurred where the water rose to a level above the tops and filled the conduits, necessitating a tedious job of drying out, or if neglected, resulting in grounded wiring.

For a substation located where there is good opportunity for drainage and where there is only a remote possibility of flooding, the method of under-floor wiring illustrated in the accompanying illustration has proved satisfactory. A shallow pit is provided under the machine, and a narrow trench made in back of the switchboard, and both equipped with tile drains to the outside. The conduits for the wires are carried straight from the pit to the trench, these conduits ending flush with the sides.

Advantages of this type of installation are: (1) low first cost; (2) installation does not require a skilled conduit worker and special bending tools; (3) because there are no bends there is no trouble in pulling heavy cables through; (4) wires are readily accessible for repairs; (5) no trouble is experienced in running additional small wires from the machine to the board as is necessary in case special control or protective features are added; (6) in the remote case of flooding, the conduits will drain themselves.

Mention of the last advantage brings up the point that it is well to lay the conduit with a slight pitch toward one end so there will be no chance for water to stand.



**Conduits End Flush with the Walls of the Pit**

In this particular installation of a 300-kw. converter at a West Virginia coal mine, fiber conduit is used. The other ends of the conduits terminate in the same way in a shallow trench back of the switchboard. This is an inexpensive but satisfactory method of installation.

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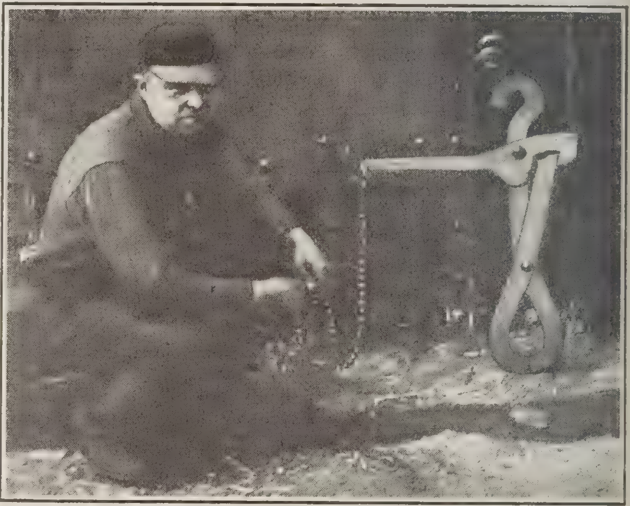
## Lever Latch Makes Cage Testing Safer

Many and varied are the arrangements made for testing the condition of safety dogs on cages, but they all resolve themselves into three schemes, the third of which, described in this article, is safest. One plan is to jack the cage over the mouth of the shaft allowing a little slack in the bridle chains which is taken up by a loop of hemp rope strung between the hoist rope clevis and the cage. The blocks are then removed from under the cage and the hemp rope is cut causing the cage to drop a distance equal to the slack in the bridle chains.

**"Life Tongs"**

This device, built by John Fark (in the picture), Ford Collieries Co. blacksmith, releases a cage for a test of the safety dogs. The top hook engages the hoist rope clevis and the jaws hold the drawbar clevis. A pull of the chain drops the cage. No man need endanger his life to do it, as is necessary by some other testing methods.

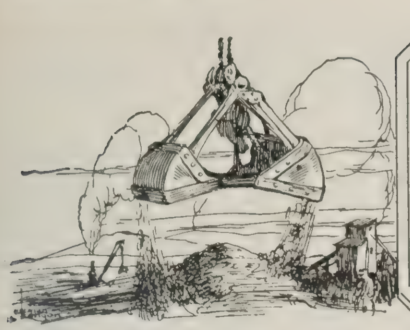


A second scheme sometimes employed is to disconnect the rope and chains from the cage and then join the hoist rope clevis to the cage drawbar by a loop of hemp rope. When the hemp rope is cut the cage may drop only an inch or two before the safety dogs catch or it may go 20 or 30 ft. Sometimes it may drop to the bottom, due to the failure of the dogs or to the rotten condition of the guides.

Neither of these two schemes can be executed easily and both—particularly the second—expose the testing men to danger. Several men have lost their lives while standing on the cage to cut the hemp rope in cases where the cage has dropped to the bottom of the shaft.

A third method, and by far the best, involves the use of a mechanical release which can be controlled from a distance. John Fark, blacksmith at the Benjamin mine of the Ford Collieries Co., Curtisville, Pa., devised a mechanism which makes the job of testing cage safety dogs safe. He and his device appear in the accompanying illustration.

His mechanism works on the scissor principle as in a pair of ice tongs. The lower jaws come together when in a closed position and are held so by a lever latch. A chain at one end of this lever opens the latch on the other end. At the upper end of one arm of the pair of tongs is a hook which, during a test, engages the hoist rope clevis while the points of the tongs encircle the drawbar clevis. In this position the tongs are the only support between the rope and cage. By a mere pull on the release chain the cage drops away from the rope.



# Production And the Market

## Public Remains Calm as Strike Continues; Soft-Coal Trade Active

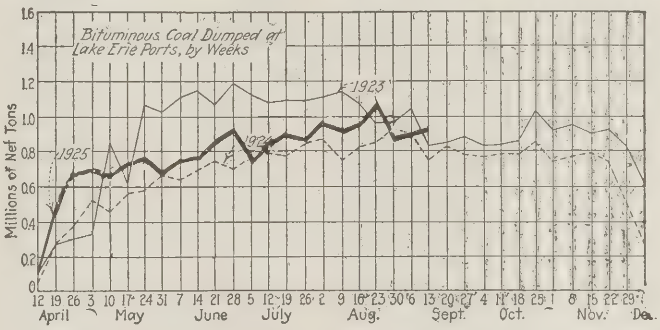
The third week of the hard-coal "suspension" finds definite steps toward a settlement no nearer than a week ago. Governor Pinchot of Pennsylvania, it is true, has had conferences with Major Inglis and John L. Lewis, but the results, if any, have not been made public, the Governor stating that his action was not an attempt at mediation but in order to keep posted on the situation. Never, perhaps, has a shutdown been marked by less evidence of panic or even nervousness on the part of the public than the present. Anthracite consumers, for one thing, have a larger proportion of their winter's needs on hand than usual at this time, and, basing their opinion on past experiences, are confident that an agreement will be brought about—through government intervention if necessary—before the danger point is reached.

The market, of course, is not lacking in vagaries, wholesale prices for domestic sizes varying according to buyer and seller. Quotations were reported ranging from $11 for stock chestnut and $12.50 for fresh mined chestnut to $14 for stove and egg. Coal in bottoms is reported quoted at $15 to $16.25 alongside. Practically all sizes but pea and No. 1 buckwheat are out of the market, old line companies taking care of regular customers as best they can.

### Soft-Coal Market More Active

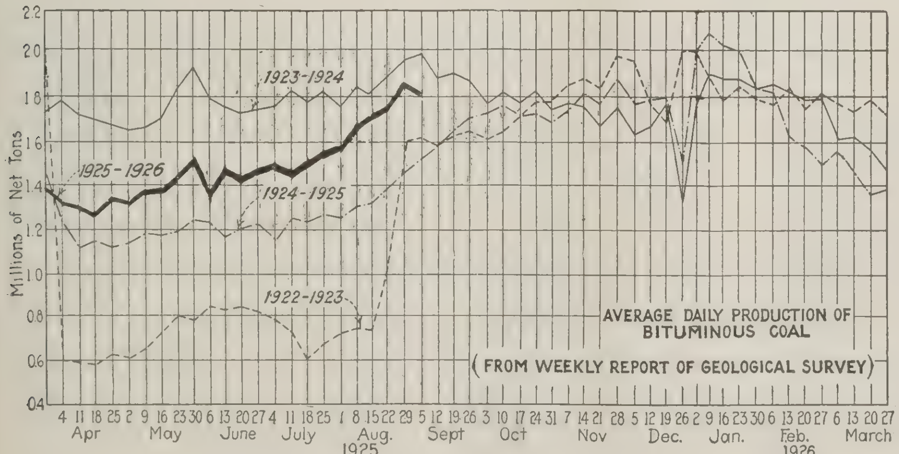
Increasing activity marks the bituminous coal trade, working time at most mines showing an advance and many operations that had been closed for some time being able to resume. The demand is strongest for high grade coals, smokeless continuing to be the outstanding market feature. It is worthy of note, however, that such union fields as southern Illinois, Indiana and Ohio are beginning to feel the benefit of the improvement in demand. In many instances operators are selling their product subject to price prevailing at the time of shipment, no definifite figures being quoted.

Production of bituminous coal during the week ended Sept. 5 is estimated by the Geological Survey at 10,808,000 net tons, compared with 11,202,000 tons in the preceding week, as shown by revised figures. There was some production of anthracite on Aug. 31, the day before the strike went into effect, but reports are insufficient to permit an accurate estimate of the output.



*Coal Age* Index of spot prices of bituminous coal receded slightly last week, standing on Sept. 12 at 178, the corresponding price being a fraction less than $2.16.

Dumpings at Lake Erie ports during the week ended Sept. 13, according to the Ore & Coal Exchange, were: Cargo, 887,705 net tons; steamship fuel, 45,331 tons—a total of 933,036 net tons, compared with 931,257 tons in the preceding week. Hampton Roads dumpings during the week ended Sept. 10 totaled 382,935 net tons, compared with 421,390 tons in the previous week.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| Aug. 22 (*a*) | 8,582,000 | 10,522,000 |
| Aug. 29 (*a*) | 9,006,000 | 11,202,000 |
| Sept 5 (*b*) | 8,208,000 | 10,808,000 |
| Daily average | 1,560,000 | 1,801,000 |
| Cal. yr. to date | (*c*) 308,578,000 | 328,301,000 |
| Daily av. to date | 1,475,000 | 1,561,000 |
| **ANTHRACITE** | | |
| Aug. 22 | 1,711,000 | 2,209,000 |
| Aug. 29 | 1,837,000 | 2,319,000 |
| Sept. 5 | 1,451,000 | (*d*) |
| **COKE** | | |
| Aug. 29 (*a*) | 110,000 | 165,000 |
| Sept. 5 (*b*) | 112,000 | 159,000 |
| Cal. yr. to date | (*c*) 7,015,000 | 6,567,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years. (*d*) Insufficient data.

### Midwest Market Is Active

Demand for Indiana and Franklin County coals in the Midwest market continues very good; southern Illinois and Indiana Fourth Vein operators, in fact, are selling 6-in. lump at the price current at time of shipment, no definite figures being quoted. And all seem to be oversold two or three weeks ahead. The smaller prepared sizes are moved only with some difficulty except when applied on contracts made earlier in the season. A great deal of fine coal also is to be had at lower prices than have been quoted previously this year. Business on the lower grades of Indiana coal, such as Fifth Vein, remains very poor. There was a little spurt this last week, however, when the miners declared a general strike at all mines located on the C. & E. I., due to an increase in fares to the mines.

Eastern coal is still in strong demand and prices have been keeping pace. But little eastern Kentucky and West Virginia coal is offered. Certain states, such as Minnesota and Iowa, have been slow in placing orders, but the general opinion is that with cooler weather the demand will increase. The anthracite strike has not aroused the public or dealers.

Pocahontas holds strictly at the $5 basis, with mine-run at $2.55@$2.75. Though sales have been made in some states at these prices, consumers in this part of the country have not taken to the high prices. Midwest dealers look for a suitable substitute in a high-grade eastern Kentucky or other West Virginia coal. A few Chicago jobbers, finding new business not coming in as freely as it was two weeks ago, fear a reaction, though the low stocks in dealers' bins would seem to presage that the demand on high grade coal will continue to be good for some time.

Warm weather in southern Illinois has interfered with the movement of domestic tonnage. Even lump, which was somewhat scarce, has become plentiful in a way on account of dealers holding up their orders. This is general all over Illinois, however, and the result is that there is plenty of coal to be shipped and orders are easing up. Steam seems to be keeping up pretty well with production from shaft mines. Nearly full time is being worked now by nearly all the mines and railroad tonnage is reported good. Strip mines are working full time and seemingly have a good market, although prices are not what were expected. A shortage of water throughout Williamson and Franklin counties has affected production.

Mines in the Duquoin and Jackson County fields are beginning to work full time, as there is a fairly good demand for all coal. Throughout all of these fields there are several mines that have not resumed operations. The surplus of labor that was evident a month ago is rapidly disappearing. In the Mt. Olive field there is continued activity and a good movement of domestic and railroad tonnage is reported, with steam about equal to the production. Working time is three to four days a week.

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Sept. 15 1924 | Aug. 31 1925 | Sept. 5 1925 | Sept. 14, 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.60 | $4.00 | $4.60 | **$4.50@$5.00** |
| Smokeless mine run | Columbus | 2.00 | 2.15 | 2.50 | **2.40@ 2.75** |
| Smokeless screenings | Columbus | 1.20 | 1.50 | 1.50 | *1.40@ 1.60* |
| Smokeless lump | Chicago | 3.85 | 4.25 | 4.75 | 4.50@ 5.00 |
| Smokeless mine run | Chicago | 1.90 | 2.60 | 2.60 | 2.50@ 2.75 |
| Smokeless lump | Cincinnati | 3.85 | 3.85 | 5.00 | 4.50@ 5.50 |
| Smokeless mine run | Cincinnati | 1.85 | 2.35 | 2.50 | **2.50@ 2.75** |
| Smokeless screenings | Cincinnati | 1.35 | 1.60 | 2.00 | 2.00 |
| *Smokeless mine run | Boston | 4.15 | 4.90 | 5.35 | **5.50** |
| Clearfield mine run | Boston | 1.90 | 1.70 | 1.90 | *1.65@ 2.10* |
| Cambria mine run | Boston | 2.25 | 2.00 | 2.10 | 1.85@ 2.40 |
| Somerset mine run | Boston | 2.05 | 1.85 | 2.00 | *1.75@ 2.25* |
| Pool 1 (Navy Standard) | New York | 2.75 | 2.55 | 2.85 | 2.75@ 3.00 |
| Pool 1 (Navy Standard) | Philadelphia | 2.40 | 2.60 | 2.60 | **2.50@ 2.85** |
| Pool 1 (Navy Standard) | Baltimore | 2.60 | 2.05 | 2.30 | 2.25@ 2.35 |
| Pool 9 (Super. Low Vol.) | New York | 2.10 | 2.00 | 2.15 | 2.10@ 2.25 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.05 | 2.05 | **1.95@ 2.00** |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.85 | 1.90 | 2.05 | 2.00@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.80 | 1.80 | 2.00 | 1.90@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.85 | 1.85 | **1.75@ 2.00** |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.60 | 1.75 | 1.90 | 1.85@ 1.95 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.60 | 1.80 | *1.70@ 1.90* |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.65 | 1.65 | **1.60@ 1.80** |
| Pool 11 (Low Vol.) | Baltimore | 1.45 | 1.55 | 1.70 | 1.70@ 1.75 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.60 | 1.60 | 1.50@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.35 | 1.50 | 1.65 | 1.65@ 1.70 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.50 | 2.50 | 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.95 | 1.95 | **2.00@ 2.15** |
| Pittsburgh slack (Gas) | Pittsburgh | 1.35 | 1.55 | 1.55 | 1.50@ 1.60 |
| Kanawha lump | Columbus | 2.10 | 2.55 | 2.60 | **2.45@ 2.80** |
| Kanawha mine run | Columbus | 1.40 | 1.65 | 1.65 | **1.55@ 1.85** |
| Kanawha screenings | Columbus | 1.05 | 1.30 | 1.30 | 1.25@ 1.35 |
| W. Va. lump | Cincinnati | 2.30 | 2.35 | 3.00 | *2.50@ 3.00* |
| W. Va. gas mine run | Cincinnati | 1.45 | 1.60 | 1.60 | **1.60@ 1.75** |
| W. Va. steam mine run | Cincinnati | 1.35 | 1.40 | 1.45 | **1.40@ 1.60** |
| W. Va. screenings | Cincinnati | 1.05 | 1.15 | 1.20 | *1.10@ 1.25* |
| Hocking lump | Columbus | 2.40 | 2.75 | 2.75 | 2.65@ 2.90 |
| Hocking mine run | Columbus | 1.55 | 1.65 | 1.65 | 1.50@ 1.80 |
| Hocking screenings | Columbus | 1.15 | 1.40 | 1.40 | 1.35@ 1.50 |
| Pitts. No. 8 lump | Cleveland | 2.30 | 2.50 | 2.50 | *2.00@ 2.75* |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.90 | 1.90 | *1.85@ 1.90* |
| Pitts. No. 8 screenings | Cleveland | 1.15 | 1.55 | 1.55 | *1.40@ 1.50* |

| Midwest | Market Quoted | Sept. 15 1924 | Aug. 31 1925 | Sept. 5 1925 | Sept. 14 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $3.35 | $3.10 | $3.25 | $3.25 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.65 | 1.95 | 1.60 | 1.50@ 1.75 |
| Central, Ill. lump | Chicago | 2.60 | 2.85 | 2.85 | 2.75@ 3.00 |
| Central, Ill. mine run | Chicago | 2.20 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central, Ill. screenings | Chicago | 1.45 | 1.55 | 1.55 | 1.35@ 1.75 |
| Ind. 4th Vein lump | Chicago | 2.85 | 2.85 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.60 | 1.60 | 1.60 | 1.50@ 1.75 |
| Ind. 5th Vein lump | Chicago | 2.50 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.45 | 1.20 | 1.20 | 1.15@ 1.30 |
| Mt. Olive lump | St. Louis | 2.75 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.75 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.55 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | .95 | 1.30 | 1.30 | *1.15* |
| West Ky. block‡ | Louisville | 2.60 | 2.10 | 2.10 | 2.00@ 2.25 |
| West Ky. mine run | Louisville | 1.60 | 1.35 | 1.35 | 1.25@ 1.50 |
| West Ky. screenings | Louisville | 1.00 | .75 | .75 | .65@ .85 |
| West Ky. block‡ | Chicago | 2.45 | 2.05 | 2.30 | 2.25@ 2.40 |
| West Ky. mine run | Chicago | 1.60 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.10 | 2.20 | 2.25 | 2.00@ 2.50 |
| Big Seam mine run | Birmingham | 1.75 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.00 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block‡ | Chicago | 2.50 | 2.80 | 3.00 | 2.75@ 3.25 |
| S. E. Ky. mine run | Chicago | 1.60 | 1.95 | 1.95 | 1.85@ 2.10 |
| S. E. Ky. block‡ | Louisville | 2.50 | 2.85 | 3.00 | 2.75@ 3.25 |
| S. E. Ky. mine run | Louisville | 1.50 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Louisville | .90 | 1.15 | 1.25 | 1.10@ 1.40 |
| S. E. Ky. block‡ | Cincinnati | 2.50 | 2.55 | 3.00 | 2.75@ 3.25 |
| S. E. Ky. mine run | Cincinnati | 1.45 | 1.55 | 1.60 | *1.40@ 1.75* |
| S. E. Ky. screenings | Cincinnati | 1.05 | 1.15 | 1.20 | *1.10@ 1.25* |
| Kansas lump | Kansas City | 4.50 | 4.35 | 4.35 | 4.25@ 4.50 |
| Kansas mine run | Kansas City | 3.50 | 3.10 | 3.10 | 3.00@ 3.25 |
| Kansas screenings | Kansas City | 2.50 | 2.50 | 2.50 | 2.50 |

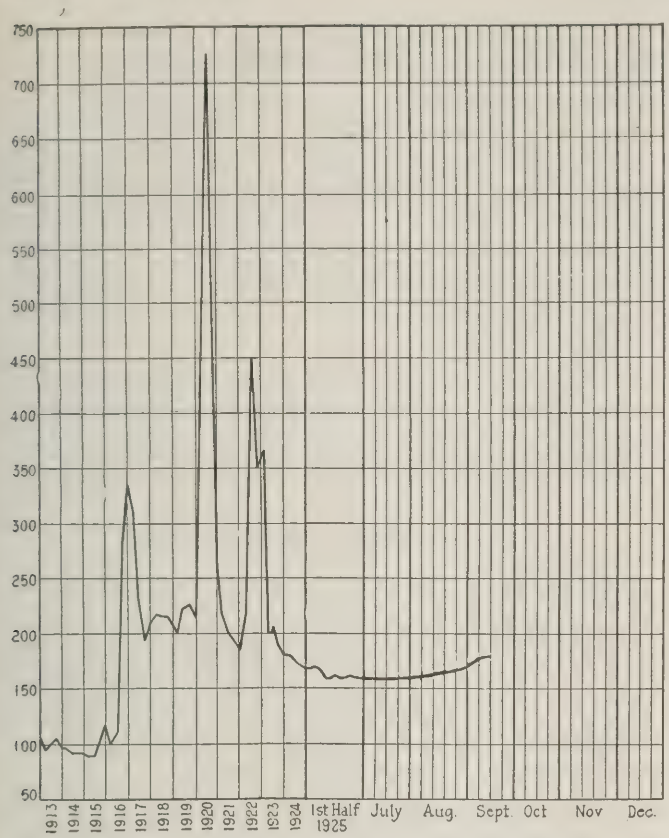
* Gross tons, f.o.b. vessel, Hampton Roads.

† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | September 15, 1924 | | September 5, 1925 | | September 14, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ............ | $8.00@$9.25 | ............ | $8.20@$8.95 | ............ | $8.20@$8.95 |
| Broken | Philadelphia | 2.39 | ............ | 9.15 | ............ | 8.25@ 8.90 | | ............ |
| Egg | New York | 2.34 | $8.50@$9.40 | 8.75@ 9.25 | $13.00@14.00 | 8.65@ 8.90 | $13.00@14.00 | 8.65@ 8.90 |
| Egg | Philadelphia | 2.39 | 9.00@ 9.70 | 8.80@ 9.25 | 8.90@ 9.70 | 8.70@ 8.95 | ............ | ............ |
| Egg | Chicago* | 5.06 | 8.17@ 8.27 | 8.14@ 8.20 | 8.17@ 8.60 | 8.03@ 8.28 | 8.17@ 8.60 | 8.03@ 8.28 |
| Stove | New York | 2.34 | 9.25@10.00 | 8.75@ 9.50 | 13.00@14.00 | 9.15@ 9.40 | 13.00@14.00 | 9.15@ 9.40 |
| Stove | Philadelphia | 2.39 | 9.35@10.00 | 9.15@ 9.50 | 9.15@10.75 | 9.15@ 9.35 | ............ | ............ |
| Stove | Chicago* | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@11.00 | 8.48@ 8.80 | 10.00@11.00 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 8.75@ 9.45 | 8.75@ 9.25 | 13.00@14.00 | 8.65@ 8.95 | 13.00@14.00 | 8.65@ 8.95 |
| Chestnut | Philadelphia | 2.39 | 8.85@ 9.80 | 9.15@ 9.25 | 9.15@10.15 | 8.85@ 8.95 | ............ | ............ |
| Chestnut | Chicago* | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@11.00 | 8.28@ 8.50 | 10.00@11.00 | 8.28@ 8.50 |
| Pea | New York | 2.22 | 5.00@ 5.25 | 5.50@ 6.00 | 6.00@ 7.00 | 5.00@ 6.00 | 6.00@ 7.00 | 5.00@ 6.00 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | 5.50@ 5.90 | 5.00@ 6.00 | ............ | 5.00@ 6.00 |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.25@ 5.75 | 5.05@ 5.36 | 5.25@ 5.75 | 5.05@ 5.36 |
| Buckwheat No. 1 | New York | 2.22 | 2.25@ 2.90 | 3.00@ 3.15 | 2.60@ 3.00 | 2.50 | 2.60@ 3.00 | 2.50 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | 2.50@ 2.75 | 2.50 | ............ | 2.50 |
| Rice | New York | 2.22 | 1.75@ 2.00 | 2.00@ 2.25 | 2.25@ 2.50 | 2.00 | ............ | 2.00 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | 2.00@ 2.25 | 2.00 | ............ | **2.25** |
| Barley | New York | 2.22 | 1.25@ 1.50 | 1.50 | 1.80@ 2.00 | 1.50 | ............ | 1.50 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | 1.50@ 1.75 | 1.50 | ............ | 1.50 |
| Birdseye | New York | 2.22 | ............ | 1.60 | 1.80@ 2.00 | 1.60 | ............ | 1.60 |

* Net tons, f. o. b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Sept. 14 | Sept. 7 | Aug. 31 | Sept. 15 |
| Index | 178 | 179 | 174 | 167 |
| Weighted average price | $2.16 | $2.16 | $2.10 | $2.02 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

In the Standard field there is some increase in working time and in demand for domestic sizes and, strange to say, steam has picked up in the last week. Prices don't mean anything as they are about the cost of production excepting at mines that are oversold, which are asking prices that the quality and preparation of the coal don't justify. Mines in the Standard field are working from three to five days a week and coal is moving fairly well. Prices are unchanged.

In St. Louis warm weather has slowed up domestic buying. Yards are full and the demand, which has been for high grade, is slipping off to middle grade and cheaper coals and a considerable tonnage of western Kentucky coal is beginning to move throughout the territory where Illinois had been firmly entrenched. Dealers are advising their customers to some extent to buy western Kentucky coal and buy the cheaper grades of Illinois coal rather than Franklin County and Carterville on account of the prices, which they assert are not warranted. The effect of this resentment which prevails in St. Louis and eastern Missouri is most noticeable in central Illinois. The movement of smokeless, anthracite and coke locally is quiet. Local wagonload steam is nil but carload is good and a little storage is being put in. Apartments still continue to take Standard for storage. Country steam is quiet but country domestic is rather active and is looking for the cheaper fuels.

## Demand Slowly Gains in Kentucky

In Kentucky the demand for coal is good and improving somewhat on steam sizes, but no price changes are reported. Domestic sizes are a trifle slow on account of drought and extremely hot weather over the South and Middle West.

Eastern Kentucky nut and slack are meeting with excellent sale north of the Ohio River, due to active consumption of industrial plants, utilities, ice and cold storage and general consuming industries. When the weather becomes more normal there should be a rapid increase in demand for prepared sizes. Eastern Kentucky mines have good orders in hand and are reported to be busy. In western Kentucky production is slowly but steadily improving. As a result of the anthracite strike inquiries for prepared sizes are coming from Eastern states.

In western Kentucky improved prices of domestic have been fairly well offset by lower prices of screenings, resulting in average per ton on mine-run basis not being much over $1.40, while eastern Kentucky, which had been getting $1 and up for screenings, is showing an average from $1.60 a ton and up.

Better prices and movement have attracted the attention of wagon and small mines that haven't operated for two years or more, and indications are that these operations will soon be flourishing again and interfering with car supply. Car shortage already is beginning to develop, in fact. Water shortage also is beginning to be felt as the result of a two months drought. One operation in western Kentucky is reported to have been forced to suspend.

Labor has been a trifle scarce in some sections, but, due to dry weather and early harvesting of crops, the part-time farmer-miner labor probably will be back in the mines earlier than usual this season.

## Improvement Continues in Northwest

Improvement continues in the Duluth-Superior market. Dealers and industrial consumers have been placing orders for bituminous and anthracite of late and the docks have been shipping out fair tonnages. Dealers and the public are calm despite the anthracite strike feeling assured that plenty of substitutes will be available.

The feature in the bituminous market is another advance of 50c. in the price of Pocahontas lump, egg and stove to $8.50. Mine-run and screenings are unchanged. Quotations in all other bituminous grades are steady and unchanged. Anthracite prices are as they were save that pea is in better demand for mixing and sells for $10.50.

Shipments from Duluth and Superior docks during August totaled 20,778 cars against 14,693 cars during July and 18,589 cars during the same period last year. The total for the year to Aug. 31 was 130,685 cars, against 133,493 cars in the same period in 1924. From present indications the movement this month will exceed the August figures.

Forty-one cargoes of coal, including three of anthracite, arrived at the docks last week. This compares with twenty-nine cargoes, including only one of anthracite unloaded in the preceding week. Ten cargoes, all bituminous, were en route.

Anthracite receipts at the head of the Lakes in August were 51,636 tons against 139,292 tons in July. Total hard-coal receipts for the season to Sept. 1 were 728,245 tons, a falling off of 212,000 tons as compared with last year. Bituminous receipts last month were 1,243,653 tons, against 1,362,574 tons during July. That brought the bituminous receipts for the season to Sept. 1 up to 5,477,764 tons, an increase of 1,467,321 tons as compared with the same period last year.

The Milwaukee market is somewhat spasmodic. Dock managers report a slowing of demand as compared with that of last week but retailers say business is brisk, with greater interest in anthracite than for some time past. The price of Pocahontas has been advanced $1. Egg retails at $12.25 shoveled and $13 carried to bins, and nut at $11.75 and $12.50, respectively. Coke advanced 60c. a ton Sept. 10. Stove and nut now retail for $13, and pea at $10. Receipts by cargo continue steady. Receipts for September, to the 10th, total 125,300 tons—5,300 tons of anthracite and 120,000 tons of bituminous coal.

## Demand Steady in Southwest

In the Southwest there is a steady demand for domestic sizes, which is easily supplied from Kansas mines, and those operators whose Arkansas mines are producing report little difficulty in filling orders from that field. Oklahoma deliveries, however, are a little slow, due to labor difficulties in that field, but production is sufficient to prevent any pronounced shortage. The industrial demand has kept pace with domestic, hence coal from all mines is being moved as fast as it is mined.

In the Colorado market last week there was no change in the demand for domestic coal from the preceding week. if anything, there was a slight recession in orders in the last two days. Operations at Colorado anthracite mines have taken such a substantial jump that they are working to a full capacity. All mines are operating without any interruption through labor or transportation difficulties.

There is more coal business in the Utah market than there was, due largely, no doubt, to the fact that fall weather is nearly a month ahead of normal. Prices are unchanged and the business generally seems to be steadier than it has been for a long time. Labor conditions are excellent, and so far no serious car shortage has been felt.

Ten of the largest operating companies with headquarters in Salt Lake City are urging the public through newspaper "ads" to purchase winter coal now, statements by railroad officials being quoted on the probability of a car shortage on account of the unusually heavy crops.

### Activity at Cincinnati Shatters Records

From Cincinnati it is reported that production south of the Ohio River, as measured by the report of the American Railway Association from its car service division, has shattered every record that has stood in the past. J. A. Morris, manager for the Cincinnati district, reports that 16,691 loads of coal were moved last week. Normal used to be 4,000 to 5,000 loads a week and around 9,000 loads was the peak of the war-time movement. The week's movement was 421 cars in excess of the preceding week and of this 3,394 cars were destined for the lakes for transshipment, the latter being 41 cars in excess of the preceding week.

This in itself pretty well tells the story of the quasi-stability of prices. High volatile has advanced very little because of the pressure that has been brought to bear for business. Retailers are firing in their orders and the movement seems without end. Only coals of limited production are skyrocketing. The low volatiles and especially those smokeless types that are counted as standard have reached the $5 mark and passed it. Most of the direct selling agencies for Pocahontas are pricing their product for immediate delivery at $5.25 and some brokers are asking $5.50 for car numbers. Some, too, say that they cannot furnish lump but hold egg at $5.25, the larger size having been sold up for the month. Stove and nut have advanced to $3.75 and smokeless screenings are held firm at $2. Most of the mine-run is at $2.50 with some of the producers asking $2.75.

In the high-volatile list the sailing has been a little different. There came a lull toward the middle of the month that caused some cautious wholesalers and producers in southeastern Kentucky and in southern West Virginia to go slowly. Hazard block is being sold generally around $2.75, some Harlan is priced as high as $3 and some Elkhorn as high as $3.25. But only the fancy Elkhorns can bring that figure and there is a greater tonnage moving $2.75@$3 than at the asked price. In West Virginia an arbitrary price fixed by one of the larger producers at $2.50 a ton holds most of the better grades down around $2.75 with $3 as an outside price. Egg sizings, generally speaking, are on a $2.25 basis, though some may go a little higher and some a little lower, not more than 10c. or 15c. either way. Mine-run generally has steadied to a higher level, but slack from both states is more free and easy at $1.15@$1.25.

At retail there has been little change from $9 a ton for the smokeless prepared $6.50 for mine-run, $6@$6.50 for bituminous lump and $4@$4.50 for slack.

Because of extreme hot weather there was a noticeable let-up in the demand for domestic grades in the Columbus market last week. Retailers are fairly busy, however, on deliveries on orders booked several weeks ago. The bulk of the demand is for smokeless, splints and Kentucky varieties. Hocking and Pomeroy lump is selling better, however, and a general movement of domestic sizes is expected soon. Retailers have advanced prices to the public. Smokeless now sells at $8.25@$9; splints, $7@$7.50 and even higher, and Ohio-mined lump at $6.25@$6.75.

Steam business has not changed materially during the past week. Contracting is not brisk, although a few sizable contracts have been closed. Screenings are selling fairly well but no advance in prices have been made. There is a sufficient supply of small sizes to take care of the demand, owing to increased production of lump.

Production in Ohio fields is gradually increasing as more mines are being opened after months of idleness. Output in the southern Ohio field is estimated at 40 per cent of capacity. Some stripping mines are being opened, which will increase the total.

The flurry in the eastern Ohio coal market, growing out of the anthracite strike subsided rather suddenly during the past few days and spot prices all along the line weakened in consequence. Pocahontas and other domestic fuels from West Virginia and eastern Kentucky have dropped 50c. to 75c. per ton, with extremely warm weather prevailing and retail dealers pretty well loaded up. Steam inquiries, though better in tone than a month ago, also have dropped off considerably and fears as to fuel supply have been allayed

Output in the eastern Ohio No. 8 field during week ended Sept. 5 dropped 1,000 tons from that of the preceding week to 266,000 tons, or about 38 per cent of potential capacity. This field has produced in the calendar year to Sept. 5 8,379,000 tons, or about 35 per cent of capacity, as compared with around 42 per cent for the same period a year ago.

### Broader Market at Pittsburgh

The Pittsburgh market has broadened somewhat further, in general, with a fair increase in consumption, a considerable movement in domestic coal and a continuance of moderate stocking. Shipments of lump, including domestic, are larger, and $2 is obtained on egg, with steam slack a shade higher and mine-run $2@$2.15. Outside of the advance in steam mine-run and a 5c. rise in steam slack, to a range of $1.35@$1.40, there is no change in quotable prices, but prices continue to show a firming tendency.

Demand for bituminous coal in the central Pennsylvania district is steadily increasing and some advance in prices is noted as compared with Sept. 1. Some of the larger buyers who have been depending upon the spot market are now trying to close contracts to cover their needs until April 1, 1926. Contract prices have not been made public but spot prices are as follows: Pools 11 and 18, $1.75@$1.80; pool 10, $1.85@$2; pool 9, $2.15@$2.30; pool 71, $2.35@$2.45; pool 1, $2.50@$2.75. Loadings show a substantial gain over those of August.

It looks as if there would be some stir in soft coal in the Buffalo market before many days, but the local trade refuses to admit that there is any yet. Consumers have good stocks as a rule and refuse so far to take any stock in higher prices. Consumption seems to keep up well and the export trade is good, but not rushing. In smokeless coal and coke there is some advance, but that is mostly in the house consumption trade. Bituminous quotations, with some advances here and there, especially for slack, are $1.60@$1.75 for Fairmount lump, $1.40@$1.50 for mine-run and $1.25@$1.40 for slack; $2.25@$2.50 for Youghioheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, and $1.30@$1.60 for slack; $1.75 to $2 for Allegheny Valley mine run; Cambria County smokeless, $6 at curb.

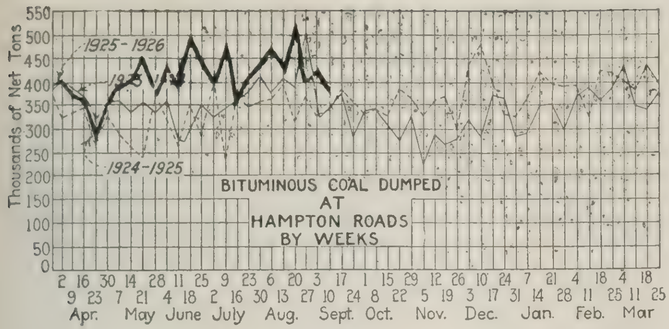
### New England Busy with Small-Lot Orders

In New England the market is still holding at high figures. Buying is reasonably active, but for the most part the tonnages are small and but few of the larger consumers are represented. Among purchasing agents there is a feeling that the bidding up of prices is being overdone and that quotations will ease off after a fortnight or so. The trade keeps whistling and points to the volume going west and the high prices obtained in that market.

At Hampton Roads there has been no material increase in the amount of coal dumped; in fact on some days certain of the agencies find themselves short. No. 1 Navy standard Pocahontas and New River are now quoted up to $5.50 per gross ton f.o.b. vessel, with indications that the shippers will try for a still higher level. More than a few contract customers in this territory are beginning to grumble over slow shipments; in some cases retail dealers are way behind the quotas they were hoping to receive.

On cars Boston and Providence the current level is $6.25@$6.50 and some of the smaller factors have none to sell even at these prices.

Pennsylvania steam coals all-rail are beginning to respond to slightly improved demand. The quality grades especially are being quoted at higher prices. Prepared sizes are very active.



## New York Market Maintains Strength

The bituminous coal market at New York continues to show strength, though demand and quotations are at last week's level. Consumers fail to show any anxiety because of the anthracite strike, but are protecting themselves against any possible shortage of coal. Anthracite has not yet become scarce enough to create any demand for screened bituminous but buying of coke has shown strength. Better business is expected during the balance of the year due to seasonal buying rather than to any other factor.

The Philadelphia market seems in a fair way to keep on improving. Probably the general business outlook has had as much to do with this as the anthracite strike. Prices have strengthened further during the last week. Handlers of highest grade special coals have had no trouble in adding something and getting it, although other shippers who have tried the same plan have not altogether succeeded. Contracting is a past issue for the present, as no one is particularly on the lookout for this kind of business, except on particularly large tonnage, which no one would pass by.

Concerns in a position to screen coal have been more active than ever, and it is a long while since so great a variety of sized coal has been offered on this market, but so far there have been practically no sales of sized bituminous coal. The coke people have fared slightly better.

The upward trend of the bituminous market at Baltimore, which was quite marked for the opening week in September, was not continued during the second week. Inquiry was of only a moderate character and prices for the most part were just maintained, and in some cases were shaded a bit. The export situation continues draggy.

Market conditions at Birmingham are better than at any previous time this year taken as a whole, and production is being maintained on a high weekly basis for this season. The output for the week of Aug. 29th., the last official figures available, showed that Alabama mines produced 405,000 net tons, which would be increased to some extent by the small operations which never report to the Alabama Mining Institute.

Steam coal is being bought fairly well in the open market, these bookings taken together with contract shipments affording the mines as now operating sufficient business to move the output very promptly. Demand continues especially strong for high-grade washed coal, of which, at times, there is a temporary scarcity. This is due to some extent to the condition of the domestic market, in which demand is not yet sufficient to readily move domestic fuel produced along with the steam product, necessarily limiting the supply of steam coal to some extent and accentuating the demand for the latter. Bunker trade is still in an inactive state.

Buying of domestic coal still lags, movement against contracts being restricted to an extent which throws more surplus on the spot market than can be readily absorbed, though there is some improvement in booking small orders and a little coal being taken on by contract holders.

Quotations are strongly established, it would seem, against any further reductions through the remainder of the year, with indications of stiffening further on some grades.

## Strike Fails to Fluster Hard Coal Trade

Although the anthracite strike has been in progress more than two weeks, comparatively little interest, much less excitement, has been shown by New York house owners, as about 70 per cent of next winter's coal supply is in bins. Retailers for the most part are apportioning supplies among regular customers and deliveries are not promised inside of two weeks. Retail prices range all the way from about $14.50 to $15.90, according to borough.

Quotations for domestic sizes at wholesale vary, depending upon the seller and buyer. There is considerable coal in bottoms, much of it owned by retailers. Very little fresh mined coal is coming forward, unless it is already sold. The old line companies are taking care of regular customers as best they can, but most independents have no coal to sell.

Quotations for coal in bottoms are reported ranging from $15 to $16.25 alongside, according to size, but the sales at the latter figure were doubtful. Fresh mined coals were reported as quoted at from $12.50 for chestnut to $14 for stove and egg, and $11 for stock chestnut. Rice and barley are reported as "out of the market" with No. 1 buckwheat quoted at $2.50@$3.

So far as shipments are concerned the Philadelphia market is about done except for pea, buckwheat and rice. All of the larger sizes held by the companies in storage yards have been disposed of, except chestnut, and all of it has been taken up by orders.

Pea is fairly plentiful with company shippers, but it would be no surprise to see it all ordered up within the next two weeks or ten days.

One of the company shippers has increased the price of storage rice coal 25c. a ton allowing buckwheat to stand at the old figures of $2.50. Barley is out of the market, as storage stocks have been cleaned up. Ordering for the two remaining steam sizes is very heavy, but the amount in storage will last for a couple of months yet. At this time it looks as if the suspension would be a long one.

The hard-coal situation in Balitmore shows but little change except that some of the dealers are beginning to cut heavily into their stocks and few of them are receiving shipments on delayed movement. Some have fairly liberal supplies and a few others may be classed as well stocked. Despite the strike the consuming public shows no disposition to hurry their orders. Although wholesale prices have advanced, the fact that little coal is coming in has led the local dealers to continue the August price schedule.

The anthracite trade at Buffalo is mostly at a standstill and will remain so till the miners go to work again. Next to no coal is coming here, but consumers are not greatly disturbed. Demand is not large, but it would be if a moderate supply of coal was coming in. Dealers say that they will supply all the pea or buckwheat that is demanded, but the consumer is in no hurry to get that. Prices are expected to remain where they are. Lake shipments last week comprised 4,500 tons to Sheboygan and 7,000 tons (pea) to Milwaukee. No more is expected to go till the strike is over.

## Light Buying in Connellsville Coke Market

The furnace coke market at Connellsville turned quiet again in the past week. Except for a little buying by blast furnaces at intervals, the market has been made by purchases by Eastern buyers, largely the public service corporations making water gas. While there is much talk of buying by others it has not run into such tonnage as did the purchases last month of water-gas makers, for deliveries over 30 or 60 days. The market is quotable at $3.50@$3.75 on the basis of recent sales, but asking prices are $3.75@$4, and probably no considerable tonnage could be had at under $4. Accordingly the gas producers will now hold off.

Blast furnaces show practically no interest. Those dependent on purchased coke are, with perhaps one or two exceptions, covered to the end of the year, if they are running, and those not running have no incentive to blow in, as pig-iron demand continues dull.

Spot foundry coke continues in light demand and remains quotable at $4@$4.50, following the recent 25c. advance from a level that had held for nearly four months.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Aug. 29, 1925 | 1,124,436 | 211,683 |
| Previous week | 1,080,107 | 201,095 |
| Week ended Aug. 30, 1924 | 1,020,809 | 169,110 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Aug. 31, 1925 | 162,397 | 40,427 | ........ | ......... |
| Aug. 22, 1925 | 195,327 | 53,755 | ........ | ......... |
| Aug. 31, 1924 | 231,677 | 111,254 | 274 | ......... |

# Foreign Market And Export News

## Coal Stocks Heavy, Business Light, In British Market

No improvement is discernible in the state of the Welsh steam coal trade, but colliery owners are hopeful that there will be some recovery in business before the end of September. Welsh coal prices are still relatively high as compared with other coals, especially German, but in view of its superior quality it is hoped that Welsh Admiralty will again win the favored position it formerly held and command prices some shillings above those of competing coals.

Though the position is not very favorable so far, this was anticipated because of the large stocks established and the fact that orders had been diverted elsewhere, some time being necessary to bring about normal working conditions. August exports have been little more than half those of August, 1923. Many collieries are engaged only half time. Stocks are enormous and very few pits are able to avoid temporary stoppages.

There is a slight improvement in the Newcastle coal trade. The prevailing low range of prices and hesitancy on the part of producers to make further concessions have had some influence in stimulating inquiries from abroad. Actual orders are slow to materialize, but foreign buyers are more disposed to sound the market, and so meanwhile steam coal turns for prompt loading has filled orders nearly a week ahead. It is therefore hoped that September will bring in a large trade. Contract business shows more life.

Production by British coal mines during the week ended Aug. 29 totaled 4,085,060 tons, according to a special cable to *Coal Age*. This compares with an output of 4,425,000 tons in the preceding week.

### Inquiry and Movement Gaining At Hampton Roads

Demand at Hampton Roads last week showed an increase, but it was not sufficient to cause any great advance in prices. Inquiries were heavier, and movement was on the upgrade.

As a result of recent improvement in prices many mines serving this territory that had been idle for months were reported in operation, and some mines that were operating three days a week for many months were on a full-time schedule.

Supplies at tidewater showed a slight increase over the previous week, and movement over the piers was slightly less. Shipments to Canada were decreasing and movement to European ports was scattered.

### French Market Shows Seasonal Pick-up in Domestic Demand

In the French coal market the demand for coal from mines of the Nord and Pas-de-Calais is increasing sufficiently this month to avoid stockage.

The usual seasonal revival in demand for home fuels in September has already become manifest. Screened coals are less neglected and orders from Belgium are more important than usual.

With regard to industrial grades the recent volume of orders has, in general, been maintained and in the sugar making industry fuel purchases are about normal.

Paris coal retailers were disagreeably surprised by the increase of "octroi" dues (city toll tax), not so much because of the advance in itself as by the fact that it was applied with scarcely any warning.

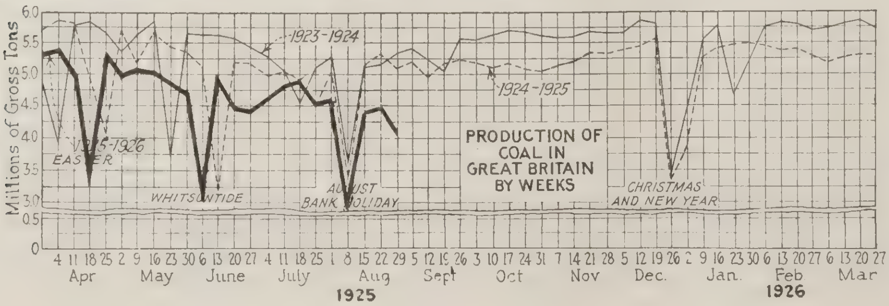
There is now a sufficiency of railway trucks, but river craft remain scarce and freight rates are increasing, the tariff from Béthune to Paris now being 25 fr.

### Belgian Industrial Coals Weak; Domestic Grades Better

Business in industrial coals has been poor in the Belgian market. British competition seems less active, however, prices of British coal being still too high. On the French side competition is also less marked, but in the face of the very light demand these two factors have had no great effect.

All categories of industrial grades have had a poor and uncertain market, with prices on the downward grade. As to stocks, they are tremendous and a number of collieries in the Borinage are at a loss where to deposit the smalls that they cannot sell.

The market for home fuels, on the other hand, is quite satisfactory and the anthracite grades are in particular favor.



### Export Clearances, Week Ended Sept. 12, 1925

| FROM HAMPTON ROADS | Tons |
|---|---|
| For Canada: | |
| Ital. Str. Labor, for Quebec | 5,894 |
| For Prince Edward Island: | |
| Br. Schr. Avon Queen, for Charlottetown | 1,368 |
| For Cuba: | |
| Br. Str. Berwindmoor, for Havana | 8,977 |
| For Egypt: | |
| Br. Str. City of Glasgow, for Port Said | 520 |
| For Argentina: | |
| Br. Str. Maindy Court, for Puerto La Plata | 5,600 |
| For Italy: | |
| Ital. Str. Adige, for Porto Ferrajo | 9,619 |
| For Brazil: | |
| Br. Str. Antar, for Rio de Janeiro | 9.105 |
| Br. Str. Alnmoor, for Rio de Janeiro | 8,974 |
| For Porto Rico: | |
| Amer. Str. Choctaw, for San Juan | 2,415 |
| For Jamaica: | |
| Dan. Str. Phonix, for Kingston | 2,189 |
| For Peru: | |
| Br. Str. Crosshill, for Callao | 3,504 |
| FROM PHILADELPHIA | |
| For Cuba: | |
| Ital. S.S. Oceania, for Havana | —— |
| For Porto Rico: | |
| Am. Schr. DeWitt Brown, for Yabucoa | —— |
| FROM BALTIMORE | |
| For France: | |
| Fr. Str. Wesserling, for Marseilles | 6,586 |
| For Cuba: | |
| Am. Schr. Bradford E. Jones, for Manopla | 2,052 |

### Hampton Roads Pier Situation

(Gross Tons)

| N. & W. Piers, Lamberts Pt.: | Sept. 3 | Sept. 10 |
|---|---|---|
| Cars on hand | 1,181 | 1,582 |
| Tons on hand | 69,586 | 98,076 |
| Tons dumped for week | 147,577 | 126,043 |
| Tonnage waiting | 5,000 | 15,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 514 | 676 |
| Tons on hand | 40,550 | 52,650 |
| Tons dumped for week | 102,973 | 75,584 |
| Tonnage waiting | 10,600 | 927 |
| C. & O. Piers, Newport News. | | |
| Cars on hand | 1,969 | 1,890 |
| Tons on hand | 95,315 | 96,210 |
| Tons dumped for week | 125,871 | 140,279 |
| Tonnage waiting | 25,530 | 5,730 |

### Pier and Bunker Prices, Gross Tons

| PIERS | Sept. 5 | Sept. 12* |
|---|---|---|
| Pool 1, New York | $5.35@$5.60 | $5.35@$5.60 |
| Pool 9, New York | 4.80@ 5.00 | 4.80@ 5.00 |
| Pool 10, New York | 4.50@ 4.70 | 4.50@ 4.70 |
| Pool 11, New York | 4.30@ 4.55 | 4.30@ 4.55 |
| Pool 9, Philadelphia | 4.80@ 5.00 | **4.85@ 5.05** |
| Pool 10, Philadelphia | 4.50@ 4.70 | **4.55@ 4.75** |
| Pool 11, Philadelphia | 4.30@ 4.55 | **4.35@ 4.55** |
| Pool 1, Hamp. Roads. | 5.40 | 5.40 |
| Pool 2, Hamp. Roads. | 5.15 | **5.20** |
| Pools 5-6-7, Hamp. Rds. | 4.50 | **4.75@ 5.00** |
| BUNKERS | | |
| Pool 1, New York | $5.60@$5.85 | $5.60@$5.85 |
| Pool 9, New York | 5.05@ 5.25 | 5.05@ 5.25 |
| Pool 10, New York | 4.75@ 4.95 | 4.75@ 4.95 |
| Pool 11, New York | 4.55@ 4.80 | 4.55@ 4.80 |
| Pool 9, Philadelphia | 5.00@ 5.20 | **5.05@ 5.25** |
| Pool 10, Philadelphia | 4.70@ 4.85 | **4.75@ 4.85** |
| Pool 11, Philadelphia | 4.55@ 4.75 | **4.60@ 4.75** |
| Pool 1, Hamp. Roads. | 5.50 | 5.50 |
| Pool 2, Hamp. Roads. | 5.25 | **5.30** |
| Pools 5-6-7, Hamp. Rds. | 4.50 | **4.75@ 5.00** |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Sept. 5 | Sept. 12 |
|---|---|---|
| Admiralty, large | 24s. | **24s.@25s.** |
| Steam smalls | 12s.6d. | *11s.6d.@12s.* |
| Newcastle: | | |
| Best steams | 14s.9d.@15s.6d. | *15s.* |
| Best gas | 17s. | **17s.6d** |
| Best bunkers | 15s. | 15s. |

*Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

The Alabama By-Products Corporation has completed the electrification of its Wegra Mine and installed electric locomotives and mining machines. Similar improvements are under way at other operations of the corporation.

## COLORADO

The International Fuel Co., of Denver, has been sold to Arthur Ponsford, Denver attorney, said to be representing coal operators of Rock Springs, Wyo., for $71,297. Ponsford's first bid of $50,000 was raised to the final figure later and approved by the bondholders' representatives. The purchase included 400 acres of coal land in Routt County, the property of the International.

The Red Canon mine, Delta, is running again, in compliance with the new state regulations.

Development work has begun on the Fort Lewis (Colo.) coal lands of the Pacific Steel Co. Preparations are already under way for the erection of a shaft house, and work on the shaft itself will be commenced at once. The shaft will be 4 x 6 ft. and unless water is encountered, it is estimated that the first 100 ft. can be sunk in about 90 days. The work will be done by hand, using a windlass and buckets. R. A. Gifford will have charge of the work for the Pacific Steel Co.

## IDAHO

V. Hufford, of the Superior Coal Mining Co., reported recently that his company would be loading coal early this month from its mine twelve and one-half miles west of Driggs. The company has 14 beds ranging from 6 to 15 ft. in thickness.

## ILLINOIS

The Forsyth Coal Co., owner and operator of the new strip mine at Ward, twelve miles south of Duquoin, started operations on a large scale the second week in September. The company owns approximately 700 acres of valuable coal land, the vein averaging 8 ft. thick about 17 ft. under the surface. The property is completely electrified, the equipment including one of the largest electric stripping shovels in operation, costing $125,000, as well as two smaller shovels for loading purposes.

Representatives of the Illinois Steel Co. and the Brereton Coal Mining Co., Brereton, have been inspecting the workings of the Jackson Coal Co. at Hallidaysboro with a view of purchase. The latter property recently went into the hands of trustees for its bondholders. The mine has been operated for about eighty-three years. Originally it was owned by the Hallidays, of Cairo, but later became the property of the Jackson Coal Co. The company holds 6,200 acres, of which only one thousand has been mined.

Fire believed to have been of incendiary origin destroyed the tipple of the Consolidated Coal Co.'s Meadow Brook mine Aug. 30. Employees told authorities three men fled from the tipple a short time before the fire broke out. The loss is estimated at $35,000. The mine has been idle for some time.

Edward H. Hebenstreit, formerly of Nokomis, who was identified with the coal mining industry in central and southern Illinois for several years, has accepted a position as superintendent of the mine of the Nason Coal Co., at Nason.

## INDIANA

Fifteen hundred coal miners employed in seven bituminous coal mines in the Clinton section refused to go to the mines Sept. 4 in protest against an increase by the Clinton & Eastern Indiana R.R. in the cost of their transportation from their homes to the mines. Monthly train tickets to the miners, formerly sold for $1.10, were raised in price to $2.50. The increase was authorized by the Indiana Public Service Commission.

## IOWA

The Sheriff mine, one mile south of Lovilia, which was formerly owned by the Sheriff Mining Co., was sold recently to Rosenbaum & Co., Centerville, who in turn disposed of the mine to a group of men of Lovilia, who have organized a new corporation known as the Lovilia Coal Co. The mine will operate on a larger scale this winter than last year.

## KENTUCKY

Contract was let the first part of September by the Imperial Elkhorn Coal Co., Sergent, for the erection of a clubhouse.

Effective Sept. 1, C. R. Bourland, of Stone, was promoted to the position of chief engineer of the Fordson Coal Co., succeeding S. E. Puckette, who is now engineer in charge of the undeveloped Peabody acreage of Fordson company in Clay and Leslie counties.

## MASSACHUSETTS

More anthracite was moved into New England in August than in any other month since records of such receipts were first compiled, in 1916. Total rail and tidewater receipts are estimated at 1,150,000 net tons, or more than 25 per cent in excess of the 913,500 net tons received in August, 1924. The highest previous mark was 1,110,000 tons in July this year. The figure for June was 921,000; May, 953,000, and April, 756,000 tons.

Leaving Port Talbot, Wales, the day following the settlement of the British coal strike, the British steamer Pacific arrived at Boston, Sept. 8, with over 4,200 tons of Welsh anthracite, which was unloaded at the Metropolitan Coal Co.'s terminal in Chelsea. Captain Beveridge said that there were two other steamers loading when he left, which were destined for North Atlantic ports, and that it was the opinion generally through the Welsh coal trade that a considerable quantity of coal would be exported hither during the strike in this country.

Transportation facilities are available to bring 2,000,000 tons of low-volatile bituminous coal to Massachusetts during the next seven months in the event that suspension of operations in the anthracite region continues, according to C. A. Rice, of the Bureau of Service of the Interstate Commerce Commission. This statement was made in answer to a telegraphic inquiry addressed to Chairman Aitchison of the commission, by Governor Fuller of Massachusetts.

Governor A. T. Fuller of Massachusetts on Sept. 9 named Eugene C. Hultmann, chairman of the Commission on the Necessaries of life, and the other two members of the commission, Charles H. Adams and William A. Kneeland, emergency fuel administrators. The administrators will be vested with war-time powers with regard to the sale and distribution of fuel for the duration of the anthracite strike.

## MISSOURI

In conjunction with the "Burn Missouri Coal" drive launched by the State Bureau of Labor recently, Roy B. Hinkle, State Labor Commissioner, held a conference in Kansas City, Sept. 9, to stimulate the Missouri coal industry.

**A Natural Bridge in the Coal Country of Southern Kentucky**

The arch has a clear span of about 70 ft. and in the narrowest place measures 32 ft. across the top. This bridge is on Rock Creek near Oz, a village on a rural mail route from Yamacraw.

Miners, mine operators and representatives of civic and commercial organizations in the state's various mining districts attended. A recent survey indicated that Missouri coal is not being used very extensively. Hinkle says that this is due to the fact that the people of the state do not know that Missouri has high-grade coal deposits, comparing favorably with those of southern Illinois and other soft-coal states.

Fire which originated from hot cinders taken from the airshaft of the Smarr and Richards coal mine, three miles northeast of Columbia, destroyed all equipment at the mine recently. The damage is estimated at approximately $1,000.

## NEW YORK

W. A. Reed, sales agent of the Philadelphia & Reading Coal & Iron Co. in Buffalo territory, was struck by an automobile on Sept. 4, while crossing a street afoot. He was injured about the head and body, but will be able to return to business in a few days.

J. Lee Hornor, of Clarksburg, coal operator, has established an agency in Buffalo with the Ford - Southward Coal Co.

J. N. Robinson, for some time connected with the Buffalo coal trade, has opened an office under the name of the Niagara Fuel Co., at 762 Bramson Building.

## OHIO

The Wayne Coal Co., of Pittsburgh, owning two stripping operations in Perry County, resumed work Sept. 10 at one of the mines after an idleness of about seven months. In all, 100 men were given employment.

The Black Diamond mine of the Maher Collieries Co., at Neffs, resumed operation Sept. 2 after a shutdown extending from April. Two hundred men are employed. The Maher Collieries Co. now has three of its larger mines in operation, the other two being at Stewartsville and Willow Grove.

Clarence Pierce and Lewis Russell, arrested several weeks ago for complicity in the burning of the tipple at the Blackstone mine, Pomeroy, and other depredations, have been released from custody. An investigation failed to show that the two men were connected with the burning. Both were miners employed at the Blackstone mine.

Directors of M. A. Hanna Co. have suspended dividend payments on the company's first preferred stock. A quarterly dividend of 1¾ per cent was due to be declared at this time. About three months ago the directors suspended dividends on the second preferred stock. For the three months ended June 30 the company reports operating income of $259,367, against an operating loss of $102,687 reported in the March quarter. After allowing for all charges, including reserves for interest, depreciation and federal taxes, a deficit of $101,880 was reported for the June quarter, against a deficit of $413,647 after similar deductions reported in the March quarter. For the first half of 1925 net operating income amounted to $156,680, against $378,091 in the first half of 1924. After similar deductions, the deficit for the half-year period aggregated $515,627, against a deficit of $458,376 reported in the first six months of 1924.

The Broscalasa mine, at Syracuse, near Pomeroy, has resumed work under the Jacksonville scale with about 30 men. The mine was opened to supply fuel for two salt mines operated by the same company.

A petition in voluntary bankruptcy was filed, Aug. 24, in federal court, by the Buckhorn Collieries Co., Cleveland, through its president, W. G. Walters. Liabilities were placed at $348,184 and assets at $327,797. The company operates in Tuscarawas and Guernsey counties.

## PENNSYLVANIA

K. M. Coolbaugh, superintendent of the Philadelphia employment office of the State Employment Bureau, has been assigned by Richard H. Lansburgh, Secretary of Labor and Industry, to make an immediate investigation of employment conditions in the anthracite area in industries other than coal as a result of the anthracite miners' strike. "Mr. Coolbaugh is the senior superintendent of the department," said Secretary Lansburgh, "and is especially qualified to advise as to ways in which the employment bureau of the department may be of service to those who are temporarily out of employment in other industries because of the strike in the mining industry."

The Pennsylvania Coal & Coke Co. reports a deficit of $55,000 for the month of July, against a deficit of $47,000 in July, 1924. In the first seven months of the year the deficit was $405,041, after all charges, compared with a deficit of $188,000 in the same period last year.

## TENNESSEE

The Cumberland Coal & Iron Co., 149 Broadway, New York, of which A. M. Wickwire is president, is reported to be planning reopening its coal mines in Dayton, and will carry out an expansion plan.

O. P. Pile, Chief Mine Inspector, and the Board of Mine Foreman Examiners will hold an examination for mine foremen in the Federal Building at Knoxville, Oct. 1 and 2.

## VIRGINIA

J. H. Dimling, for many years in charge of the steamship department of the Raleigh Smokeless Fuel Co., at Norfolk, has resigned to become vice-president and treasurer of the Tidewater Coal Inspection Bureau in charge of the steamship and custom house department. He has been succeeded in the coal business by J. M. Miller, who has served in another capacity with the company for several years.

## WASHINGTON

Suit for $37,507 damages for alleged violation of lease charges was filed in Superior Court at Seattle Sept. 3 by the Birdseye Coal Co. against the Klangley Coal & Clay Co. The plaintiff company seeks recovery of the sum in connection with coal lands leased from the defendant in 1924 in section 28, township 22 north, and range 7 east, King County. The Klangley company is charged with breaking its contract with the plaintiff in order to obtain a "higher royalty" and "to cheat and defraud" the lessee. According to the complaint, the Birdseye company, after leasing the land, spent $12,507 in buildings, roads and equipment preparatory to mining coal for the present season.

## WEST VIRGINIA

Coal mines in the 12 counties of northern West Virginia produced 522,500 net tons of coal in the week ended

Sept. 5, compared to 555,550 net tons the previous week. In the same week 190 coal mines out of 364 worked daily on the average. In the 10 weeks preceding Sept. 5 the mines of northern West Virginia produced 4,841,900 net tons, an average of 484,190 tons a week. The peak tonnage was reached in the week ended Aug. 29.

James Elwood Jones, of Switchback, McDowell County, coal operator, was the largest income tax payer in West Virginia in 1924, according to newspaper reports, at $96,160.33. William McKell, of Glen Jean, another operator, paid $43,160.33. M. L. Hutchinson, of Fairmont, president of the Hutchinson Coal Co., paid $20,676.35; Clyde Hutchinson, of Fairmont, vice-president of the Hutchinson Coal Co., paid $10,835.12; Sprigg D. Camden, of Parkersburg, of the Monongah Co., which represents the Camden heirs in royalties paid by the Consolidation Coal Co. on coal land between Fairmont and Clarksburg, paid $10,296.96.

The West Virginia Department of Mines failed to observe first-aid day at Wheeling incident to the state fair last week. The Bethlehem Mines Corporation planned to send a team to compete, but learned early in the week that the annual first-aid contests would not be held.

A number of coal companies in northern West Virginia will observe Fire Prevention Week, Oct. 4 to 10. The Consolidation Coal Co., it is reported, will observe the special occasion.

In an effort to kill the shipment of reconsignment coal to Portsmouth scales—which is merely the shipping of coal from the mines before it is ordered in the hope that some customer will come along—the Norfolk & Western Ry. announces that after Sept. 15 coal loads will have only 24 hours at Portsmonth, Ohio, for rebilling, and after that will draw down regular demurrage charges.

The New River Co., which operates 15 mines in West Virginia, now employs a general director of safety. Arch Forbes, formerly superintendent of the Cranberry No. 1 mine, is filling the new position. Mr. Forbes had considerable experience in first aid and mine rescue work before going with the New River Co. as superintendent of the Cranberry mine.

W. H. Forbes, of the U. S. Bureau of Mines, Huntington, reports that there are now 33 mines of the state on 100 per cent first aid training, and that it is expected that there will be a total of 55 in this class by the end of the fiscal year, June, 1926.

The Eagle mine of the Clark Coal & Coke Co., near Hepzibah, which is working on the American plan, claims a record in that it worked 309 days in one year. The non-union miners loaded 5,007 steel hoppers in the year, mining 280,552 tons of coal.

The Stover Coal Co., at South Nuttallburg, Fayette County, on the main line of the Chesapeake & Ohio Ry., will resume operations at once, having been closed down since the first of last April. Holly Stover, of Chicago, well known merchandiser of West Virginia smokeless coals, is president of the company. The output of the mine will run 500 tons per day and the company will employ about 200 men.

The New Cumberland Coal Co. property of 360 acres in Brooke County was sold on Aug. 26 to the United States Annuity Co., of Pittsburgh, for $25,000.

Preparations are being made by the Stonega Coal & Coke Co. to open its No. 6 mine, at Eccles, and to employ 125 men at that place. The Eccles mine has been closed for about six months. Other mines in Fayette county are employing more men and operating on a more extensive scale.

J. T. Dunigan, vice-president and general manager of the Coal River Collieries Co., of Huntington, has presented a plan to the Huntington Coal Exchange for a permanent coal exhibition for the demonstration of coal values and also for coal burning equipment. A committee of the exchange has been designated to work out the details.

**"The Grand Army of the Republic"**

Few sights are more inspiring than a parade of school children. The above could hardly be termed a parade, but is rather a formation. Even at the coal mines—this is the white school at the Edgewater (Ala.) Mine of the Tennessee Coal, Iron & R.R. Co.—the younger generation is given every opportunity to develop mentally. More and more in this country ignorance in an adult is coming to be regarded as something closely akin to a positive crime.

The Consolidation Coal Co. has decided to close for the time being at least its Mine No. 37, at Berryburg, W. Va., after operating 25 years. The various mine structures are being dismantled and the steel is being shipped to other operations. The long haul to the present tipple made it impracticable to operate the mine under existing high cost of mining and the low price of coal. The company has available for mining in the Berryburg section about 10,000 acres of coal in the Pittsburgh seam. It is understood that the property will be worked from three different openings, one of which will be on the Bear Mountain road, the product moving by way of Flemington, and another in all probability will be on Brushy Fork. At one time 600 men were employed at the mine and it loaded as many as 66 railroad cars a day.

Twenty-five non-union coal miners joined the United Mine Workers at a recent meeting held at Kilarm, according to officials of the union.

Ground will soon be broken for the development of a third mine of the New England Fuel & Transportation Co. near the Arnettsville hill in Monongalia County, according to newspaper reports. The project, which, it is reported, will be the third largest producing mine in the country, was planned more than four years ago, but no work was started on it previously. Officials at Grant Town, where Federal No. 1 is located, decline to comment on the project.

The Consolidation Coal Co. resumed operation at mine No. 97, at the Rivesville power plant of the Monongahela West Penn Public Service Co., recently. This was the last mine that the company had worked union and paid the 1924 wage scale, which it signed with the United Mine Workers following the Baltimore conference.

By Oct. 15 the Pond Creek Pocahontas Coal Co., at Bartley, McDowell County, will have completed an extensive improvement and development program. The company recently completed a big modern steel tipple and now has under construction 300 additional homes for miners, all modern and well equipped. The Pond Creek Pocahontas company is a subsidiary of the Island Creek Coal Co.

Judge I. Grant Lazelle, of the Circuit Court of Monongalia County, W. Va., issued a temporary injunction on Aug. 29 restraining the Connellsville By-Product Coal Co. and the Cochran Coal & Coke Co. from mining coal in the Pittsburgh seam under the main headway of the Sewickley seam of the Continental Coal & Coke Co.'s Liberty mine on Scott's Run. The plaintiff company in presenting its case contended that the property and lives of workmen were endangered by the mining of coal beneath the main entrance of its operation. A bill was introduced at the last session of the West Virginia Legislature to protect overlying and underlying seams. The bill, however, was never reported from committee so it is probable that there will be continued litigation where operations are undertaken by different companies in two different seams, one beneath the other.

## WYOMING

The Lionkol Co. reopened its mine at Lionkol Aug. 25 with a full crew of 150 men; every house in the Lionkol village, 65 in all, is occupied, and the company will soon reopen the company store at that place. Under present indications, the Lionkol mine will be operated six days a week with a full shift of men. The company is now producing 1,000 tons of coal daily, and expects before long to be up to capacity, which is about 2,000 tons daily. The power plant at Blairtown also was started again. This plant supplies power to both the Blairtown mine and the Lion mine of the Lionkol company. The Blairtown mine is to continue in operation.

## CANADA

A deficit of $88,599 was shown by the Blue Diamond Coal Co., Ltd., Alberta, during the year ended June 30, 1925, according to the latest balance sheet sent to shareholders. This deficit is due to fixed charges, interest paid, accounts receivable written off, and sundry adjustments, and increases the deficit account to $174,995. The deficit for the past year compares with one in the previous year amounting to $86,395.

The International Coal & Coke Co., Ltd., Coleman, Alta., plans the installation of an all-steel tipple and dry cleaning plant with a capacity of 350 tons per hour. The contract has been let to the Manitoba Bridge & Iron Works, Ltd. The structure will be fireproof throughout and equipped with the latest modern facilities, including dry cleaning tables for the proper preparation of the coal. The sizing is to be done by Hummer screens and the cleaning tables will be the product of the American Coal Cleaning Corporation, of Welch, W. Va., and similar to the machinery installed in the Blairmore plant by the West Canadian Collieries, Ltd., last year.

Output of coal from Canadian mines in June totaled 732,759 tons, as against 666,756 tons in May, being an increase of 9 per cent, but 32 per cent below the average June production for the last five years. There were slight gains in the provinces of New Brunswick, Alberta and British Columbia. Imports of coal in June from the United States and Britain were 1,470,416 tons, as compared with 1,237,755 tons in May, an increase of 19 per cent, but 9 per cent below the five-year average. Imports of anthracite totaled 407,521 tons, being 19,375 tons below the tonnage imported in May, but about 5 per cent above the 5-year average for the month. Exports of Canadian coal were 43,296 tons, as compared with 37,894 tons in May, an increase of 14 per cent, but a decrease of 68 per cent, as against the five-year average for June. The total number of men employed in the coal mines of Canada during June was 18,611, as compared with a total in May of 14,337. Production per man was 39.4 tons in June as against 46.2 tons per man in May. During June the production per man-day was 3.3 tons as compared with 2.3 tons in May.

A new process for the treatment of bituminous coal, lignites or oil shales for the production of fuel oil and valuable byproducts is under consideration by the federal Department of Mines and the officials of the Canadian National Railways, who are asked for assistance to demonstrate its feasibility. It is claimed that the process, which is controlled by a British company, can be carried on in units of as low capacity as 75 tons a day, which will permit of its being started with a comparatively small investment.

"A study of the anthracite situation in Ontario and Quebec indicates no immediate cause for alarm," stated S. J. Cook, chief of the mining, metallurgical and chemical branch of the Dominion Bureau of Statistics, last week, in commenting on the probable immediate effect in Canada of the tie-up in the United States anthracite field. "In Canada there has been a decided movement toward the further use of Canadian coals for domestic purposes, and the Dominion Fuel Board also has consistently advocated the use of coke as a household fuel. At the last session of Parliament steps were taken to increase the production of coke in Canada by providing financial assistance for companies undertaking to establish coke-making plants."

## Publications Received

**The Application of Hyperbolic Functions to Electrical Engineering Problems,** by A. E. Kennelly, professor of electrical engineering, Harvard University and Massachusetts Institute of Technology. Third edition. Pp. 352; 5½ x 8½ in.; illustrated. Price, $3.50. In this edition certain parts of the original text have been replaced by new and more recent material, a few corrections effected and five new appendices added. McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York City.

**Composition of Technical Papers,** by H. A. Watt, professor of English, New York University, and P. B. McDonald, assistant professor of English, New York University. Second edition, revised and enlarged. Pp. 429; 5 x 8 in. Price, $2. McGraw-Hill Book Co., 370 Seventh Ave., New York City.

**Accounting for the Petroleum Industry,** by David F. Morland and Raymond W. McKee. Pp. 285; 6 x 9 in. Price, $4. A description of the accounting principles and procedures applicable to the petroleum industry. McGraw-Hill Book Co., 370 Seventh Ave., New York City.

**Structure of Parts of Northeastern Williamson and Western Saline Counties (Illinois)**, by Gilbert H. Cady. Department of Registration and Education, State Geological Survey, Urbana, Ill. Pp. 20; 6 x 9 in.; illustrated. Report of Investigations No. 2.

**The Master Gyratory Screen.** H. W. Falker, Ashland, Pa. Pp. 10; 6x9 in.; illustrated. Describes the operation of this screen which, in addition to being used at coal plants, can also be used for handling stone, sand, gravel, ores, etc.

**Annual Report of Coal Mines of Alabama, 1924.** Pp. 126; 6x9 in.; tables.

**Mine Timber, Its Selection. Storage, Treatment and Use,** by R. R. Hornor and Harry E. Tufft, with a chapter on **Methods of Prolonging Life of Mine Timber,** by George M. Hunt. Bureau of Mines, Washington, D. C. Bulletin 235. Pp. 118; 6x9 in.; illustrated. Describes some of the benefits and economies to be derived by selecting, preparing, storing, preserving and utilizing mine timber and gives specific information on certain preservatives and processes.

## Coming Meetings

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland, Ohio. Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries,** Sept. 28 to Oct. 3, at Grand Central Palace, New York City.

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**American Welding Society.** Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering,** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

## Industrial Notes

**The Koehler Manufacturing Co, Inc.,** Marlboro, Mass., has opened a new branch at 2012 L. C. Smith Building, Seattle, Wash. **William C. Shaw,** mining engineer, has just been made representative of the company for the Northwestern states, including Alberta, Can.

**W. C. Davis,** president of Foote Bros. Gear & Machine Co., recently was appointed a member of the committee on commercial gear standards of the American Gear Association.

**W. McNamee,** formerly purchasing agent for the Holt Mfg. Co., of Peoria, Ill, recently joined the sales organization of the **Foote Bros. Gear & Machine Co.,** of Chicago. Mr. McNamee has been appointed district representative for the State of Indiana and all of Illinois except that section lying west and south of Springfield, which is handled from the St. Louis office. Territory within a radius of 35 miles of Chicago in both Indiana and Illinois is handled from the home office.

The plant, property and good will of the **Strom Ball Bearing Mfg. Co.,** Chicago, were acquired Aug. 24 by the **Marlin-Rockwell Corporation.** The business of this company will be conducted exactly as heretofore under the direction of the same personnel and department heads. The same lines of bearings under the Strom trade name will be continued as at present.

**Stephens-Adamson Mfg. Co.,** of Aurora, Ill., has taken the sole rights for chains made from "Farrell's 85 Special Purpose Cast Steel." This steel is used in the manufacture of chains for elevators and conveyors and for power transmission.

## Recent Patents

**Means for Refining Coal Slimes;** 1,539,746. Jan Willem Kleinbentink, Hoensbroek, Limburg, Netherlands. May 26, 1925. Filed Nov. 6, 1923; serial No. 673,207.

**Spraying Mechanism for Coke Ovens;** 1,541,621. Mario Carini, Belle Vernon, Pa., assignor of one-half to Arthur Vannucci, Belle Vernon, Pa. June 9, 1925. Filed April 23, 1924; serial No. 708,480.

**Coal Washer and Separator;** 1,542,627. Wm. F. Martin, Harrisburg, Pa. June 16, 1925. Filed Jan. 19, 1925; serial No. 3,461.

**Dump Car;** 1,542,914. Carl V. Shanaberger, Indiana, Pa., assignor to Mine Appliances Co., Pittsburgh, Pa. June 23, 1925. Filed Nov. 25, 1921; serial No. 517,432.

**Mine Door;** 1,543,005. Frederick A. Guth, Columbus, Ohio. June 23, 1925. Filed March 17, 1922; serial No. 544,600.

COAL AGE

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Devoted to the Operating, Technical and Business
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## Not Sold

THE ANTHRACITE OPERATORS, in their present controversy with the United Mine Workers, have the best case to present to the nation in the history of the industry. Their position on the cardinal points at issue is clear-cut, sound and unequivocally in the public interest. The anthracite operators are opposed to a system of negotiating wage contracts which stops production. They are opposed to a system of negotiating which makes economic pressure the arbiter of questions upon which the negotiators cannot agree. They are opposed to any change in wage scales or working conditions which will increase the price of coal to the domestic consumer. They are willing to submit their entire cause to impartial arbitration. This last offer is unqualified; there are no strings to it.

Here, if there ever was one, is a case to command widespread approval and support. And yet, nobody who takes the trouble to sample current popular opinion on the subject can escape the realization that the operators' position has made no impression on the public mind. Lay editorial discussion of the strike reveals little understanding or discrimination and even less sympathy. The industry is still in bad repute. Where the operators are not condemned separately, they are lumped with the miners in a blanket condemnation of the industry. The suspension is scored as a strike—almost a conspiracy in the eyes of some editorial writers—against the public interest. That the operators are as bitterly opposed to the strike as their critics does not find place even as a plea in mitigation.

The anthracite operators have not sold themselves to the public. To a large degree they have not tried to sell themselves to the public. This, of course, will be indignantly denied. Nevertheless, the results speak for themselves. Traditions of aloofness from the public, which were scrapped by other industries years ago, still are cherished by too many anthracite producers. Estimable, courageous gentlemen personally, they shrink from the rough-and-tumble methods by which the union leaders are able to keep public interest alert—and sympathetic. They make one or two dignified and gelid statements and retire from the field. To capitalize on gracious, personal contacts is distinctly not in their code. But worst of all, these tradition-bound leaders hamper and nullify the work of those of their own associates who are ready to fight the battle with weapons from Mr. Lewis' arsenal.

Anthracitephobia is a disease which has been coursing unchecked through the public veins for nearly ninety years. It will take more than one dose of anti-toxic publicity to eliminate it. It calls for a vigorous publicity campaign in such frequent injections that the effect of one will not be lost before another is administered. The anthracite industry, if it hopes to survive, must sell itself so thoroughly to the public that anthracitephobia will cease to exist. The only way in which that can be done is through steady, persistent, educational advertising.

General understanding of the operators' position is the best possible protection against the danger of another Pinchotian settlement. What if the union does shed crocodile tears over such a squandering of money? The job of the operators is to sell the industry to the public, not to Mr. Lewis and his followers. Unless the operators do that job, they will lose more than the present strike.

## Lean a Little Heavier

A FEW YEARS AGO when the mining industry was starting to apply electric drives to machinery, an electrical engineer who did not completely design and arrange every detail of a new installation himself, was looked upon as a weak sister. As time went on more and more equipment became available and he continued to depend largely upon himself to select the proper machinery, plan his layouts and install apparatus from time to time to keep his plant up to date.

Today the need for labor-saving apparatus and the wide diversity of equipment suitable for mine service have changed matters. The mine electrical engineer can no longer hope to have the intimate knowledge of machines that he formerly had when only a few relatively simple appliances were available, he must lean more heavily upon others for assistance.

Not a few mistakes have been made in the application of machinery at some mines and usually it will be found that these errors were committed either because the engineer tried to do too much by himself or insisted upon putting his personal impress upon everything that was done.

It often happens that because a man is not sure of himself he does not undertake to initiate a new development; instead he procrastinates hoping he will some time be able to get to the job intelligently. As time goes on he finds himself in a great maze of work, too big for him to ever catch up with. As a result his company does not keep up to date as it should and reaches a stage where it cannot be persuaded to do anything but struggle along in the same old way.

Today the successful engineer has to consult with other coal company men and with manufacturers. He must also devote some of his time to discussions and meetings with men in his own profession and keep abreast of the time through literature published on subjects covering his work.

The need for greater savings by means of machinery offers the suggestion that engineers devote more time to the business of showing their companies how to reduce costs and less time to details which usually can be more satisfactorily handled by the equipment manufacturers whose reputation stands behind it.

## What of Anthracite's Future?

UNWILLINGNESS TO ARBITRATE disputed points in the anthracite controversy indicates, on the part of the United Mine Workers, a distinct lack of confidence in the justice of their case. Mr. Lewis deports himself, in the matter, as a belligerent man who feels the weight of a dependable gun on his hip, who has unlimited confidence in his ability to use it and who intends to settle the present disagreement by nothing more peaceful than gunplay. It is not a good public advertisement of union labor methods, but Mr. Lewis can always rely upon his trustworthy and capable publicity department to turn bad advertising into good. Would that the anthracite operators could so much as prevent their own good advertising from being turned into bad by the clever miners.

If Mr. Lewis is a consistent man, his rejection this year of arbitration such as his union has plead for in the past, does not condemn the whole principle of arbitration, no matter what he may say. Instead, present day expediency actuates him. In other words he is willing to arbitrate only when he feels confident of victory. This attitude on the part of either operators or the union contributes nothing to the future peace of the industry, and it is the peace of the future which stands out as the biggest issue in today's conflict. The nation will be best served if, during the coming winter, it sees to it that nothing prevents the anthracite miners and operators from finishing a battle in the final treaty of which both sides will be glad to write peace guarantees for coming years.

## Dramatize the Wage

DOES the public ever gain a real idea from figures? We doubt it. Engineers pride themselves on having quantitative minds. If that is so the minds of the rest are qualitative. That being so why try to appeal to them with quantitative arguments? Why use calculus to explain an idea to a man who has no calculus training? After all, the public listens to the legal lights and politicians because they talk qualitatively not quantitatively.

So we, if we would talk to the man on the street, must not put the comfort, happiness and well-being of the miner in dollars, but in homes, clothing, automobiles and village streets. Now we know the miner who pays only $8 to $12 a month for a house cannot have an impressive, well finished home. We know that the city dweller pays 25 to 30, or even 40 per cent, of his wage on rent and, consequently, people believe him well-to-do by the measure of his rent and by the excellence of his clothing. He breathes comfort; he exudes prosperity.

Only by endeavoring to sell the miner a desire for a better house and better clothing, a better village and an automobile in better condition can we give the public a physical and not a numerical idea of the good fortune of the miner and his excellent wages.

In the cities, model houses have been erected to develop an increased interest in good housing, and it would be well if the mines had such places. In some cases even the house of the superintendent and the company office are not places which would serve as models of housing or exhibits of how to be comfortable.

When houses are built by the miners themselves, the architecture and arrangement are often deplorable, though there are cases where the homes so built have been more than usually elaborate. In fact, in one town of about 10,000 inhabitants, the house built by one of the miners is easily the most pretentious and permanent of any in the neighborhood—bankers and millionaires not excluded.

It is a fact that mine villages greatly need architects, not only to design but to superintend construction for a plan if well made is often marred by faulty execution and improper material. The mine engineer is really not any too well fitted to be the final arbiter as to house construction details or village layout.

## Need for New Circuit Appliances

AS A RESULT of the present economic conditions in the coal fields there is growing an increased demand for new devices to be used with drilling, loading and transporting machines. Many different types of machines have been designed and applied to the mines and not a few are still in a state of development. However, progress is being made along several definite lines and suitable circuit-control appliances and connectors are needed.

Naturally enough, nearly all appliances now used in the mines are driven by electric motors and in many instances are supplied by alternating-current energy. There is, however, a steady growth in the use of direct-current drives.

Heretofore the general tendency inside the mines has been to operate stationary equipment such as hoists and pumps by alternating-current energy, and moving apparatus such as locomotives and cutters by direct current. Perhaps the reason for this was that the direct-current motor best suited the equipment it had to drive and the alternating-current motor possessed the characteristics necessary for the stationary machines.

But today we find in the mines equipment which is sometimes stationary but frequently moved to new locations. For example, a coal loading conveyor is permanently set when it is in operation but must follow the working face from time to time. Such machines, therefore, embody the characteristics of both stationary and fixed appliances and consequently must be controlled, protected and installed to suit the new conditions.

Plugs, receptacles, fuse boxes, connectors, switches and control devices have been developed to a high degree for direct-current mine circuits used with locomotives and other portable machines, so also have similar appliances been designed for stationary alternating-current machines. But now comes a need for such three-wire appliances which will possess the features of one-wire and two-wire direct-current fixtures.

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Gas Engineers and gas men generally are watching with considerable interest the experiment of a small gas company in Sheridan, Wyo., which is using the local lignite deposits, which are mined adjacent to the city, for the manufacture of coal gas supplied to the residents and industries of Sheridan for heating and cooking purposes. This is believed to be the first time that lignite has ever been used successfully in coal gas manufacture to the entire exclusion of other materials.

# How Strong Is the Miners' Union?

## In Bituminous Fields Has John Lewis Lost Past Gains By Obstinately Clinging to 1920 Wages?—Research Shows Labor's Deep Influence on the American Coal Industry

**By Sydney A. Hale**
Special Contributor, *Coal Age*
New York City

IS THE POWER of the United Mine Workers of America on the wane? Has the strength which in 1922 moved the President of the United States to confess that, "except for such coal as comes from the districts worked by unorganized miners, the country is at the mercy of the United Mine Workers" been so dissipated that the organization headed by John L. Lewis is no longer the controlling factor in the labor situation in the bituminous coal mines of the nation? Have the gains so painfully made in the early days of the movement and so effectively consolidated in later years been flung away in an obstinate and unreasoning attempt to maintain a wage basis that is economically out of line with competitive costs?

Readers of *Coal Age* do not need to be told that these are questions which form both warp and weft of much of the earnest discussion now going on in coal circles. Nor is the interest confined to the mining industry. Government officials are known to be deeply concerned over the outcome. Large consumers of fuel recognize that the existing state of affairs is one of the danger spots in the general business set-up. Economists are drawn to a study of the situation, finding the complexities and ramifications of the subject a challenge to their serious attention. Some alarmists in the ranks of the publicists profess to see a threatening collapse which may wreck the entire economic structure of the land.

### UNION GAINS GROUND BETWEEN STRIKES

In the general strike of 1919 the power of the United Mine Workers was such that at one time or another during that six weeks' suspension it was able to close down 71.6 per cent of the actual productive capacity—measured by 1918 performance—of the bituminous coal fields of the United States. Between the end of that strike and March 31, 1922, union control weakened notably in eastern Kentucky and in the low-volatile regions of West Virginia, where the war had given the organization a temporary foothold. Nevertheless, when the call went out from Indianapolis for another general strike three years ago, the union was able to marshal enough support to cut off 73.3 per cent of the productive capacity.

How was this possible? The handicap of an unexpired contract in the western Kentucky field, the losses in the State of Washington and in West Virginia were more than counterbalanced by the development of unexpected strength in two districts in which non-unionism was regarded as impregnably entrenched. The workers in the Connellsville region, who had not staged a demonstration against their employers in over thirty years, walked out and at one time during the prolonged struggle had 81 per cent of the production in that field tied up. In Somerset County, the non-union stronghold of central Pennsylvania, at the peak of the union attack 88 per cent of the productive capacity was down. And in Westmoreland County, where as recently as 1911 the workers had given up a fight for collective bargaining after a contest lasting over a year, there was a 65 per cent shutdown as compared with a 5 per cent shutdown in 1919.*

The effectiveness of the United Mine Workers in these

**Table I—Maximum Percentages (Based on 1918 Output) of Productive Capacity in Bituminous Coal Fields Closed by General Strikes in 1919 and 1922**

| District | Production on 1918 (Net Tons) | Maximum Percentage of District Capacity Closed By Strikes 1919 | 1922 | Theoretical Maximum Annual Tonnage Capacity Closed By Strike—in Net Tons 1919 | 1922 |
|---|---|---|---|---|---|
| Central Competitive Field | | | | | |
| Illinois | 89,291,000 | 100 | 100+ | 89,291,000 | 89,291,000 |
| Indiana | 30,679,000 | 100 | 10+ | 30,679,000 | 30,679,000 |
| Ohio | 46,055,000 | 100 | 97+ | 46,065,000 | 44,541,000 |
| Western Pennsylvania | 48,299,000 | 100 | 95+ | 48,299,000 | 45,884,000 |
| Pennsylvania (other than Western Pa.) | | | | | |
| Central | 61,629,000 | 83 | 92 | 51,362,000 | 56,699,000 |
| Connellsville | 35,677,000 | ... | 81 | ...... | 28,898,000 |
| Northwestern | 8,051,000 | 100 | 67 | 8,051,000 | 5,394,000 |
| Somerset | 7,194,000 | 6 | 88 | 432,000 | 6,331,000 |
| Westmoreland (*a*) | 17,701,000 | 5 | 65 | 885,000 | 11,506,000 |
| West Virginia and Maryland | | | | | |
| Cumberland—Piedmont | 7,073,000 | 98 | 85 | 6,932,000 | 6,012,000 |
| Fairmont (*b*) | 20,104,000 | 90 | 87 | 18,094,000 | 17,490,000 |
| Kanawha | 13,324,000 | 88 | 90 | 11,725,000 | 11,992,000 |
| Kenova-Thacker | 7,024,000 | ... | * | .......... | 35,000 |
| Logan | 10,307,000 | ... | ... | .......... | .......... |
| New River | 9,292,000 | 98 | 58 | 9,106,000 | 5,389,000 |
| Panhandle | 3,255,000 | 61 | 44 | 1,980,000 | 1,432,000 |
| Pocahontas and Tug River | 23,128,000 | ... | † | .......... | 116,000 |
| Winding Gulf | 5,156,000 | ... | 15 | ...... | 773,000 |
| Virginia | 9,041,000 | [illegible] | ... | 723,000 | .......... |
| Kentucky | | | | | |
| Harlan | 3,262,000 | 60 | 21 | 1,925,000 | 672,000 |
| Hazard | 2,364,000 | ... | ... | .......... | .......... |
| Northeastern | 7,109,000 | 70 | 8 | 4,976,000 | 568,000 |
| Western | 10,833,000 | 58 | 7 | 6,283,000 | 758,000 |
| Southern Appalachian (*c*) | 11,712,000 | 100 | 57 | 11,712,000 | 6,676,000 |
| Alabama and Georgia | 19,252,000 | 48 | .. | 9,241,000 | ...... |
| Michigan | 1,465,000 | 100 | 100 | 1,465,000 | 1,465,000 |
| Iowa | 8,192,000 | 100 | 100 | 8,192,000 | 8,192,000 |
| Southwestern Interstate Field | | | | | |
| Arkansas | 2,227,000 | 100 | 96 | 2,227,000 | 2,138,000 |
| Kansas | 7,562,000 | 99 | 94 | 7,486,000 | 7,108,000 |
| Missouri | 5,668,000 | 99 | 93 | 5,611,000 | 5,271,000 |
| Oklahoma | 4,813,000 | 100 | 79 | 4,813,000 | 3,802,000 |
| Texas | 2,261,000 | 50 | 25 | 1,131,000 | 565,000 |
| Colorado | 12,408,000 | 55 | 53 | 6,824,000 | 6,576,000 |
| New Mexico | 4,023,000 | 15 | 15 | 603,000 | 603,000 |
| Utah | 5,137,000 | .. | 45 | ....... | 2,312,000 |
| North Dakota | 720,000 | 30 | 37 | 216,000 | 266,000 |
| Montana | 4,533,000 | 90 | 98 | 4,079,000 | 4,442,000 |
| Washington | 4,082,000 | 100 | 50 | 4,082,000 | 2,041,000 |
| Wyoming | 9,438,000 | 95 | 100 | 8,966,000 | 9,438,000 |
| Totals | 579,281,000 | 71.6 | 73.3 | 414,625,000 | 425,355,000 |

(*a*) Includes Latrobe, Greensburg and Ligonier districts.
(*b*) Includes all of northern West Virginia except Cumberland-Piedmont and Panhandle districts.
(*c*) Includes Tennessee and all of southeastern Kentucky except Harlan County.
+ Exclusive of country banks and local stripping operations.
† Less than one per cent.

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This is the first of a series of articles by Mr. Hale on the labor influence on the industry. The remaining articles will appear in forthcoming issues.

*The percentage figures given represent not the percentage of mines closed down, but rather the percentage of miners absent from work and, therefore, show the part of the normal producing power of the district shut off by the strike. For a discussion of how these percentages were arrrived at the reader is referred to *Mineral Resources of the United States*, 1921, Pt. II, pp. 502-7; *ibid*, 1922, Pt. II, pp. 515-19.

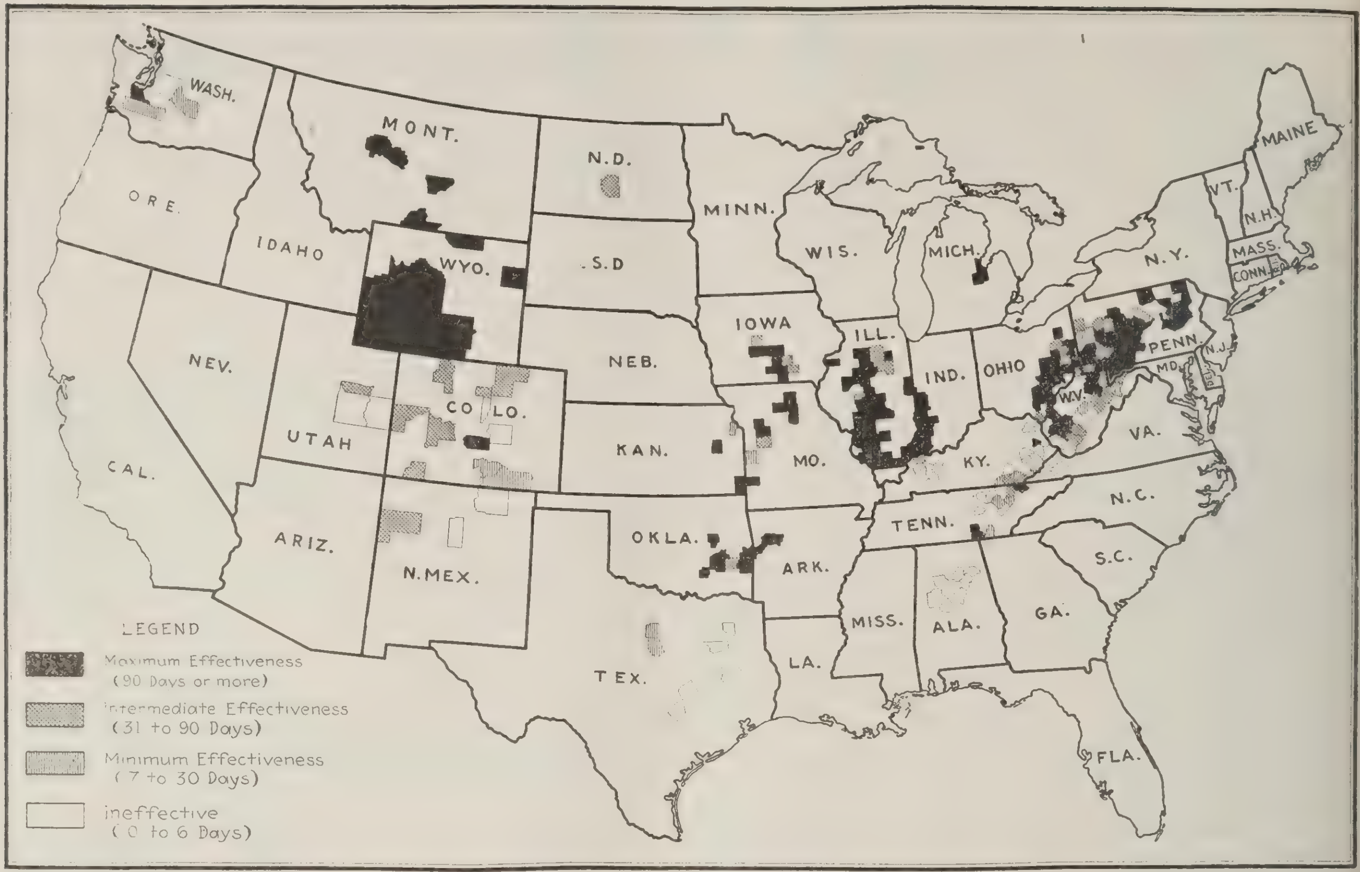


**Fig. 1—The United Mine Workers of America at the Flood Tide of Power**

This map, based upon statistics collected by the United States Geological Survey, shows the maximum effectiveness of the general strike of 1922 in the coal producing states of the country. The number of days each field was down was determined by taking the average number of days lost through strikes per man employed. As a corrective against over-estimating the importance of the intensity of the suspension in some of the minor producing districts, the map should be read in connection with the figures given in Table I showing the maximum productive capacity of each district.

two most recent direct trials of its strength, summarized in Table I, gives the necessary yardstick with which to measure the changes that have taken place since the truce signed at Cleveland, Ohio, in August, 1922, marked the beginning of the end of the general bituminous strike which had started four and one-half months before. That truce continued the basic rates—other than day rates—fixed by the United States Bituminous Coal Commission in 1920, and averaging 27 per cent above the war-time scale approved by the United States Fuel Administrator, until the following March. It also continued the advance in day rates over the Bituminous Coal Commission award won by the district strike of 1920—strikes, according to Mr. Lewis, encouraged, if not fomented, by certain operators to stop the payment of bonuses in Illinois. Another truce extended these rates until April 1, 1924. By the Jacksonville compact signed a year ago last February these rates are to be continued until April 1, 1927.

These facts are thus briefly restated because present discussion of the future of the union revolves largely around the wage rates established in 1920 and continued by the Jacksonville agreement for nearly two more years.

The post-armistice boom of 1920, with the extraordinary demand for tonnage at premium prices made it possible for union operators as a whole to pay the peak wages and still retain attractive profits for themselves. The competition for labor during those hectic months also supported the maintenance of comparable rates of pay in the non-union districts. The reaction which followed the bursting of the 1920 bubble started downward readjustments in these latter fields. Many operators, parties to the contract with the union, talked of the necessity for deflating wages, but made no move which might be construed as a violation of the existing agreements. Any hope of deflation, however, went glimmering to destruction with the 1922 strike.

The country entered that strike period with probably the greatest tonnage in storage in the yards of the larger consumers in the history of the industry. By Sept. 1, however, that reserve had been pulled down from over 63,000,000 to approximately 22,000,000 net tons, the second lowest reserve on record. The market created by this depletion of the stocks in storage and the demands for fuel for current consumption in 1923 introduced during that year a more sustained high level of weekly production than ever before witnessed in the bituminous coal trade.

But the benefits were not evenly distributed. Compared with 1918, only five states—Alabama, Kentucky, North Dakota, Virginia and West Virginia—were able to increase their output, and in those states non-union operations predominated. Illinois, on the other hand, fell back nearly 10,000,000 tons; Ohio, over 5,000,000 and Pennsylvania almost 7,000,000 tons. The losses in the strongly non-union counties of Fayette, Somerset and Westmoreland, however, were equivalent to 93 per cent of the total decline in Pennsylvania tonnage. Kentucky output increased over 13,000,000 tons, practically all of which came from the eastern part of the state; West Virginia increased nearly 18,000,000 tons.

The major producers in the union regions kept in the running through greater efficiency—man and mechanical. Even in that field, however, they were by no means in a class by themselves. Working 70 days less than in 1918, the total production for the country declined only 15,228,903 tons. An increase in the total number of men employed from 615,305 to 702,817 was responsible in part for keeping up production, but the controlling factor was increased output per man. Had the 615,305 workers reported employed in 1918 reached the same daily average output per man as the 702,817 workers reported for 1923 the 1918 group would have taken only 215 days to raise the record-breaking tonnage of that banner year. The 1918 average number of days worked, however, was 249.

There was still another factor which helped to postpone the demand for a readjustment. That was the greater concentration in mining. As explained in detail in an article appearing in an earlier issue of *Coal Age* (*Shifts in Production of Bituminous Coal*, Tryon, McKenney and McKinney, Feb. 26, 1925, p. 329), throughout 1923 there was a steady increase in the number of idle mines, the percentage of these to the total number reporting to the United States Geological Survey jumping from 8.4 per cent on Feb. 17 to 32.0 per cent on Nov. 17; a decreasing number of mines operating one to three days a week and an increasing percentage working four to six days a week.

In spite of the handicaps of higher wage rates, Pennsylvania, still predominatingly union, was able to operate an average of 213 days that year. Allegheny County, in the heart of the Pittsburgh field, averaged 233 days. Illinois, which is, except for small country banks, completely unionized, averaged just eleven days less than West Virginia. Franklin County, in the southern Illinois field, lagged only six days behind McDowell County, West Virginia, and ten days behind Mercer County. Working time in the lowly Sangamon County district of the central Illinois field actually exceeded the average for far-famed Logan County, West Virginia, by seven days.

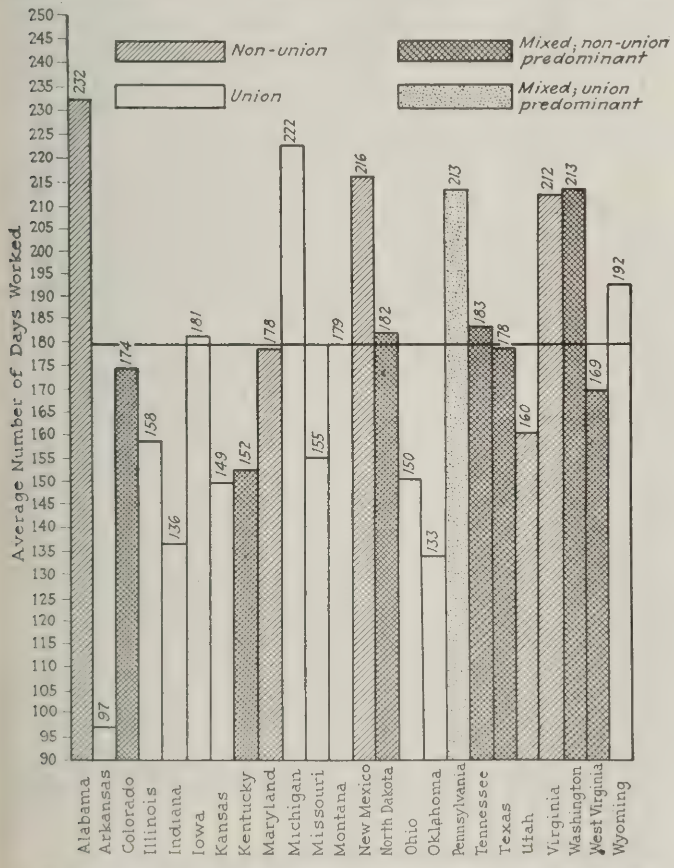


**Fig. 2—How Bituminous States Work When Demand Is Good**

This chart shows the average number of days worked in the bituminous coal producing states in 1923. Seven out of the eleven strictly union states failed to equal the average working time for the country as a whole; two out of the five strictly non-union states also fell below the national average. In the semi-organized states, four out of the seven predominatingly non-union averaged fewer days than the country as a whole.

The net results of these and other factors influencing 1923 operations were that the better situated producing companies throughout the country were able to show a profit on their year's business. This was done despite the fact that average spot prices declined from $4.38 per net ton in January to $2.18 in December and that the average realization on all tonnage mined fell to $2.68, as compared with $3.02 in 1922; $2.89 in 1921, a year of marked depression; $3.75 in 1920, the year in which the basic wage scales now in effect in the unionized districts were established, and $2.58 in 1918. This last figure is quoted because prices in that year were fixed by the United States Fuel Administrator after an examination of production costs and presumably gave full weight to the element of wages.

### Wage Ratios Increase

As previously stated, the United States Bituminous Coal Commission award, effective April 1, 1920, represented, it was announced at the time of its promulgation, an average increase of 27 per cent in the wage bill of the industry. The wage bill was in turn estimated—before adding this 27 per cent—at 57 per cent of the total reported value of coal produced. The total value of the bituminous tonnage mined in 1923 was reported by the United States Geological Survey as $1,513,327,000—an increase of $21,517,000 over the total for 1918. Wages in 1918, on the 57 per cent basis, absorbed approximately $857,491,000 of the reported value of the fuel. The increase authorized in 1920, uniformly applied to the slightly smaller 1923 tonnage, would give an estimated wage cost of $1,060,615,000, an increase of $203,124,000 as compared with an increase in value of only $21,517,000.

These figures, of course, are subject to all the vices of averages for an industry as vast and as complex as the bituminous coal industry. In the present case, these drawbacks are further magnified by the changes in wage status in 1923 as compared with 1918. The 1918 wage basis was the 1917 scale and this was generally observed throughout the soft coal regions when the Bituminous Coal Commission made its award. Therefore, the application of the 27 per cent increase to 1918 or 1919 figures gave a fair approximation. Between 1920 and 1923, however, there were certain fields which abandoned the Coal Commission scale for the 1917 basis or some modification thereof. To that extent, therefore, the application of 1920 figures and percentages exaggerates the wage total—possibly ten per cent, probably less. What the figures do show, however, is the trend, and the comparisons indicate this with startling clearness.

Through 1923 there was widespread discontent among coal producers over the wage scales. In some of the non-union districts which had been keeping pace with the union base rates, the competitive pressure became so strong that downward revisions were made. For the most part, however, little serious consideration was given to the question of operators in organized fields severing their alliance with the United Mine Workers of America. Those producing companies with up-to-date plants and alert merchandising organizations carried on with profit. Another large group of operators, who are constitutionally opportunists, held on in the hope that some dislocation of supply would intervene to curtail output and run up the prices on their tonnage to sky-rocket figures. And a third group of constitutional optimists hung on in the belief that conditions with the coming of the new year would justify the maintenance of the 1920 bases of pay or, if not, that the new wage agreement to be negotiated would relieve the organized fields of their burdens.

The signing of the Jacksonville agreement ended all such dreams. Average spot prices, which reached \$2.25 during February, 1924, dropped to \$1.98 by midsummer and closed the year at \$2.06. The average for the year, \$2.08 probably was close to the average realization on all tonnage as many of the contracts made on 1920 bases in 1922-23 expired March 31, 1924, and were not renewed. Operators so fortunate as to persuade consumers to sign up again shortly before the Jacksonville meeting knew that April 1, 1925, would mark the end of most of those contracts. Tonnage, too, began to slide off rapidly as the prospects of a general strike vanished. The number of companies who began to write their month's operations in the red grew.

Under those conditions it is not surprising that the ink had hardly dried on the signatures affixed to the Florida compact before there were demands for a modification of the wage rates therein named. Such demands naturally came first from the semi-organized fields, notably the union mines of central Pennsylvania, which were receiving the full force of the drive launched by the non-union fields to supply a greater share of the decreased coal requirements of the consumers. In the organized part of the Kanawha district an overwhelming majority of the operators, after fruitless negotiations, declined to renew contractual relations with the union.

No important union district has escaped some manifestation, some evidence of a determination to carry on without the union since it was impossible to carry on with it. In some instances, these breaks have been given a prominence all out of proportion to the tonnage involved; in others, perhaps, the extent of the defection has been unduly minimized. A correct appraisal of the effect of these changes must rest upon a knowledge of the conditions in each major field.

**These Are Some of the Men Who Make Island Creek Mines Outstanding**

Many of these operating officials and executives have been at the Island Creek Coal Co.'s group of mines in Logan County, W. Va., for years. They have seen the company's production mount as the organization grew in industrial importance. This year they expect their properties to ship at least six million tons. In the background of the photograph is shown the home of W. A. Hunt, general superintendent, at Holden, W. Va.

In the picture the men are, back row, left to right: W A. Hunt, general superintendent; J. J. Foster, auditor; H. L. Bradshaw, electrical engineer; E. R. Dunsford, assistant superintendent of Mines 11 and 12; J. Lindley, superintendent of Mines 11 and 12; R. G. Lazzell, assistant superintendent of Mines 7 and 8; A. J. Alexander, assistant superintendent of Mines 15, 16, 17 and 18; R. E. Salvati, superintendent of Mines 15, 16, 17 and 18; Roscoe Garrett, master mechanic at all the operations.

Front row, left to right: A. R. Beisel, general manager; J. H. Madison, superintendent of Mine 20; Mike DePietro, superintendent of Mine 21; W. J. Crutcher, manager of commissaries; Ed Mooney, superintendent of Mine 1; L. T. Dodd, mine inspector; W. S. Parsons, superintendent of Mines 7 and 8; Ed White, general carpenter foreman; L. D. Thompson, foreman of mine electricians.

# Mine Substations Properly Equipped and Located Help Cut Down Power Costs

**By J. E. Borland**

General Engineering Department, Westinghouse Electric and
Manufacturing Co., East Pittsburgh, Pa.

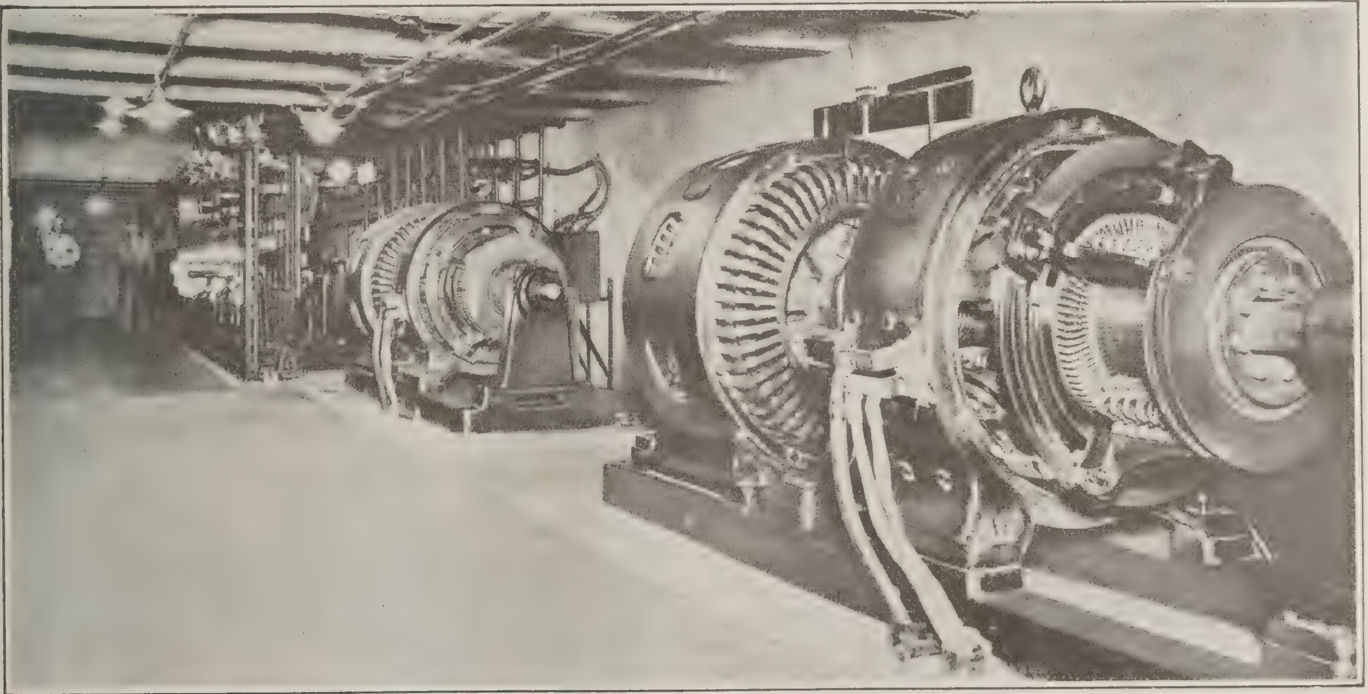
DEVELOPMENT in the application of electric power to coal mining has long since passed the point where it is considered necessary to compare the advantages of this service with other possible forms of drive. The only exceptions are certain applications, such as the main ventilating fan and the man hoist of a shaft mine, for which steam drive is often used through the belief that it will furnish greater insurance against interruption of service. The benefits derived are often questionable if the cost of operation is taken into consideration.

It is always possible to use the more economical electric drive for any mechanical operation and provide against interruption by adding a standby gas engine unit, arranged to drive the fan directly, or coupled to a low-frequency generator to supply power to alternating-current motors on the fan or man hoist, operating these at speeds reduced in proportion to the drop in frequency and voltage. Such a unit is needed only in emergency and with occasional tests it is always available for service within a few minutes. It is, therefore, possible to use motors for any operation in the production of coal, with assurance of power supply at any vital point.

This applies particularly to those cases where power is received at the mine in the form of alternating current, either purchased from a public utility company or distributed from a power station maintained by the coal company. There are still numerous mines of moderate size which are isolated from a reliable distribution system, and these often have a direct-current generating plant installed near the mine opening. Purchased power always has an advantage over such small plants, and depending on the life of the mine and other considerations, it often proves economical to change over to such service if it becomes available.

In some operations where a large power demand is made by a group of mines in a given locality a generating station of proper capacity is located at the most convenient point with respect to load distribution, water supply, etc. Such a station may be operated with economy and reliability approaching that of purchased power, particularly if there is a supply of fuel with low market value, and a convenient source of good water. With this system as well as with purchased power, transmission over a considerable distance is necessary so that power is delivered to the mines in the form of alternating current at a voltage of 2,200 or higher.

The principal underground application of power in coal mining is usually to locomotives for main haulage or gathering service, and as the characteristic of the series wound, direct-current motor is best adapted to mine locomotive service, the direct-current system is used for underground distribution in all mines using trolley locomotive haulage. It is possible to use alternating-current motors for other applications such as



**By Getting Close to the Center of Load Much Better Voltage Is Maintained on the Power Circuits and Less Energy Is Lost**

In this underground substation two 300-kw. synchronous motor-generator sets change the alternating-current energy to 275-volt direct-current energy which is supplied to the mining equipment. Another advantage of these machines is that they help in a large measure to correct the lagging power factor created by induction motors on the alternating-current system pumps, fans, air compressors, cutting machines, loading machines, etc., but with the trolley circuit carried throughout a mine it is seldom economical to install a separate alternating-current distribution system, and direct-current motors are generally used on these drives also.

With power received in the form of alternating current, a means of converting this to direct-current power is necessary at or convenient to the opening of every mine using trolley locomotive haulage.

The equipment used for this purpose may be a rotary converter or a motor-generator set, the latter consisting of a direct-current generator driven by either a synchronous motor or an induction motor. The synchronous motor is used practically always because of certain operating advantages, notably the possibility of power factor correction and its constant speed, which are not provided by any other type of alternating current motor.

As the name implies, the synchronous motor-generator set consists of two machines, an alternating-current synchronous motor and a direct-current generator, the rotating elements of which are connected directly together. The stator of the synchronous motor is provided with a distributed polyphase winding which may be designed for high voltage, so that in many cases the full line voltage may be used without the necessity of installing step-down transformers.

Standard machines are wound for either 2,200 volts or for 4,000 volts, three phase, 60 cycles. The rotating part carries a multipolar, direct-current field winding, usually with six poles giving a speed of 1,200 r.p.m. on a 60-cycle circuit. The field is excited from the direct-current generator in case the direct-current voltage is 275, but with 600-volt generators a separate 125-volt exciter is added to the set, so that the rotor of the motor is the same for either 2,300- or 4,000-volt stator windings. A squirrel-cage winding is provided in the pole faces which permits the motor to be started as an induction machine, and adds to its stability in operation.

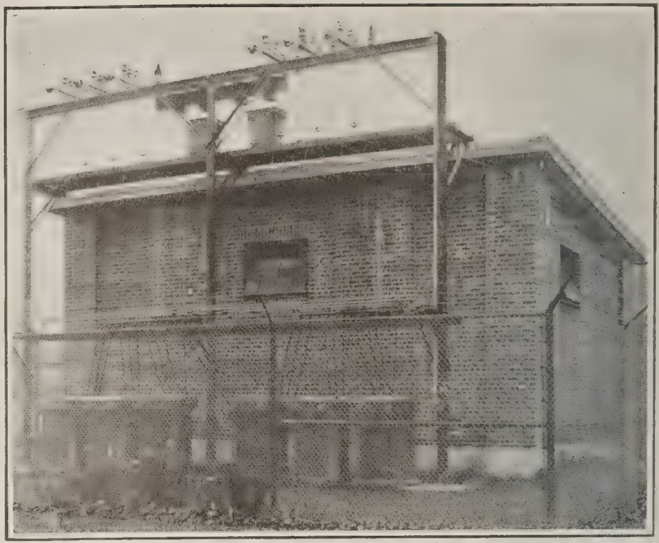
The direct-current generator is compound-wound and usually is provided with a rising voltage characteristic to compensate in part for the drop in voltage in the direct-current feeders on heavy load.

### Switchboard Equipment

The standard switchboard equipment for a synchronous motor-generator set includes a motor panel and a generator panel mounted side by side, with the starting and running breakers, auto-transformers, field rheostats and auxiliary apparatus mounted at the rear on pipe frame work.

The set is started by closing the switch connecting the motor winding to low voltage taps of the auto-transformers, all other switches being in the open position and the motor field permanently connected to the armature of its exciting machine. Under the induction motor action on the pole face windings of the synchronous motor, the set comes up to speed and will lock into step within a minute. The motor field excitation should then be increased to a value which tests show will produce the minimum rush of current when the transfer is made to the full voltage. The running switch is then closed, and the motor field rheostat is adjusted to give the desired power factor.

Adjustment of the generator field rheostat will then give correct generator voltage, and the direct-current circuit breaker and knife switch can then be closed. If the set operates in parallel with others nearby, the equalizer switch should be closed before connecting to the line. A common direct-current voltmeter with plugs to the different machines should be used to adjust voltages to the same value before paralleling.



**Permanent Substation Houses Two 150-Kw. Rotary Converters**

Sometimes there is no better place than the outdoors in which to locate a power converting substation. This one is equipped with two rotary converters supplied from outdoor type transformers.

Proper division of load may be obtained by adjustment of the generator field rheostats, and with the voltage characteristics made suitable for parallel operation at the time of installation, the generators will divide the load in proportion to their ratings over the entire range of load.

The other type of machine often used in a mining substation is the rotary of synchronous converter. This consists of a single machine the construction of which is very similar to a compound wound direct-current generator, with taps taken off the rear of the armature winding to six collector rings carried on the shaft. Its design and proportions are different from those of a direct-current generator, however, and it has a proportionally larger commutator than a generator of corresponding rating. The synchronous converter is supplied with alternating-current energy at its slip rings and delivers direct-current energy at the commutator.

With respect to the external circuits it has the essential characteristics of a synchronous motor on the alternating-current side and those of a direct-current generator on the direct-current side. Since the alternating-current and direct-current voltages of the machine are induced in the common armature winding by the same field, there is a fixed ratio between these voltages.

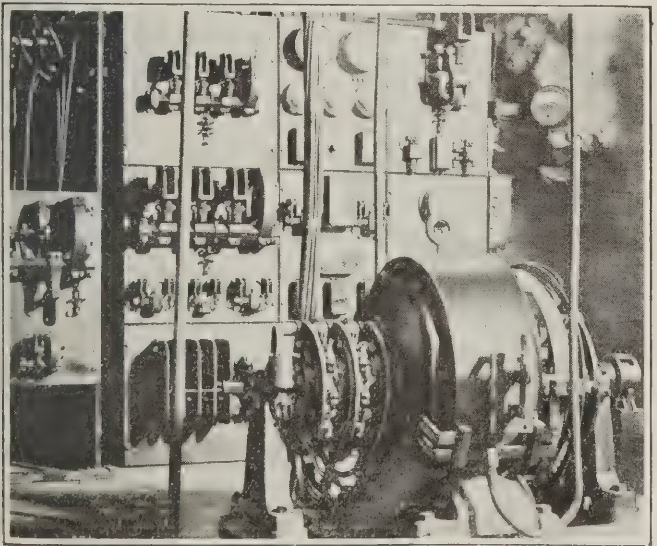
This ratio is influenced to some extent by the design of the machine, but is approximately 0.72 for a standard machine, wound for six-phase, diametrical connection. This means that a 275-volt converter requires approximately 198 volts on the alternating-current slip rings, and three transformers to supply the proper voltage accordingly are necessary with each converter. These transformers have a high-tension winding wound for the line voltage and are provided with reduced voltage taps to adjust for low voltage on the line. Taps are also provided on the low-tension winding so that reduced voltage may be applied to the rotary converter during starting.

Switchboard equipment for the rotary converter includes an oil circuit breaker for the high tension side of the transformer, a three-pole, double-throw, knife switch for starting, a two-pole, double-throw, field switch, field rheostat, direct-current carbon circuit breaker, knife line switch, and meters.

In the larger ratings of the modern design of commutating pole converter, it is necessary to raise the direct-current brushes from the commutator by a brush-lifting device to prevent injurious sparking during the starting period. Two brushes of opposite polarity are left down to carry the shunt field current. With the brushes raised the oil circuit breaker is closed, connecting the high tension windings of the transformers to the line. Then the double-throw, knife switch is closed on the starting contacts which connect the slip rings to the reduced voltage starting taps. The machine comes up to speed and locks into step by induction motor action on a squirrel-cage winding in the field pole faces.

If the direct-current voltage builds up with reversed polarity it is corrected by reversing the field switch momentarily, returning it to the operating position when the direct-current voltmeter reaches zero. When correct polarity is indicated the starting switch is thrown to the running position. The brushes may then be lowered and the direct-current breaker and line switch closed, an equalizer switch being closed first if the converter operates in parallel with others.

In many respects the characteristics of the rotary converter and the synchronous motor-generator set are similar, and while the starting and switching equipments differ in some details, it cannot be said that one is more difficult to operate than the other. There is no particular difficulty in operating rotary converters in parallel, and with proper adjustments of fields and reactance on the alternating-current side satisfactory division of load will be obtained. As in the case of direct-current generators, equalizer connections are necessary with rotary converters operating in parallel. With parallel operation it is also advisable to provide reverse-current relays to trip the circuit breakers, and a speed limit device should be used on the machine to prevent possibility of overspeed on inverted operation.



**Outfit Quickly Put in Service**

This rotary is installed in a simple yet efficient manner. The cables are suspended overhead instead of being placed in underground conduits.

While the reliability of the rotary converter is possibly not quite as good as that of either the motor or generator, making up a motor-generator set, the reliability of the motor-generator set is determined by two machines instead of one with the rotary converter, so that there is little to choose between the two types from this standpoint. The rotary converter has been thought a little more sensitive to flashover than the direct-current generator, but trouble from this source is rare with properly designed machines. The rotary converter is inherently a low-voltage machine so that the factor of safety of the insulation is higher than with the synchronous motor wound for high voltage. The synchronous motor, however, is less affected by disturbance of the power supply.

### CONSIDER OPERATING CONDITIONS

The decision between rotary converters and motor-generator sets for a mining substation is properly made through consideration of their respective characteristics, first costs and operating costs, taking into account the nature of the power supply and the terms of the power contract, particularly the clause on power factor. If the conditions are such that one equipment shows little advantage over the other, the decision usually is determined by the personal preference of the engineer making the selection. Under most conditions satisfactory operation is obtainable with either type of equipment.

The first cost of the rotary converter and transformers is about 90 per cent of that of an equivalent motor-generator set without transformers, but this will be offset to some extent by the more complicated wiring of the rotary converter and transformers. A further saving may be made in the building as the rotary converter requires less floor space than does the motor-generator set and the transformers may often be installed on the outside.

The efficiency of a rotary converter is considerably greater than that of a motor-generator set, for example, the combined efficiency of a 150-kw. rotary converter and transformers at full load is about 91.5 per cent, while the efficiency of a 150-kw. motor-generator set at full load is 85.2 per cent. The light load losses of the rotary converter are also less than those of the motor-generator set, the no-load inputs being about 5 kw. and 19 kw. respectively. The result of these differences is that less energy will be consumed by the rotary converter than by a motor-generator set on the same load, and this saving will be greater if the machines are required to operate for long periods at light load, as, for example, to supply power to several small motors during non-working hours.

One great advantage of the synchronous motor generator set is the ability to operate the motor at leading power factor, and thus correct to a greater or less extent a lagging power factor load caused by induction motors and transformers on the alternating-current line, the amount of correction depending upon the relative size and characteristics of the synchronous and inductive loads.

To secure this feature standard motor-generator sets for mining service are equipped with synchronous motors designed for operation at 80 per cent leading power factor. Most power contracts provide for a reduction in rates when a high power factor is maintained, so that even with a greater energy consumption due to its lower efficiency, the power bill may be less with the synchronous motor-generator set.

The important operating advantage of the synchronous motor-generator set is the independence of the alternating-current and direct-current circuits. While the alternating-current and direct-current voltages of a rotary converter have a definite ratio in a given machine, the voltage of the direct-current generator may be regulated entirely independently of the alternating-current voltage applied to the synchronous motor, and the alternating-current circuit need not be considered in adjusting the direct-current machine for proper voltage characteristics and parallel operation.

Variation in voltage on the alternating-current line will have no effect on the direct-current voltage of the motor-generator set, whereas the direct-current voltage of the rotary converter will vary in proportion to any change in the alternating-current voltage. In case the frequency of the power supply varies, the speed of the motor-generator set will follow with proportioned variation in direct-current voltage.

### Selection of Types

Frequency variations have little effect on the direct-current voltage of the rotary converter. The frequency of the power supply is practically constant in most cases, but considerable variation in the line voltage is often obtained so that the synchronous motor-generator set has the more desirable operating characteristics.

The rating of machines to be used in a mining substation is determined by the maximum peak, the average demand and the maximum demand sustained for any considerable length of time. Sufficient capacity should be installed so that the maximum peak will be within the 100 per cent momentary overload guarantee, and so that overheating will not occur during periods of heavy sustained load.

When the number of motors in use and their ratings and operating characteristics are known, the required substation rating can be readily calculated, by taking into account the probable maximum demand and the diversity factor of the load. The substation rating in kilowatts usually may be about 50 per cent of the total horsepower of connected motors, because of the diversity factor. The power required for development of a mine can be estimated with fair accuracy by comparison with similar existing operations, and it usually is desirable to allow some reserve capacity in the first substation installed to provide for additional load as the mine is extended. Other units are added if the need for more capacity develops.

If a mine depends upon one substation for its power supply it is preferable to divide the total capacity required into two units, so that a tie-up will not be caused by trouble with one machine. A saving in the power will also be effected by taking one unit out of service if it is necessary to supply a small demand in non-working hours. The higher cost of installing two machines instead of lumping the capacity in a single unit is warranted by the added insurance, as the loss in production through a complete tie-up might easily wipe out the difference in a short time.

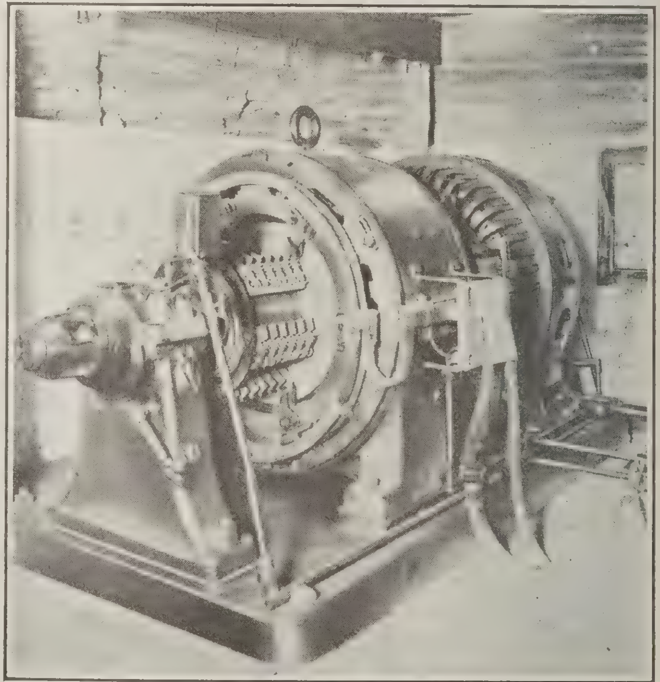
The first substation usually is installed convenient to the mine opening to save feeder copper and so that it may be given attention by men employed regularly at other work on the surface, in case a regular attendant is not present. The direct-current feeder circuit at first usually consists of a single 0000 trolley wire and bonded rail return. As the development of the mine progresses, with increasing load and movement of the load center to a greater distance from the substation, additional feeders in parallel with the trolley wire and return become necessary to maintain suitable voltage at the motors.

In many cases the waste due to low voltage at the motors is not fully appreciated. The voltage drop in the distribution circuit represents a proportional loss of the power delivered by the generating equipment, which serves no useful purpose. That is, if the substation is carrying a load of 1,000 amp. at 275 volts, it is delivering power at the rate of 275 kw., and if the average voltage at the motors is 200 volts, the line drop is 75 volts and the power loss 75 kw., which is more than one-quarter of the substation output.

The loss in power is by no means all the waste, however, for with low voltage the motor speeds are reduced, with consequent loss in production. Putting it another way, the capacities of machines are impaired, requiring more units to produce the required tonnage. Another item, often overlooked, is the increased motor maintenance caused by low voltage. Shunt or compound motors, such as used on pumps, compressors, etc., decrease in speed with reduced voltage, the drop in speed being proportionately less than the drop in voltage because of weakening of the shunt field strength. Such drives usually require practically a constant torque, and as the torque is proportional to the product of the field strength and the armature current, weakening of the field with low voltage requires an increase in the armature current to carry the load.

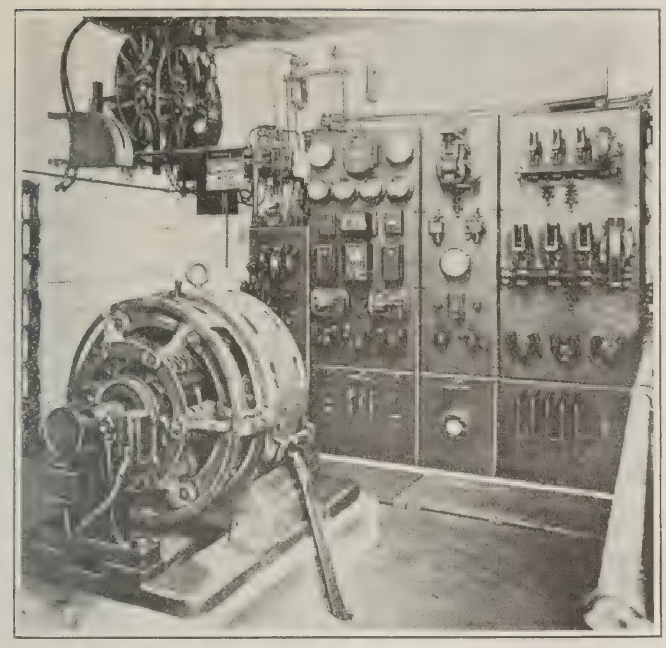
This results in overheating and frequent burnouts unless the drives are sufficiently over-motored to allow for such abnormal operation. Standard motors of this type are rated for operation at 230 volts and may be operated at 10 per cent less voltage without injury.

Series motors used on locomotives, cutting machines,



**Inside Substation Equipment Which Is Started by a Push Button**

Automatic switching equipment is provided for this 200-kw., 275-volt synchronous motor-generator set. The control apparatus not only starts and stops the outfit but always stands ready to guard and protect it and the outgoing circuits from damage.



**Small Units Made Automatic Require Little Attention**

Here is a 150-kw., 275-volt rotary provided with automatic control and located inside the mines. The switching equipment clearly shown in the background comprises all the control apparatus sufficient to provide safe, reliable operation.

loaders, etc., decrease in speed almost in proportion to the reduction in voltage. While the current taken by these motors is not affected, the loss in speed requires them to be in service longer, and since they are rated on an intermittent basis, this often results in excessive temperature and deterioration of the insulation on the windings.

These items are reflected in the cost per ton of mining coal, so the problem of maintaining proper voltage should be considered on an economic basis, and a balance obtained between the cost of adding to the feeder capacity and the saving effected thereby, making allowance for the somewhat intangible items of better operating speeds and motor maintenance.

In calculating the capacity of a distribution system using a rail return, the total cross-section of the rails can be used provided they are properly bonded and cross-bonded, the resistance of bonds being a small part of the total. This part of the system should be carefully installed and maintained, as track bonds are often easily damaged by derailments and other causes.

When additional capacity in the system becomes necessary, bare, stranded, copper conductors may be added in parallel with the rail return. The positive feeders paralleling the trolley wire usually consist of rubber insulated, braid covered, stranded conductors carried on insulators along the rib or overhead, and connected to the trolley wire at intervals by means of feeder clamps. When adding feeders it is advisable to estimate requirements several years in advance, so as to avoid the expense of frequent changes.

In operations which have been advanced to a long distance from the original opening, it often proves more economical to install additional converting equipment near the load center rather than go to the expense of installing heavy feeders to deliver the desired voltage. This practice has been assisted by the development of automatic switching equipment, which permits operation without any attention other than an occasional inspection by one of the electrical men and thus obviates the necessity of a regular attendant.

Alternating-current energy usually is carried to the substation over a wood pole line, but when this is not practicable the high-voltage, alternating-current cable may sometimes be carried along one of the main entries, suitably protected in underground conduit.

Where the mine workings are close to the surface the converting equipment often is installed in a building on the surface and direct-current feeders run down a borehole, air shaft or other opening. A large part of the cost of the building can be avoided by installing the substation underground and running the alternating-current feeder to the inside. The cost of transporting materials and equipment in rough country is an item upon which a saving often can be made by locating the substation in the mine.

For carrying the alternating-current line into a mine, a three-conductor, lead-covered cable is advisable, and if the cable is suspended in a borehole or shaft, an armored sheath may be necessary to carry the weight. Pot heads should be used at each end to seal the cable and exclude moisture.

An underground substation should be located as near as practicable to the load center and preferably along an entry that will be kept in good condition throughout the life of the section, so that the station will be accessible for inspection and maintenance. The equipment should be installed in a clean, dry room, and provision should be made for ventilation by diverting air to the room or installing a small fan to cause a circulation of air through the room. In gaseous mines, ventilating air should be taken from the intake air course.

### AUTOMATIC STATIONS BECOMING POPULAR

Automatic switching equipments for mine substations usually are arranged to start from a push button or time switch, and so are not strictly automatic as the term is understood in railway work. With this exception, however, all operations in starting and protecting the equipment are performed automatically, and more efficiently than possible with manual control, as no false moves are made. Protection from overload, overheating, unbalanced operation, low voltage, excess speed and hot bearings is automatic, and the station is locked out of operation by any trouble requiring the service of a maintenance man, the nature of the trouble being indicated by an annunciator type of relay. The value of this type of equipment for mining work is indicated by its swiftly increasing use.

Whether underground or on the surface the substation equipment should be installed in a fireproof room with ample space for safety and accessibility. Sufficient headroom should be allowed, and an I-beam installed over the axis of each machine to facilitate handling the equipment. A concrete floor is to be preferred, and the location of equipment should be planned and conduit placed before pouring the floor. With properly drained pits and conduit, lead-covered conductors are not necessary in wiring. The bedplates of machines should be carefully leveled and grouted in place to obtain an even footing and avoid vibration.

The mining substation in most cases might be regarded as the heart of the power equipment, and the utmost care is warranted to insure the greatest economy and reliability. It has been the endeavor of this article to point out that these features are obtained not only by careful selection of the size and type of equipment, but also by a thorough study of the distribution of load and location of stations.

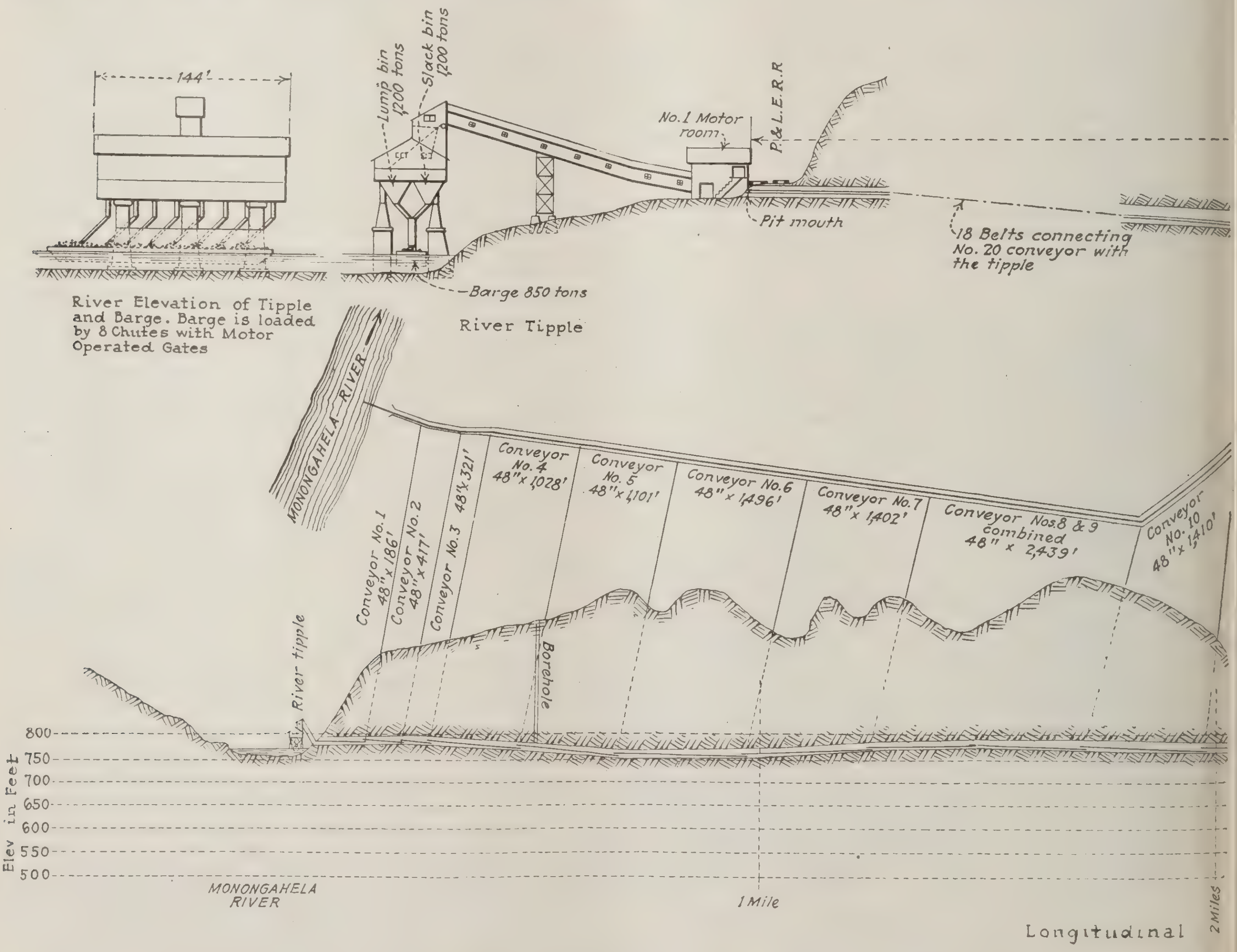
# Frick Conveyor System Proves Its Efficiency

Few installations of coal-mine machinery or equipment have ever attracted more widespread attention than the system of underground conveyors installed several months ago by the H. C. Frick Coke Co., to transport coal from the Colonial mines to the Monongahela River and there load it onto barges. This installation represented so radical a departure from current practice that it immediately arrested the attention of mining men everywhere and much comment and conjecture were indulged in long before the machinery was finally put in motion. From the start, however, this installation proved a success and it is understood that several other conveyor systems of a similar type are now under consideration both by the owners of this one and by other companies.

Although the principal dimensions of this installation have already received publicity the more salient of them may well be repeated. The total length of the conveyors is 22,927 ft. and the total height through which the coal is raised amounts to 357 ft., 7⅜ in. Originally this conveyor system was made up of 20 sections or separate belts, but in January, 1925, belts Nos. 8 and 9 were combined into one unit, making a section 2,439 ft. long or the longest single conveyor belt in the world. Prior to the combination of these two sections belt No. 11 was the longest in the system, its length being 1,513 ft.

Alternating current at fairly high potential is employed to drive the various elements of this system. Thus, each section is actuated by an independent motor. All of these machines are of the wound-rotor type for 2,300 volt, 3-phase, 60-cycle current, and all operate at 900 r.p.m. The entire system is controlled from No. 1 motor room.

In order to bring this current into the conveyor tunnel three boreholes have been sunk at various points along its course. The position of these holes as well as the plan and elevation of the entire line may be seen in the accompanying illustration. It will be observed that this conveyor system does not, as might at first be supposed, extend in a straight line from the loading to the discharge point. On the contrary, changes of direction each amounting to almost 45 deg. are introduced between the combined section, belts Nos. 8 and 9, and section No. 10 and also between sections Nos. 12 and 13.


144'
Lump bin 1200 tons
Slack bin 1200 tons
No. 1 Motor room
P.&L.E.R.R.
Pit mouth
18 Belts connecting No. 20 conveyor with the tipple
Barge 850 tons
River Elevation of Tipple and Barge. Barge is loaded by 8 Chutes with Motor Operated Gates
River Tipple
MONONGAHELA RIVER
Conveyor No. 1 48"x 186'
Conveyor No. 2 48"x 417'
Conveyor No. 3 48"x 321'
Conveyor No. 4 48"x 1,028'
Conveyor No. 5 48"x 1,101'
Conveyor No. 6 48"x 1,496'
Conveyor No. 7 48"x 1,402'
Conveyor Nos. 8 & 9 combined 48" x 2,439'
Conveyor No. 10 48"x 1,410'
River tipple
Borehole
800
750
700
650
600
550
500
Elev in Feet
MONONGAHELA RIVER
1 Mile
2 Miles
Longitudinal

**Plan, Cross-Section and a Few of the Details of**

It will be observed that the plan of this system is not straight, although in this illustration the cross-section is so drawn. No. 1 motor room is close beside the P. & L. E. R.R. tracks near the bank of the Monongahela River. In many respects this

## Conveyor Test Data After Installation

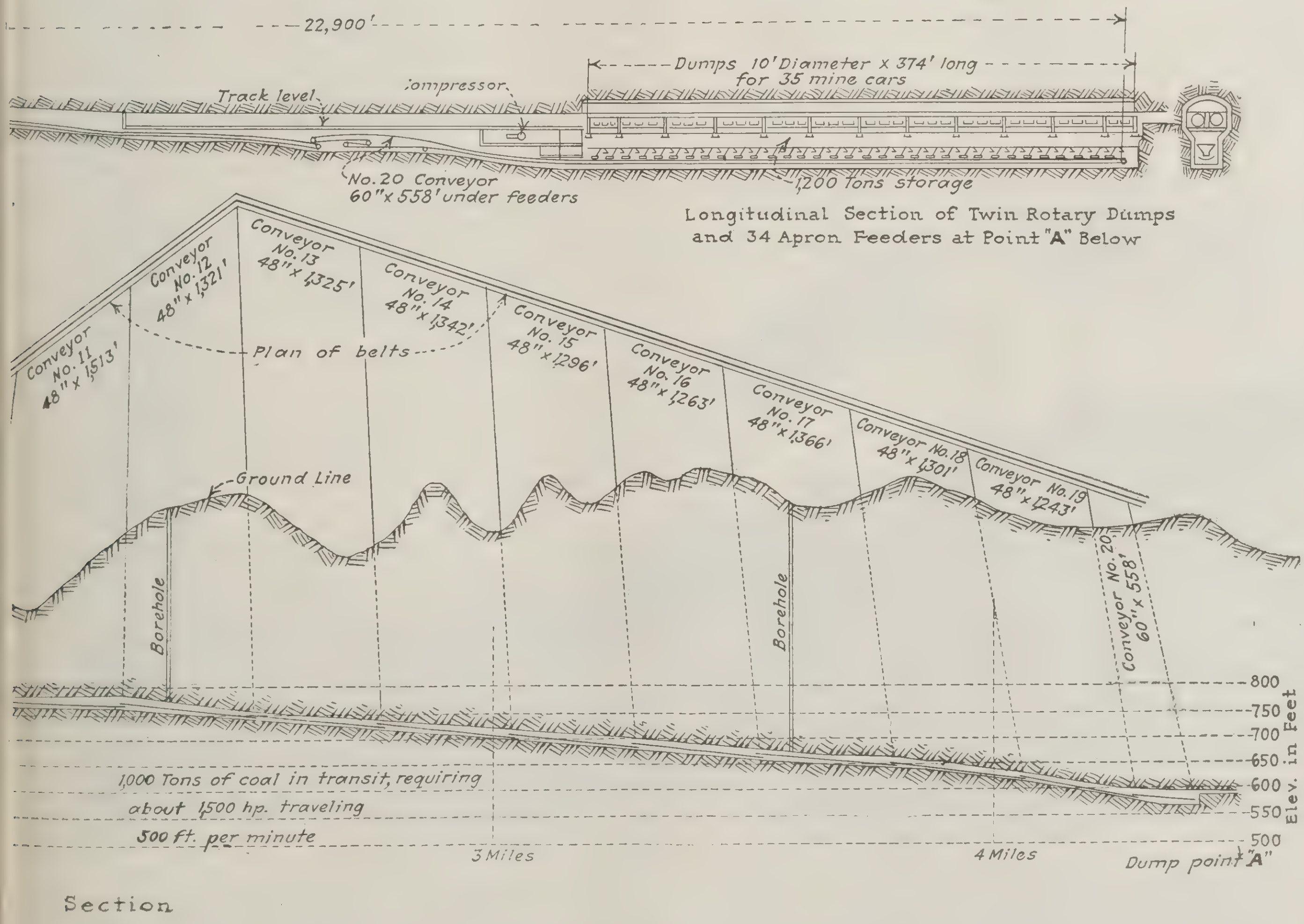
| Belt No. | Length in Ft. | Lift Ft. | Tons Carried for Day | Total Kw.-Hr. for Day | Time That Belt Ran, Min. | Time That Belt Carried Load, Min. | Average Load Tons per Hour | Kw. Demand for Empty Belt | Add Kw. Above Empty Demand to Carry Average Load | Kw. to Lift Load Average | Level Belt Demand Measured as Additional Power Above Empty Demand Kw. | Level Belt Demand Measured as Additional Power Above Empty Demand Hp. | Constant Kw. per 100 Tons per 100 Ft. based on Column 13 Kw. 100T/100 Ft. | Constant Kw. per 100 Tons per 100 Ft. based on Column 13 Hp. 100T/100 Ft. | Kw. per 100 Ft. of Conveyor Empty Belt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 786 | 43.4 | 6,346 | 460 | 368 | 352 | 1,080 | 19.2 | 51.6 | 39.8 | 11.8 | 14.2 | 0.139 | 0.167 | 2.44 |
| 2 | 417 | 8.3 | 6,418 | 174 | 360 | 327 | 1,180 | 12.8 | 14.1 | 8.3 | 5.8 | 7.0 | 0.118 | 0.142 | 3.35 |
| 3 | 321 | 4.8 | 6,460 | 144 | 350 | 326 | 1,192 | 12.8 | 9.3 | 4.9 | 4.4 | 5.3 | 0.115 | 0.138 | 4.00 |
| 4 | 1,028 | 19.9 | 6,500 | 410 | 395 | 350 | 1,115 | 24.0 | 35.0 | 18.9 | 16.1 | 19.3 | 0.140 | 0.168 | 2.33 |
| 5 | 1,101 | 21.1 | 6,854 | 420 | 390 | 333 | 1,235 | 27.0 | 36.7 | 22.2 | 14.5 | 17.5 | 0.105 | 0.128 | 2.45 |
| 6 | 1,496 | 4.2 | 7,122 | 410 | 370 | 350 | 1,222 | 31.1 | 29.0 | 4.4 | 24.6 | 29.5 | 0.134 | 0.178 | 2.09 |
| 7 | 1,402 | −12.2 | 6,884 | 330 | 395 | 389 | 1,060 | 28.8 | 17.5 | −11.0 | 28.5 | 35.2 | 0.192 | 0.230 | 2.05 |
| 8 | 1,499 | 1.5 | 6,750 | 400 | 415 | 361 | 1,120 | 28.8 | 27.9 | 1.4 | 26.5 | 31.8 | 0.158 | 0.189 | 1.92 |
| 9 | 939 | 11.1 | 7,032 | 358 | 376 | 361 | 1,142 | 25.6 | 26.0 | 10.8 | 15.2 | 18.2 | 0.142 | 0.170 | 2.73 |
| 10 | 1,410 | 12.3 | 7,883 | 440 | 389 | 354 | 1,336 | 24.0 | 37.0 | 14.0 | 23.0 | 27.6 | 0.122 | 0.147 | 1.70 |
| 11 | 1,513 | 3.2 | 7,250 | 400 | 388 | 359 | 1,212 | 28.8 | 30.2 | 3.3 | 26.9 | 32.2 | 0.146 | 0.176 | 1.90 |
| 12 | 1,321 | 29.6 | 7,271 | 530 | 375 | 340 | 1,282 | 32.0 | 52.0 | 32.3 | 19.7 | 23.6 | 0.116 | 0.139 | 2.42 |
| 13 | 1,325 | 22.9 | 7,252 | 480 | 374 | 342 | 1,272 | 26.5 | 47.2 | 24.8 | 22.4 | 26.9 | 0.132 | 0.159 | 2.00 |
| 14 | 1,342 | 24.4 | 7,085 | 490 | 377 | 345 | 1,232 | 26.0 | 49.0 | 25.6 | 23.4 | 28.0 | 0.141 | 0.169 | 1.94 |
| 15 | 1,296 | 25.4 | 7,341 | 500 | 367 | 334 | 1,320 | 24.0 | 49.9 | 28.5 | 21.4 | 25.7 | 0.125 | 0.150 | 1.85 |
| 16 | 1,263 | 27.9 | 7,939 | 430 | 400 | 350 | 1,362 | 26.4 | 50.1 | 32.3 | 17.8 | 21.4 | 0.103 | 0.124 | 2.09 |
| 17 | 1,366 | 19.1 | 6,225 | 440 | 355 | 340 | 1,100 | 26.0 | 42.0 | 17.9 | 24.1 | 28.9 | 0.100 | 0.192 | 1.90 |
| 18 | 1,301 | 34.0 | 7,235 | 520 | 370 | 363 | 1,196 | 24.0 | 53.3 | 34.6 | 18.7 | 22.5 | 0.120 | 0.144 | 1.84 |
| 19 | 1,243 | 36.0 | 7,847 | 650 | 375 | 353 | 1,334 | 28.8 | 71.7 | 40.8 | 30.9 | 37.1 | 0.186 | 0.223 | 2.32 |
| 20 | 558 | 20.7 | 7,421 | 307 | 440 | 283 | 1,575 | 12.8 | 48.7 | 27.8 | 20.9 | 25.1 | 0.238 | 0.285 | 2.30 |

Belts in this system have a capacity for handling 1,500 tons per hour when running at a speed of 500 ft. per minute. Ordinarily about 1,000 tons of coal is continuously in transit and 1,500 hp. is required to operate this conveyor system. Only one belt in the entire system, No. 7, has a net drop and this amounts to only slightly over 12 ft. All of the others lift the coal the total amount of this elevation varying from 1½ ft. in belt No. 8 to over 43 ft. in belt No. 1. Belts Nos. 1, 2 and 3 are fitted with a single-pulley type of drive; all other sections have tandem drives. All tandem-drive gears boxes are duplicates.

All the various belt sections are geared together, the head pulley of one section being connected to the tail pulley of the next section. Thus should any belt cease running, a ratchet will come into engagement and the section behind must either drive the one ahead or must also stop. This prevents the piling up of the coal in the chutes.

Adequate protection from falls of roof is afforded throughout the length of the conveyor tunnel by steel timbering where local conditions demand and by brick arches where high caving has taken place.

This conveyor system receives its coal from bins


22,900'
Dumps 10' Diameter x 374' long for 35 mine cars
Track level
Compressor
No. 20 Conveyor 60"x 558' under feeders
1,200 Tons storage
Longitudinal Section of Twin Rotary Dumps and 34 Apron Feeders at Point "A" Below
Conveyor No. 11 48"x 1,513'
Conveyor No. 12 48"x 1,321'
Conveyor No. 13 48"x 1,325'
Conveyor No. 14 48"x 1,342'
Conveyor No. 15 48"x 1,296'
Conveyor No. 16 48"x 1,263'
Conveyor No. 17 48"x 1,366'
Conveyor No. 18 48"x 1,301'
Conveyor No. 19 48"x 1,243'
Conveyor No. 20 60"x 558'
Plan of belts
Ground Line
Borehole
Borehole
800
750
700
650
600
550
500
Elev. in Feet
1,000 Tons of coal in transit, requiring about 1,500 hp. traveling 500 ft. per minute
3 Miles
4 Miles
Dump point "A"
Section

he Frick Underground Coal Conveyor System

tipple resembles a railroad tipple. Thus barges are floated under it and loaded by eight chutes working simultaneously. A barge can be loaded out in 10 minutes. It can be moved up or down stream by means of a barge mover.

under a rotary dump 374 ft. long or capable of discharging 35 to 40 mine cars simultaneously. This dump is operated by compressed air, the compressor being located near its inner or river end. The No. 20 belt is fed from the bin or hopper beneath this dump by 34 duplicate feeders, driven by a single motor. This hopper is capable of holding 1,250 tons of coal.

At the opposite end of the conveyor system the coal is delivered to a tipple on the Monongahela River where barges are loaded. These barges are 26 ft. wide and 175 ft. long. Each is capable of carrying 850 tons of coal. Each storage bin at the tipple is capable of holding 1,200 tons. Coal is delivered to each barge by means of 8 chutes operated simultaneously. A barge thus can be loaded out in 10 minutes. Each shuttle conveyor on the tipple can handle 1,000 tons of coal per hour. All gates and chutes as well as the barge mover are controlled from the operator's room under the bins.

From the time when this conveyor system was first installed up until July 1, 1925, it had handled a total of 2,598,304 tons of coal. This meant an average daily performance of approximately 10,500 tons. In the light of such a performance it is not strange that other similar installations are being seriously considered both by this and other coal producing companies.

## Are Separate Traveling Ways A Safety Factor?

Separate traveling ways should be provided in mines, and should be on intake air. Employees walking along haul roads are exposed to hazards, even where standard clearance and shelter holes are provided, Frank Hillman, safety inspector for the Woodward Coal and Iron Co., Mulga, Ala., told the Mine Inspectors' Institute of America at the Peoria convention this year. Today, electric haulage is the means of transportation of coal in many mines. Longer trips are hauled at a higher rate of speed. And in case of derailment, cars usually get over in the clearance space. Even where shelter holes are provided, we are not always sure that the employee will get in one when he sees or hears the trip coming. Then again, where electric haulage is used, the trolley wire is usually placed on the side of the entry opposite the traveling side. In many mines the wire is about 5 ft. above the level of the track and is not shielded. When tools are carried by hand, such as bars or drills, there is the hazard of striking the wire and causing an accident. Then again, an employee may strike the wire with his head. I have known of fatal accidents from this cause.

Where rope haulage is used, there is danger of stepping on a roller, or, in the opening under it. During hoisting time the rope may rise up, or where it is on a grade, cars may break loose and run back.

Several years ago I investigated an accident where an electric motor was pulling a long trip of loaded cars up a grade, when near the top the coupling broke, part of the trip ran back to the bottom of the grade, where it wrecked at the mouth of a heading. The cars struck a number of miners, on their way to working places, causing the death of four and injury to seven.

In producing headings, the haulage hazard is not as great, due to the smaller number of men traveling, and fewer number of cars and trips. And as miners enter their working places at different points, it would entail a heavy expenditure to provide a separate traveling way.

**This Mine Adds to Its Life by Going Deeper to Another Bed of Coal**

About 18 months ago, at No. 1 mine, the Norton Mining Co., or Nortonville, Ky., started production from the No. 9 bed. At present this coal is brought up through the 280-ft. shaft, the low, wooden headframe of which is seen at the left in the illustration. Work is about to start in driving a shaft, 80 ft. upward, to connect with the bottom of the 200-ft. main shaft of the No. 11 bed. A hole has been drilled from the bottom of the old shaft down to the No. 9 seam. This will serve to check the location and to help to dispose of any gas encountered. The newly-extended, two-level shaft will be the main hoisting shaft for both measures. The 165-ft. smokestack, seen at the right, was but recently completed. It will furnish natural draft for the new power plant now under construction. A new steam hoisting engine will be installed as soon as the shaft is extended to the lower level. The Norton Mining Co. is a subsidiary of the Monro-Warrior Coal & Coke Co.

# Coal Stripping in West Kentucky

By J. H. Edwards
Associate Editor, *Coal Age*,
Huntington, W. Va.

In the headpiece one of the two coal-producing units employed at the Dempster mine is shown in operation. The 54-in. bed of clean coal lying practically level is dug from the solid by a shovel with a 2-cu.yd. dipper. A berm is left to support the loading track, the coal shovel being kept a few hundred feet in rear of the stripper, thus assuring sufficient track space for the empty cars.

FROM HIGHWAY and railroad contracting to coal stripping is a natural step for the five Dempster Brothers who now operate one of the largest strip mines in the country. One of the secrets of successful contracting is the wise selection and intelligent application of high-capacity equipment. A few years ago the steam shovels used by such contractors were considered marvels of size and strength. Today they are dwarfs beside the huge stripping shovels used in daylight mining. Coal stripping is primarily an excavating rather than a mining problem. As a result it has fallen to men experienced in excavating to take the lead.

The stripping operation of the Dempster Coal Co. is located at Dempstertown, near Earlington, in the West Kentucky field. In this vicinity the No. 9 bed outcrops in places. Over large areas it is covered by a rather soft overburden less than 75 ft. in thickness. This is unfavorable to underground mining but favorable to stripping. The acreage leased by the Dempsters is owned by the West Kentucky Coal Co. This firm, although a large producer, confines its activity to underground work, leaving the recovery of its shallow coal to interests such as those represented by the Dempster organization.

The coal bed at Dempstertown averages 54 in. in thickness and is free from partings. It lies practically horizontal, but the overburden is by no means uniform in thickness. The surface ordinarily would be called "rolling" ground. This means that, in general, it is not possible to prosecute mining on a straight line but instead it must be advanced in irregular fashion conforming to the surface topography.

The method followed is to take a development cut around the outcrop, that is as close to it as the quality of the coal will permit, then to make successive cuts toward the center of the hill until the entire area is mined or until a point is reached where the overburden is too thick for economic removal.

The large stripping shovel is followed by a small one that loads the coal, directly from the solid, into side-dump cars. The entire strip of coal exposed by the spoil shovel is not loaded but a berm, upon which the haulage track is located, is left along the advance side. Usually the coal is kept loaded out to within about 200 ft. of the stripper. It is necessary to maintain a certain distance in order to have track space for the trip of empties being loaded.

Each producing unit consists of a stripping shovel, a coal-loading shovel and the necessary cars and locomotives for hauling the coal to the tipple and keeping empties spotted within reach of the coal-loading machine. Two complete units of this kind are in use at the Dempster mine. The smaller consists of a Bucyrus model 225 stripping shovel followed by a model 50-B loader. This equipment is shown in action in the headpiece. A 6-cu.yd. bucket is used on the stripper and one of 2 cu.yd. capacity on the smaller machine which is a loader.

The larger unit consists of a Marion model 350 stripping shovel and a model 27 loader, of the same make. Figs. 1 to 5, inclusive, illustrate this equipment. The large stripping machine weighs 438 tons, and when shipped from the factory formed a load for 14 cars. The boom is 90 ft. long and the dipper stick 68 ft. The weight is carried on double-flanged wheels, four to a

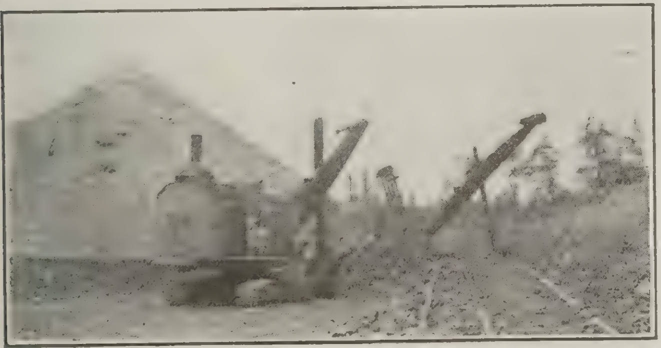


**Fig. 1—The Noon-Hour Shutdown**

Stripping operations require large capital investments and consequently shutdowns of whatever nature are costly. From the mine owner's standpoint the operating crew's luncheon is an expensive meal. The long reach of the stripping machine is emphasized by the size and height of the spoil bank at the left in the illustration.

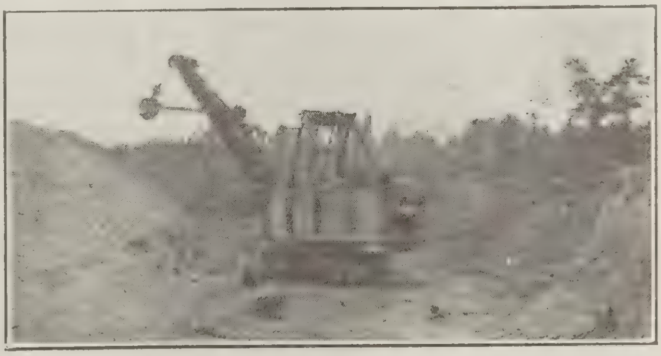


**Fig. 2—Cutting Around the Outcrop**

At the point here shown the overburden does not exceed 25 ft. in thickness, whereas in other parts of the property as much as 65 ft. is sometimes encountered. The coal is immediately overlain with a hard shale but the dipper dislodges this formation without the aid of explosives. Sizable trees and large stumps seem merely to whet the stripper's greedy appetite.

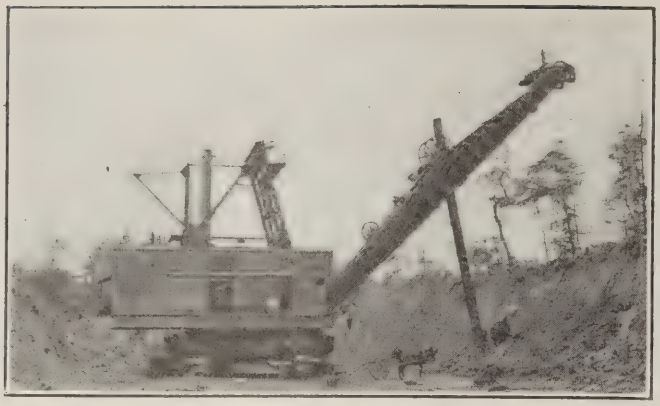


**Fig. 3—The Giant at Rest**

This is one of the largest stripping shovels yet produced. As shipped from the factory knocked down, it formed a load for 14 railroad cars. The mule below the boom is not a miniature or toy type but a good-sized draft animal.

truck, with a truck at each of the four corners of the under frame. Each truck is connected to the machine through the medium of a hydraulic jack, which facilitates leveling. All wheels are drivers, and the track on which they operate consists of 6-ft. lengths of 120-lb. rail. No ties are used, the rails being laid directly upon the top of the coal.

This "350" shovel was designed for an 8-cu.yd. bucket, but one of 6-cu.yd. capacity has been substituted in order to make it possible to dig most of the overburden without shooting. In Figs. 1, 2 and 3, the large shovel is shown making a development cut around the outcrop of a new territory. The maximum thickness of overburden in such a cut is not over 25 ft. as contrasted to 65 ft. which is the greatest that the shovel has handled to date.

Picking and preparation of the coal produced is accomplished at the modern, four-track, 2,500-ton tipple shown in Fig. 6. Loading facilities consist of two booms, an egg chute and a nut chute. The usual sizes shipped are 6-in. lump, 6x3-in. egg, 3x1¼-in. nut and 1¼-in. screenings. The production record to date is 2,430 tons loaded in 7½ hours.

This production was reached in less than two years after February, 1923, when preliminary work was begun on the development of the mine. This is a good record considering the fact that much construction work was necessary. A water supply for the steam equipment was provided by building a dam, and erecting a pumping station that forces the water through several miles of pipe line from the artificial lake to the mine. Other necessary construction included the tipple, an office and commissary, a club house, and 80 dwellings.

Exact figures as to the number of men required to produce 2,500 tons per day at a strip mine such as the one described are not available because up to the present many of the employees have been spending all or part of their time on construction work. A careful estimate would place this number at 75. This includes tipple men, office help and all other persons actually engaged in production, preparation and shipping of coal. This means an average of 33 tons per man.

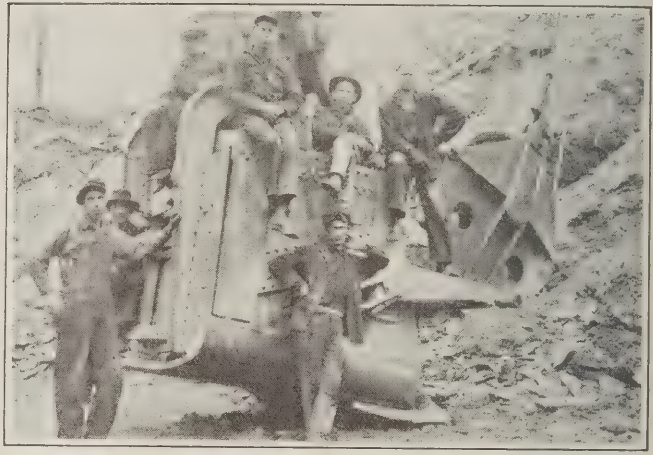


**Fig. 5—The "Business End" of the Stripper**

A 6-cu.yd. bucket is neither toy nor feather weight. The operating crew consented to forego the joys of their dinner pails long enough to get into this picture in order to show the relative size of the dipper. If the overburden were shot before stripping an 8-cu.yd. bucket could be used on this machine.

While it is generally conceded that coal can be produced at a lower cost by stripping than by underground mining, sight should not be lost of the large investment

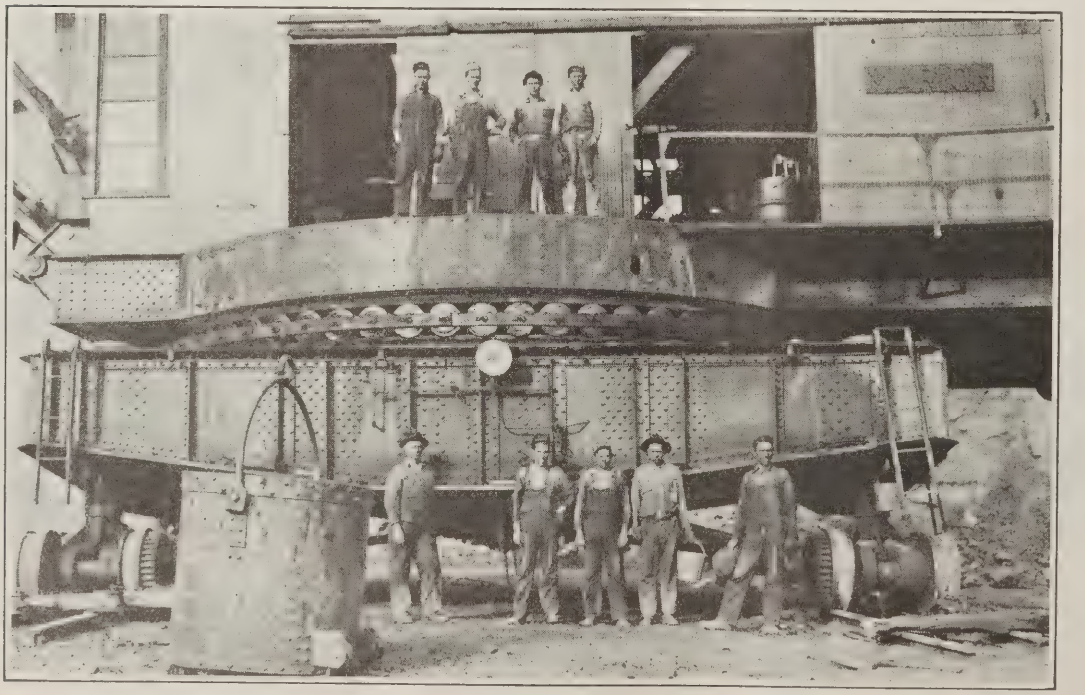


FIG. 4

**The Underframe**

Four trucks support the shovel. Each truck has four double-flanged driving wheels carried in a frame that acts against the plunger of a hydraulic jack. Interconnection between the four jacks makes leveling of the deck frame rapid and easy. The track over which the shovel moves consists of 6-ft. lengths of 120-lb. rails laid directly on the top of the coal without ties, bridles, anti-spreaders or other supporting or holding devices.

FIG. 6

**The Preparator**

In the early stages of the coal stripping art the product of open pits acquired a bad reputation. Therefore it behooves present-day operators to exercise special care in their preparation. This 2,500-ton four-track tipple is equipped with screening equipment and picking tables assuring careful preparation of the mine product.

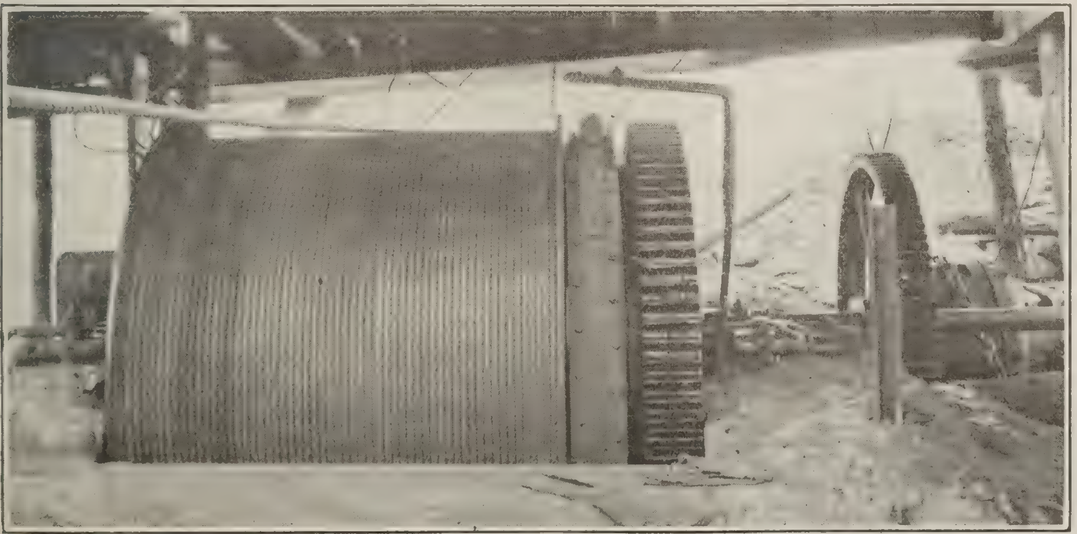
necessary at a modern strip mine. One large revolving stripper, alone, costs approximately $100,000, while the loaders represent a proportionately smaller outlay. Such a plant as that operated by the Dempster Brothers involves a capital charge running up to several hundred thousand dollars.

## Stay Out of Abandoned Mines, Bureau Warns Public

Warning against entering any place where the air does not circulate unless one is first assured that it contains enough oxygen to support life, is given by Dr. Thomas T. Read, safety service director of the Bureau of Mines, Department of Commerce, in commenting on the recent death of three persons who entered a well near Rockwood, Md., to make repairs to the piping. Wells, abandoned mines, and other confined spaces where the air does not circulate may be filled with black damp, and the incautious person who ventures into them may be asphyxiated. Black damp is a miner's term for air that has become depleted of its oxygen and consists mainly of nitrogen and carbon dioxide. It is not poisonous, but, being heavier than ordinary air, it lies in a confined space like so much water and a person who goes into it is as effectually cut off from the life-supporting oxygen as if he had gone under water. Unless immediately rescued, he will die as quickly as he would by drowning.

Such accidents are much more common than is generally supposed, Dr. Read continues. Not long ago, one of two men who were strolling near Summerville, Ala., walked a few yards into the slope of an abandoned mine. His companion saw him fall and, instead of immediately trying to rescue him, ran to a nearby house for help. By the time help was obtained the man was dead. Last autumn a boy delivering bread for a bakery stopped at an abandoned mine, near a highway between Culbertson and Froid, Mont., and climbed down the ladderway. He was overcome by black damp. Another boy who tried to rescue him was also overcome, and by the time help reached them both were dead. Many other similar cases might be cited.

Such deaths could be avoided if people would not enter abandoned mines, wells, and such places unless they have some definite duty to perform there, it is pointed out. If it is necessary to enter a place of this description, it is easy to test for the presence of black damp by lowering a lantern to the point at which it is desired to go. If the lantern goes out, black damp is present and should be removed before entering. In the case of a well an opened umbrella can be used to bail it out, like bailing water out in a bucket, or a current of air may be set up by any convenient means. But no one should enter until the lantern burns without flickering, after which it will be safe.



**Outside Rope Hoist**

In many cases large haulage-rope systems around the mines accomplish results unattainable by other means. Another advantage lies in the fact that the hoist motor is stationary and the electric or steam control is simple and rugged. In gaseous mines the hoist and motor may be located outside and the coal may be hauled by ropes operating through boreholes.

# Raising Canaries for Gas Tests

### Birds Can Be Raised or Purchased but Former Plan Is Preferable — Two Broods of Young May Be Reared Yearly

By Frank H. Kneeland
Associate Editor, *Coal Age*,
New York, N. Y.

FOR many years past canaries have been almost universally employed in the mines in testing for the presence of carbon monoxide (CO) or white damp. Mice have been similarly used but to a far less extent, not only because they appear to be less sensitive to this deadly gas, but also because their signs of distress are less quickly recognized than are those of a bird. Birds sit on perches and when overcome fall off. This is unmistakable evidence to man that unless provided with a gas mask he is in danger.

In order to have always on hand a number of canaries ready for any emergency several coal companies raise birds of their own. Doubtless many others would follow the same procedure rather than buy birds when needed if only the art of successfully rearing the young were better understood. The following is written largely from notes given by a man who for years has had charge of the canaries as well as the safety apparatus and equipment of a large coal company.

It is preferable but not absolutely necessary to keep canaries at some point near that where the breathing apparatus is stored. In all probability both birds and helmets if ever needed at all will be needed simultaneously. For this reason they should not be far separated. The building in which the birds are kept should be both sunny and well ventilated but its temperature should never be allowed to fall below the freezing point.

## Overfeeding Should Be Avoided

A full grown canary, like a dog or a man, should be fed just a little less than he wants to eat. Fat birds are less satisfactory than those in the best of condition. Most canaries eat about a teaspoonful of mixed bird seed per day. This can be purchased ready mixed at any pet store as well as at many feed stores. Birds should be fed once and watered twice daily.

In addition to their allowance of seed or dry food they should be given all the green stuff—lettuce, chickweed, spinach and the like—that they will eat. If this is not available, as may be the case during the winter, apples or pears cut into chunks or slices may be given in its stead. Cuttle-fish bone and sand should be kept in the cages at all times but the latter should be changed periodically, say every two or three weeks.

Canaries also should be fed a tonic consisting of anise seed, dried blood, meat scraps and the like. Some birds will eat such a tonic with moderation and as a result can have it before them all the time. Others will devour it to excess and consequently should be fed with it only periodically. A tonic of the kind above mentioned may be purchased ready prepared being known as "bird manna."

A shallow basin or dish of water should either be kept in the cage at all times or be introduced at regular intervals, say once a day. Apparently some birds do not care to wash themselves while others delight in it, habitually bathing several times a day if given the opportunity.

Cages should be thoroughly cleaned at least once a month. Cleaning at much more frequent intervals tends to make the birds nervous or "skittish." The less canaries are handled the more satisfied and contented they are. A cage that can be detached from its bottom and be lifted from it greatly simplifies the cleaning process.

The mating season begins in the latter part of March or early in April. Two to three weeks before birds are to be mated their cages should be hung close together or the birds should be placed in a double cage with a partition between them. They should be thus hung for two or three weeks before being put together. Unlike the common barnyard fowl the canary is a monogamist, that is, he will tolerate only one mate at a time. To put a male bird into a cage with two or more females is certain to cause trouble.

## Fruit Strainer Used for Nest

About the first of April birds that have become acquainted with each other by occupying adjacent cages as above outlined, may be placed in the same cage. Almost immediately it is necessary to prepare a nest. An ordinary metal gauze fruit strainer answers the purpose excellently. This should be padded with cotton and covered with some hard-surfaced cloth such as canvas. Any soft fabric will cause trouble by catching the birds' claws.

No matter how carefully such a nest may be prepared the birds will try to improve upon it by lining it with material of their own choosing. They prefer something fibrous and in order to supply them with the necessary material it is well to place within the cage a small piece of untwisted rope or a little coarse horsehair.

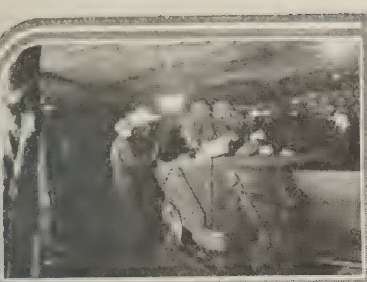
Ordinarily four or five eggs will be laid before the female begins setting. As soon as the hen starts to set the male should be removed but hung in a cage close at hand so that each bird can see the other. The eggs will hatch in from thirteen to fourteen days after the last one has been laid.

As soon as the young birds are hatched ¼ of a hard boiled egg mashed fine and containing both white and yolk should be placed within the cage in a separate dish from that containing food for the adult bird. This ration should be continued until after the young birds start eating for themselves. The mother should be separated from the brood as soon as the young birds have learned to eat which will be in about four to five weeks.

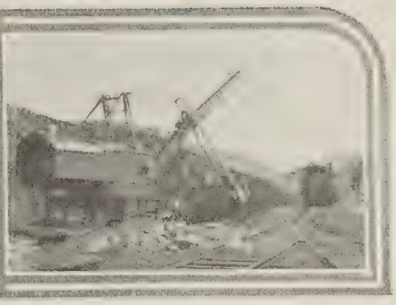
## Two Broods May Be Raised

For the young birds when they begin eating, the bird seed should be soaked in cold water for two or three hours before feeding. This should be continued until their bills get hard enough to crack the dry seed, after which it is not necessary. The mother bird may be bred a second time immediately after the first brood is taken away.

In breeding, the mating of two birds from the same brood or from different broods from the same parents should be carefully avoided as this degenerates the stock. As singers male canaries far excel the females, but so far as sensitiveness to carbon monoxide is concerned there is no noticeable difference between the sexes. A light-colored bird, however, is more sensitive to gas than a dark one. A dark-colored bird has been known to survive, without apparent ill effect or injury, a gas mixture that killed a light-colored bird almost instantly.



# News Of the Industry



## Effort to Call Out Non-Union Men In West Virginia Will Fizzle, Say Operators; Summonses for Lewis

While considerable comment is heard in northern West Virginia over the proposed call extended to the non-union coal miners to strike and join the union on Sept. 25, and the visit of John L. Lewis, international president, the following day, coal operators generally do not expect much of a strike. The United Mine Workers, however, is holding a series of mass meetings in various sections of the field to renew interest in the organization and talk strike activities.

Meetings were held recently at Monongah, Rivesville, Lowsville, Grant Town, Kilarm, Watson, Kingmont, Farmington, Dakota, Barnesville, Ida May, Enterprise and other towns.

In commenting on the proposed strike Van A. Bittner, international representative, said: "The response to the strike call which will become effective on Sept. 25, 1925, will be greater than that of April 1 and, from reports coming in from our field workers and the men in various non-union mines, we are almost certain to get a 100 per cent response. The coal companies that are operating non-union mines and using the so-called American plan as a smoke screen realize that the strike will be very effective and, as noted in these non-union coal companies' newspaper statements, they are attacking the United Mine Workers in a most vicious manner.

"Invitations have been sent to all district presidents to have delegations attend the demonstration in Fairmont on Sept. 26 and every district under the jurisdiction of the United Mine Workers will have delegations present at the demonstration.

"A written permit to hold a parade in Fairmont on Sept. 26 was granted the United Mine Workers by Mayor Thomas F. Buckley. It is expected that at least 30,000 people will take part in the parade and at least 10 bands will furnish the music."

Coal operators predict that the new strike will fizzle out like the one on April 1. A reaction will then set in, they say, which will cause the striking miners to sour on the union and return to work. The backbone of the union in the region at present consists of foreigners and it is predicted that many of these radicals will never again be given employment by coal operators in this field.

Philip Murray, international vice-president, and Thomas Kennedy, international secretary and treasurer, will take part in the demonstration of Sept. 26.

A second attempt was made to burn down the tipple of Eureka mine of the Bertha-Consumers Co., at Maidsville, near Morgantown, on Sept. 15. A ball of lighted oil-soaked waste was tossed into the plant by two men, who made their escape, according to the night watchman, who extinguished the blaze.

In the first four days of last week the non-union mines loaded 6,300 cars of coal compared to 970 cars loaded by union mines. Coal production eased up somewhat last week due to the late placement of empty coal cars on Sept. 24 on the Monongah Division, B. & O., the first for a long time.

According to reports received from Morgantown during the latter part of last week if John L. Lewis comes to Fairmont on Saturday a series of summonses will be served upon the union chief on injunctions issued against him and other union officials by the Monongalia, Harrison and Marion Circuit courts. The Continental Coal Co., the Chaplain Collieries Co., the Brady-Warner Coal Corporation and the Shriver Coal Co. are among the companies that have obtained injunctions.

### "Yellow Dog" Is Now a "Wienie"

While injunctions don't permit miners to use the term "yellow dog," the union pickets have adopted a substitute in the word "wienie," the common name for frankfurter. The use of this term recently caused a disturbance for which a non-union miner employed at the Dawson Coal Co., at Lyon, was arrested and fined $20.

The Chesapeake mine of the Fairmont-Chicago Coal Co., at Barrackville, will reopen on a non-union basis this week. It formerly worked non-union, but closed down six weeks ago.

The Consolidation Coal Co. will resume operation at Baxter mine this week on an open shop basis, it is reported. This mine was closed down for some time.

The Kelly Creek Collieries Co., in southern West Virginia, has notified the members of the United Mine Workers that they may remain in the company houses at Ward, after the company had sued for the property. The union was told not to erect barracks and it is believed that the company will soon effect a settlement, it is reported. The company is connected with the J. A. Paisley interests.

### *Fake Wage-Advance Notices Posted at Connellsville*

The Connellsville coke region was amazed last week by the surreptitious posting of notices at independent operations that the Frick scale would be restored at those plants on Sept. 21. The authenticity of the notices was promptly repudiated by the operators at whose plants they appeared. The posting was generally considered the work of union sympathizers trying to stir up discontent in the region, which has been one of the question marks in the labor situation since the unexpected walkout in 1922.

Late last year the independent operators raised their wage scales to meet those paid by the H. C. Frick Coke Co. The business that developed, however, would not support the advances and wages were again reduced. At the present time there is said to be little chance that there will be any upward revision.

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## Virginian Denied Injunction

The injunction sought by the Virginian Ry. to restrain the Interstate Commerce Commission from applying through Western freight rates on carload shipments by way of the Chesapeake & Ohio Ry. was denied Sept. 19 by a special court at Richmond, Va., sitting for the Southern District of West Virginia.

The Virginian desired to establish through Western rates on coal by way of the Norfolk & Western. The court held that the commission had exclusive jurisdiction as to whether the shipments originating on the Virginian should be routed by way of the Chesapeake & Ohio or the Norfolk & Western.

Judge McClintick, of the federal District Court of Southern West Virginia, dissented from the order, which was read by Judge Waddill of the U. S. Circuit Court of Appeals.

The order of the commission was entered on May 19 to become effective June 25. It was sought by West Virginia coal operators and shippers, who claimed the Chesapeake & Ohio route would afford them better facilities.

After the decision Sept. 19, the Virginian sought an interlocutory injunction, pending appeal.

## Strikers in Oklahoma Determined to Win; Picketing Is Orderly

A rumor was in circulation Sept. 16 that Henryetta (Okla.) miners were breaking with the union and that a group there had declared that they would abandon the strike instituted by the United Mine Workers. The rumor is emphatically denied by union officials.

Heavy picketing on the part of striking union miners and sympathizers is the only development in the McAlester-Hartshorne-Wilburton coal area, according to Sheriff Will Anderson, who is keeping in touch with the situation. The picketers are meeting both morning and evening now in an effort to get the working miners to join the ranks of the strikers.

The number of men working in the mines remains practically the same, according to reports. In the meantime the state is maintaining its observation in the county to determine if troops should become necessary. So far union men have been peaceful and little disorder has been reported.

Owners of the Rock Island mines are to have a conference in Oklahoma within the next few days, at which time coal contracts for the future will be considered. It is known that a temporary agreement made with Kentucky mine owners is being considered from the standpoint of permanency. It is believed the conference will be of vital interest to the people in this part of the state.

The union miners in the Henryetta field are as determined as ever to win the strike, in the opinion of Andrew Steele, international representative from Missouri, who accuses the operators of bringing non-union workers from Henryetta to the mines in Pittsburg County in an effort to make a showing of men at work in the mines here.

James A. Reed, U. S. Senator from Missouri, and Prince Freeling, former Attorney General of Oklahoma, have been added to the list of legal counsel of the United Mine Workers of Oklahoma and Arkansas to defend the organization and its members in cases growing out of the open-shop wage war going on between the union men and the operators, it has been announced by union officials.

Reed will have charge of the Kansas City proceedings wherein $18,000 belonging to the mine workers has been tied up in the Commerce Trust Co. of Kansas City through injunction proceedings instituted at Fort Smith, Ark. In this case a receiver is asked for the district No. 21 organization of Oklahoma and Arkansas. The Chancery Court there issued an order prohibiting the organization from interfering with its deposit in Kansas City.

*© Keystone View Co.*

**Sanders A. Wertheim**

President of Burns Bros., New York's largest coal dealers, as he embarked on the Cunard liner "Berengaria" for London, Paris and Rome, Sept. 16, said that if the hard-coal strike was not settled by Oct. 1 he would arrange for the shipment to this country of 50,000 tons of Welsh coal per month. Mr. Wertheim said the real object of his trip was a pilgrimage to the Holy Year festivities in Rome.

## Banning No. 1 Mine Opens; Working Force Growing

The Pittsburgh Coal Co., extending its operations with the 1917 scale as the basic condition, has started another mine in the Pittsburgh district. Much to the surprise of the company officials, the new operation, in so far as labor is concerned, proved an instantaneous success.

The day announcement was made that Banning No. 1, at Van Meter, Pa., two miles from Banning No. 2, had started up on the 1917 scale, there was a flow of men to the mine and some even came to the general offices of the company in Pittsburgh. The first day of operation, Wednesday, Sept. 16, 29 men went to work, but on Thursday there were 105 men at work and this had climbed on Friday to 141 men.

On Saturday 212 tons of coal was produced at Banning No. 1, with 138 men at work. On the same day a new record at Banning No. 2 was made with the production of 800 tons.

Banning No. 1 mine was closed in May of this year, one of the last mines to be held open in the face of the Jacksonville wage scale, which, according to company officials, combined with Southern field competition, made it financial suicide to continue operation.

In opening the second mine, the company carried out the policy adopted on Aug. 20, when the first mine was placed in operation. It was announced at that time that other mines would be started as soon as a sufficient number of former employees at any mine petitioned the company to return to work.

Banning No. 1 mine is located on the Youghiogheny division of the Pittsburgh & Lake Erie R.R. Part of the mine property is in Fayette County and part in Westmoreland County.

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The Boston & Maine Ry. has rejected all bids for 5,000,000 tons of railroad fuel for delivery within the next five years and is receiving new bids at the offices in Boston.

## Byproduct and Beehive Coke Produced in the United States, 1924

(Exclusive of screenings and breeze)

| State | Byproduct |  |  |  | Beehive |  |  |  | Total |  |
|---|---|---|---|---|---|---|---|---|---|---|
|  | Ovens in Existence | Coal Used (Net Tons) | Coke Produced (Net Tons) | Value of Coke at Ovens | Ovens in Existence | Coal Used (Net Tons) | Coke Produced (Net Tons) | Value of Coke at Ovens | Coke Produced (Net Tons) | Value of Coke at Ovens |
| Alabama | 1,196 | 6,375,171 | 4,386,372 | $16,563,223 | 6,199 | 256,240 | $154 686 | $840,843 | 4,541,058 | $17,404,066 |
| Colorado | 120 | 754,790 | 523,405 | (a) | 1,696 | 330,226 | 212,115 | (a) | 735,520 | (a) |
| Georgia | ..... | ......... | ......... | ......... | 151 | 14,400 | 8,081 | 71,355 | 8,081 | 71,355 |
| Illinois | 739 | 3,397,248 | 2,355,474 | 20,187,519 | ..... | ......... | ......... | ......... | 2,355,474 | 20,187,519 |
| Indiana | 1,133 | 5,828,314 | 4,272,435 | 30,394,497 | ..... | ......... | ......... | ......... | 4,272,435 | 30,394,497 |
| Kentucky | 108 | (b) | (b) | (b) | 795 | 146,794 | 79,248 | 455,532 | (b) | (b) |
| Maryland | 300 | 1,103,984 | 810,118 | (a) | ..... | ......... | ......... | ......... | 810,118 | (a) |
| Massachusetts | 400 | 574,632 | 397,640 | (a) | ..... | ......... | ......... | ......... | 397,640 | (a) |
| Michigan | 420 | 2,408,925 | 1,770,547 | 11,914,028 | ..... | ......... | ......... | ......... | 1,770,547 | 11,914,028 |
| Minnesota | 220 | 744,567 | 514,674 | 4,903,891 | ..... | ......... | ......... | ......... | 514,764 | 4,903,891 |
| Missouri | 64 | (b) | (b) | (b) | ..... | ......... | ......... | ......... | (b) | (b) |
| New Jersey | 202 | 1,202,732 | 869,120 | (a) | ..... | ......... | ......... | ......... | 869,120 | (a) |
| New Mexico | ..... | ......... | ......... | ......... | 1,030 | 136,212 | 83,070 | (a) | 83,070 | (a) |
| New York | 686 | 2,265,062 | 1,600,669 | 11,108,944 | ..... | ......... | ......... | ......... | 1,600,669 | 11,108,944 |
| Ohio | 1,689 | 8,422,760 | 5,723,074 | 31,008,209 | 205 | 168,648 | 109,625 | (a) | 5,832,699 | (a) |
| Oklahoma | ..... | ......... | ......... | ......... | 300 | ......... | ......... | ......... | ......... | ......... |
| Pennsylvania | 3,420 | 12,555,568 | 8,426,155 | 34,674,512 | 36,030 | 12,989,648 | 8,501,282 | 37,893,584 | 16,927,437 | 72,568,096 |
| Rhode Island | 40 | (b) | (b) | (b) | ..... | ......... | ......... | ......... | (b) | (b) |
| Tennessee | 24 | 104,314 | 75,720 | 376,328 | 1,555 | 249,293 | 131,755 | 635,736 | 207,475 | 1,012,064 |
| Utah | 33 | 190,035 | 97,350 | (a) | 819 | 268,808 | 159,744 | 1,310,929 | 257,094 | (a) |
| Virginia | ..... | ......... | ......... | ......... | 3,234 | 769,990 | 485,064 | 2,343,081 | 485,064 | 2,343,081 |
| Washington | 20 | 70,968 | 39,903 | 283,710 | 408 | 49,339 | 31,712 | 289,934 | 71,615 | 573,644 |
| West Virginia | 311 | 1,484,951 | 998,914 | 4,402,186 | 8,010 | 534,712 | 329,655 | 1,646,452 | 1,328,569 | 6,048,638 |
| Wisconsin | 288 | (b) | (b) | (b) | ..... | ......... | ......... | ......... | (b) | (b) |
| Combined States | ..... | 1,578,318 | 1,121,908 | 9,387,943 | ..... | ......... | ......... | ......... | 1,201,156 | 9,843,475 |
| Undistributed | ..... | ......... | ......... | 20,485,019 | ..... | ......... | ......... | 2,864,106 | ......... | 55,668,263 |
|  | 11,413 | 49,061,339 | 33,983,568 | $195,690,009 | 60,432 | 15,914,310 | 10,286,037 | $48,351,552 | 44,269,605 | $244,041,561 |

(a) Included under "Undistributed." (b) Included under "combined states."
Compiled by U. S. Bureau of Mines.

# Politics to Affect Hard Coal Strike, Washington Believes; Tardy Buying Of Substitutes Causes Concern

**By Paul Wooton**
Washington Correspondent of *Coal Age*

Outwardly the anthracite situation is so calm that the man in the street is forgetting that a strike is in progress. Prices of coal are not rising noticeably. The people throughout most of the country's area have been sweltering and have given little thought to the winter. Absolutely no public pressure has been brought to bear on the situation.

There are indications, however, that something is going on beneath the surface. The belief is growing that this strike is going to turn on political considerations and on political understandings. There is no sign of the issue's having become involved in national politics, but the visits of John L. Lewis to Governor Pinchot—one openly and one privately—indicate that the political leaven is at work. When men who typify controverted questions of public policy, backed by large and determined groups of followers, are engaged in a fight for high federal office, a political development in a single state easily can be forced into the national arena.

Except for the fact that federal agencies dealing with coal are receiving a few more letters than is customary, there is no evidence in Washington that 158,000 men are on strike and that there is a cessation in production of a fuel always heretofore regarded in large areas of the country as essential to life. The position of the administration is becoming increasingly clear. Early news dispatches from Swampscott might have meant anything. Fragmentary replies to questions were interpreted in various ways. The Hearst papers saw in these utterances promises of prompt federal intervention. The conservative press thought they contained assurances that no drastic action would be taken. Later the tone of the Swampscott dispatches became more positive that the administration would not intervene.

### Administration Waiting for Public

Now that the President has returned to Washington, no questions as to coal are being answered at the White House. In fact no federal officials are allowing themselves to be quoted on coal. This is believed to be due to the fact that they do not want observations of theirs to create the impression that the federal government is going to step in and save the situation. They want the public to act in its own interest.

It is apparent that federal officials are watching with concern the failure of the public in the anthracite consuming areas to start the buying of substitutes. Production of soft coal declined during the first week of the anthracite strike. The decline is only partly explained by the Labor Day holiday. It is now apparent that the heavier movement of soft coal in August was not due to the purchase of substitutes but to the accumulation of larger reserves by the steam trade.

Prices of bituminous have reacted only slightly to the strike. The average spot price of the week of Sept. 12 was only 15c. a ton higher than that of a year ago. The quarter from which the highest prices have been offered is not New England. It is not from the North Atlantic seaboard, but is from the Middle West, where but little anthracite has been used for some years. Every check that can be made from current statistics indicates that the buying of substitutes has been very limited indeed.

Those who want to see this strike settled within the industry are glad to note that no delegations of governors are arriving in Washington to ask for help in getting coal. They are pleased at the absence of telegrams from Chambers of Commerce, but they wish the public would become aroused to the extent of filing hurry-up orders with their dealers or local fuel committees for the substitutes they will need to carry them through.

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## Name Subcommittees to Study Mine Bureau Work

As the result of the action at Salt Lake City of Secretary Hoover's advisory committee, representative of the mining industry, subcommittees are engaged in an intensive study of the details of the work of the Bureau of Mines. These subcommittees will report to the full committee late in October at a meeting to be held in Pittsburgh.

By dividing up the work the members of the committee can devote their time to the activities with which they are most familiar. Since it is impractical for the full committee to have frequent meetings, this arrangement provides finished material on which it can act. The subcommittees and the subjects assigned to them are as follows: L. S. Cates and J. F. Callbreath, metallurgy and ore dressing; J. V. W. Reynders, fuel economy; H. Foster Bain and F. P. Hanaway, mining methods; D. M. Folsom, petroleum and natural gas; Mr. Bain, non-metallics; J. G. Bradley and Mr. Hanaway, safety; C. P. White and Mr. Folsom, collection and dissemination of information; Messrs. Bradley and White, economics and statistics; Messrs. Bain and White, service to the government; Messrs. Reynders and White, duplication in activities; Messrs. Cates and Callbreath, consolidation of experiment stations.

The broad scope that the committee's work will cover is indicated further by the decision of the full committee at Salt Lake City to submit recommendations along the following lines:

The advantages and disadvantages of decreasing the number of mining experiment and field stations and concentrating the work at a few centers.

To what extent should the Bureau enter the field of economic studies of the industry?

Should a limit be placed on the amount of the Bureau's funds and the time of its staff which now are absorbed by service to other branches of the government?

How can the pooling and redistribution of technical information be bettered?

How are the "fundamental and underlying problems" of efficiency in the mining industries, on which the Bureau is required by law to do research work, to be delimited? Where should the state or the industry take up the work?

In the safety work is the correct proportion of effort being placed on the work most needed and that most likely to yield results? Is a continuance desirable of the present field work and that on permissibility?

Is it desirable to co-operate with the states in the matter of furnishing technical service to the state mine inspectors?

What safety instructions, demonstrations and educational work should the Bureau conduct?

Should the operation of mine rescue and safety stations be turned over to the states or to the local associations of coal operators?

### To Guard Against Duplication

While the preliminary reports made to the committee indicate that there is little duplication of work between the Bureau of Mines and the other bureaus of the Department of Commerce, the committee decided that it is advisable to make a record of the facts in that connection and to suggest methods which will guard against duplication in the future.

Messrs. Bain and White were requested to submit a special recommendation as to the transfer of functions from or to other bureaus of the department.

At the Salt Lake City meeting of the committee testimony was presented on the general work of the Bureau, on non-ferrous metals, on the Salt Lake City and Reno stations, metallurgical work on Arizona copper, explosives, safety, iron ores and treatment.

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## *Illinois Mine Installs Five Coal Loaders*

The Troy Coal Co., Troy, Ill., has installed automatic loading machines in its mine. The mine is being operated sixteen hours a day, the miners being paid a flat scale. Five new machines have been placed in service. The men working on the machines are paid $8.54 per day for one class of work and $8.04 for another.

With the men working on a flat scale it is not necessary to weigh the coal at the bottom of the mine. The weight is not taken until the coal is loaded into the railroad cars.

## Americans Miss Coal Trade Opportunities in Argentina

Return cargoes do not constitute an indispensable requisite of export trade, in the opinion of H. Foster Bain, who recently completed a study for the Argentine government as to the possibilities of iron and steel making in that republic.

Argentina gets most of its coal from Great Britain. It always has been assumed that the British obtain this business because coal moves in the ships that go out to get wheat. Mr. Bain had occasion to check the import figures covering coal and found that the coal movement was heavier in months when grain was not moving. His inquiry also revealed other instances in which return cargoes are not taken, particularly when they are made up of dissimilar materials.

Mr. Bain thinks Americans could sell more coal in Argentina and other countries if they were to go after the business more persistently. Purchases of British coal are influenced in part by the fact that the railroads and some of the other large consuming industries are British-owned. Their purchasing agents are Britishers with their offices in London. They buy British coal more as a matter of convenience than as a matter of sentiment. If there were no price or other advantage they probably would buy from their own countrymen. The principal objective of a purchasing agent is to make a good showing and the principal objective of a corporation is to produce dividends.

Since American coal can undersell the British product in Argentina under present conditions Mr. Bain thinks agents for American exporters might call upon some of the London purchasing agents of Argentine companies.

There are, of course, other problems to work out. One of them is to teach consumers how to burn American coal to the best advantage. Only one consumer in Argentina uses stokers.

One of the best ways to induce the railroads to burn American coal, Mr. Bain suggests, would be for Americans to get into the transportation game in the southern republic. With a railroad run on American lines to serve as an object lesson, he feels that there would be resort to more American supplies than coal.

## *Will Move Strikers to Idle Mine Villages*

Although the Pittsburgh Coal Co. has served twenty-eight eviction notices on miners at Banning No. 2 mine, eight miles from West Newton, Pa., the company has not evicted any of the men. These men and their families, who owe from two to twenty months rent, will be given the option of being moved to other villages of the company. If it is found necessary to take active eviction steps, sufficient trucks will be provided by the company at its own expense to haul the household goods of each family to a town of its choice where the mine has been closed down because of inability to operate at the wage scale demanded by the leaders of the United Mine Workers. It is understood that many of those served with notices have elected to return to work.

The man who owed the most rent had lived in a company house since December, 1923, without paying a cent. The rent charged is $8.93 a month. Many of the men now working at the Banning mines earn that amount in a single day.

To promote economy, efficiency and unity of direction, the explosives physical testing section, the explosives chemical laboratory, and the liquid oxygen explosives research of the Bureau of Mines, Department of Commerce, will be combined into the explosives section of the Pittsburgh Experiment Station, with G. St. J. Perrott, assistant chief explosives chemist, in charge. Mr. Perrott will give special attention to explosives research and will report to Dr. Charles E. Monroe, chief explosives chemist, through the superintendent of the Pittsburgh Station. Spencer P. Howell, explosives engineer, has been transferred to Pittsburgh to continue work on liquid oxygen and special investigations. J. E. Crawshaw, explosives engineer, will be in charge of physical testing, and C. A. Taylor, associate explosives chemist, will be in charge of chemical testing.

## Average Value of Anthracite Shipped; Local Sales; Colliery Fuel, And Total Output, by Regions, 1922-1924

(Per Gross Ton)

| Year and Region | Shipments | | | | Local Sales | Colliery Fuel | Total Output |
|---|---|---|---|---|---|---|---|
| | Domestic | Pea | Steam | Total | | | |
| 1922 | | | | | | | |
| Lehigh | $8.03 | $5.93 | $2.70 | $6.05 | $3.97 | $2.34 | $5.56 |
| Schuylkill | 8.25 | 6.04 | 2.44 | 5.78 | 4.44 | 0.78 | 4.98 |
| Wyoming | 7.87 | 5.81 | 2.79 | 6.52 | 5.78 | 1.69 | 6.02 |
| Sullivan County | 9.07 | 6.97 | 2.42 | 5.22 | 6.18 | 2.00 | 4.84 |
| | $8.00 | $5.92 | $2.63 | $6.21 | $5.07 | $1.38 | $5.61 |
| 1923 | | | | | | | |
| Lehigh | 8.62 | 6.34 | 2.57 | 6.36 | 3.80 | 1.77 | 5.84 |
| Schuylkill | 8.87 | 6.34 | 2.47 | 6.31 | 3.87 | 0.72 | 5.63 |
| Wyoming | 8.29 | 5.95 | 2.62 | 6.81 | 5.92 | 1.43 | 6.40 |
| Sullivan County | 9.29 | 7.14 | 2.39 | 6.81 | 6.56 | 2.60 | 6.73 |
| | $8.48 | $6.17 | $2.55 | $6.60 | $4.80 | $1.21 | $6.08 |
| 1924 | | | | | | | |
| Lehigh | 8.95 | 5.91 | 2.22 | 6.54 | 4.53 | 1.68 | 6.03 |
| Schuylkill | 8.99 | 5.67 | 1.99 | 6.33 | 4.05 | 0.45 | 5.57 |
| Wyoming | 8.35 | 5.44 | 2.38 | 6.81 | 6.14 | 0.97 | 6.36 |
| Sullivan County | 8.65 | 5.89 | 2.03 | 5.11 | 7.15 | 1.98 | 5.10 |
| | $8.58 | $5.59 | $2.21 | $6.63 | $5.15 | $0.87 | $6.08 |

Compiled by U. S. Bureau of Mines.

## New Byproduct Coke Plant To Open at Troy, N. Y., Soon

The new byproduct coke plant of the Hudson Valley Coke & Products Corporation, located on the Hudson River just south of Troy, N. Y., is nearing completion and will be ready for operation soon. This undertaking represents the association of blast furnace, fuel selling and beehive coke manufacturing interests for the purpose of providing coke for a blast furnace, gas to several municipalities and the general fuel market with the excess coke production.

The corporation operating the plant is owned by the Burden Iron Co., of Troy, M. Tutein, Inc., of Boston, and the Oliver & Snyder Steel Co., which owns three large mines and a total of 1,108 beehive ovens at Redstone Junction, Pa. The Oliver & Snyder Steel Co. expects to furnish all the coal for their byproduct ovens.

James A. Burden, president of the Burden Iron Co., Troy, is chairman of the Hudson Valley Coke & Products Corporation; the president is Harry Oliver, who is also president of the Oliver & Snyder Steel Co., of Pittsburgh, while John W. Doty, president of the Foundation Company, is vice-president.

The first unit of the Troy plant will consist of a battery of 55 ovens, capable of turning out approximately 500 tons of coke and 17,000,000 cu.ft. of gas every 24 hours. The entire plant, including the blast furnaces, gas holders and apparatus for recovering and treating various byproducts, such as coal tar, ammonia sulphate and benzol, will cover some 50 acres of ground and will cost around $6,000,000. Two additional units of 55 ovens each may be installed later on, so that the coke-making capacity may ultimately be 1,500 tons a day.

Designed by the Foundation Oven Corporation, of New York, this will be the first installation of the so-called American type of oven in the United States. This type of oven has been in use for four years in British Columbia, however.

## Consumption of Coal and Oil By Utilities Up in July

Public utility power plants in the United States consumed 3,170,582 net tons of coal in July, according to a report by the U. S. Geological Survey. This compares with 3,089,578 tons in June, as shown by revised figures. Fuel oil consumption by utilities in July totaled 852,464 barrels, compared with 790,812 barrels in June as shown by revised figures.

The average daily production of electricity by public-utility power plants in July was 172,200,000 kw.hr., less than one per cent lower than the average daily output for June.

Since the daily rates of production of electricity for these two months were practically the same it is evident that the low average daily rate for May in comparison with April and June probably was due to the output for May being reduced by the five Sundays and the holiday included in the month.

## Plan Merger of Many Mines In Illinois

A consolidation of many important coal mines in the Fifth and Ninth districts of Illinois is planned by the Bell & Zoller Coal Co., of Chicago, Ill., with the backing of Chicago, Baltimore, Philadelphia and Boston bankers. The proposed company would have $35,000,000 capital.

Homer F. McDonald, of the Meteor Coal Co., and H. Beddoe, of the Bresse-Trenton Mining Co., are taking options for the Chicago concern and are attempting to line up all the important coal properties in the district within a radius of 100 miles of East St. Louis, Ill.

The options are being taken with the understanding they are transferable to the Bell & Zoller company and call for cash payment at the time of the transfer. They expire Nov. 1.

It is reported that the merger proposition has been put to about 85 per cent of the mine owners and that a number have agreed to sell.

Companies approached are said to include: West Virginia Coal Co. and subsidiaries, Lumaghi Coal Co., Kolb Coal Co., Bresse-Trenton Mining Co., Columbia Coal Co., St. Louis & O'Fallon Coal Co., Miller Coal & Coke Co., Donk Bros. Coal & Coke Co., and Southern Coal, Coke & Mining Co.

It is reported that the Mount Olive & Staunton Coal Co. and the New Staunton Coal Co. have granted no options and probably will not be approached. W. J. Jenkins, president of the Consolidated Coal Co. of St. Louis, also has stated that no options have been given by his company.

## River Coal Movement Increasing Rapidly

Despite the fact that the Monongahela long has enjoyed the distinction of being the world's busiest waterway, the density of traffic on this stream is increasing at such a rate that it is difficult for improvements to keep pace with the demands of commerce. General Edgar Jadwin, acting chief of engineers, has just returned from a trip over the river during which he inspected some of the engineering works on the stream. The availability of the 56 x 720-ft. Elizabeth locks, which will accommodate at one time a towboat and six barges, the standard fleet on the Monongahela, is proving a great asset to those using the river.

General Jadwin is impressed with the additional tonnage which must be handled by water because of the improvement at the Alice coal mine of the United States Steel Corporation, which he visited with the 400 other guests of the corporation on its annual "inspection" day. That property now has in operation a belt conveyor having a capacity of 10,000 tons daily. The other steel companies also are augmenting their output of waterborne coal.

General Jadwin points out that the intensive use of waterways in the Pittsburgh area is not confined to the Monongahela. The tonnage on the Allegheny has doubled in ten years and now exceeds 5,000,000 tons. The practical completion of the system of dams, with 110 x 600-ft. locks, on the Cincinnati-Pittsburgh sector of the Ohio means, General Jadwin believes, the extension of the zone of dense traffic to include that 470-mile stretch of improved waterway. While the traffic on the Ohio will be of a different character from that in the Pittsburgh area, it promises to grow rapidly into a very large tonnage.

### *Heating with Oil Costly*

On an average, it costs approximately one-third more to heat a house with oil than with bituminous coal, according to statements recently made by a fuel engineer of high standing. This estimate is based on the use of a high-grade oil burner, but if figures are based on use of a low-grade oil burner the percentage of increase becomes much higher. The cost of the mechanical equipment and the fact that it is relatively short-lived make it necessary to stress the factors of interest and amortization, which establishes the oil burner as a luxury.

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The cost of living index number of the National Industrial Conference Board as of July 15, 1925, according to a survey just completed, is found to be approximately 2 per cent higher than that of March 15, 1925. Slightly more than half of this increase occurred between June 15 and July 15, 1925. Between March and July, 1925, average increases in the cost of food were 6 per cent; in clothing 1.1 per cent and in light, 0.7 per cent. Average shelter and fuel prices decreased 1.7 per cent and 3.3 per cent respectively; average sundries prices did not change in this period. Between July, 1920, when the peak of the rise in the cost of living since 1914 was reached, and July, 1925, the cost of living decreased 17.5 per cent. The increase in the cost of living since 1914 was 68.7 per cent.

## Want Big Muddy Improved For Coal Traffic

Possibilities of rendering the Big Muddy River navigable, which coal men declare would materially lower the price of Illinois coal and bring the Illinois mines back into prominence, will be discussed at a public meeting Oct. 1 in the U. S. Engineer's office in the Federal Building, St. Louis, Mo. The Big Muddy traverses Jackson, Franklin and the northwest corner of Williamson County, Illinois.

"Improvement of the river to 15 or 20 miles above Murphysboro would tap a barge traffic of 50,000 tons a day," declared E. J. Wallace of the Wallace Coal Co., St. Louis. "If the channel was built only to Murphysboro, some 30 miles above the Mississippi, the tonnage would be cut in half, but even that would give employment to thousands of miners. Only a third of the Illinois mines are in operation now. They have been steadily losing ground because of high freight rates—$1.37 a ton from Franklin County to St. Louis—and the cost of union labor."

The government is making its preliminary examination of the project to determine whether the traffic available and general topography of the river warrant a survey. The survey, if it is authorized by Congress, will go into every detail of necessary improvement and possible development of traffic and will be submitted to Congress for final action.

## Exercise of Reading Rights Extended Six Months

The U. S. District Court in Philadelphia on Sept. 21 granted an extension of six months for the exercise of the rights of the Reading Company in the certificates of interest for Reading Coal shares.

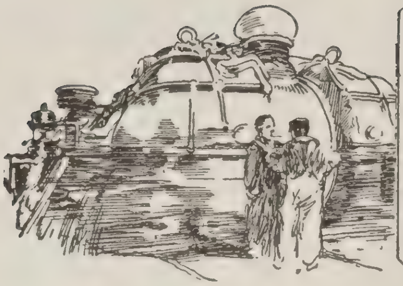
Application for the extension was made to the court by William Clark Mason, counsel for the Reading Company, on the ground that to date only about 45 per cent of the rights issued by the Reading Company to its stockholders had been exercised.

## Men Employed and Days Worked in Anthracite Region in 1924

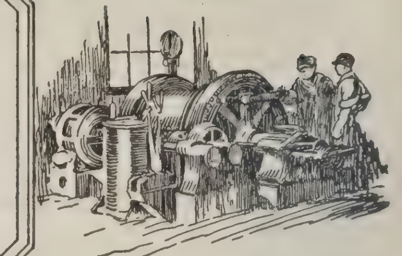
| Region | Average Number of Men Employed | | | | | |
|---|---|---|---|---|---|---|
| | | Underground | | | | |
| | Surface | Miners, Etc. | Other | Total Underground | Total | Average Number Days Worked |
| Lehigh: | | | | | | |
| Breaker product | 6,297 | 7,913 | 6,077 | 13,990 | 20,287 | 273 |
| Washery product | 34 | .... | .... | .... | 34 | 73 |
| Dredge product | 10 | .... | .... | .... | 10 | 127 |
| | 6,341 | 7,913 | 6,077 | 13,990 | 20,331 | 273 |
| Schuylkill: | | | | | | |
| Breaker product | 14,824 | 22,388 | 12,406 | 34,794 | 49,618 | 270 |
| Washery product | 535 | ...... | ...... | ...... | 535 | 141 |
| Dredge product | 303 | ...... | ...... | ...... | 303 | 188 |
| | 15,662 | 22,388 | 12,406 | 34,794 | 50,456 | 268 |
| Wyoming: | | | | | | |
| Breaker product | 17,974 | 45,497 | 24,586 | 70,083 | 88,057 | 280 |
| Washery product | 445 | ...... | ...... | ...... | 445 | 166 |
| Dredge product | 2 | ...... | ...... | ...... | 2 | 200 |
| | 18,421 | 45,497 | 24,586 | 70,083 | 88,504 | 280 |
| Sullivan County: | | | | | | |
| Breaker product | 222 | 237 | 259 | 496 | 718 | 200 |
| Total breaker product | a39,317 | 76,035 | 43,328 | 119,363 | 158,680 | 275 |
| Total washery product | 1,014 | ...... | ...... | ...... | 1,014 | 141 |
| Total dredge product | 315 | ...... | ...... | ...... | 315 | 186 |
| Grand total | 40,646 | 76,035 | 43,328 | 119,363 | 160,009 | 274 |

a Includes a comparatively small number of washery employees who could not be separated from breaker employees.

Compiled by U. S. Bureau of Mines.



# Practical Pointers For Electrical And Mechanical Men



## Air Blast Through Canvas Tubing Cools Tube Driller

Drilling boiler tubes has never been advertised as a "soft job." At the Earlington plant of the West Kentucky Coal Co., doing this work formerly was considered as out of the question during hot summer months. The grating or open-steel platform on which the operator must stand to drill the tubes of the 552-hp. boilers is close to the roof of the boiler house, and is in the 5-ft. space between drum ends of adjacent boilers. The heat radiated from the drum ends of the "live" boiler combined with the heat of the air in the top of the boiler house made it impossible for a man to stay on the platform any length of time.

But in a well regulated plant the heat of summer must not interfere with the efficiency of the boilers, so during this last summer drilling of tubes has been done whenever necessary, and accomplished with perhaps as much comfort as during cold weather. This was made possible by use of the equipment illustrated in Figs. 1 and 2. It consists of an asbestos-covered shield to protect the operator from the direct radiation from the drums of the "live" boiler, and of a motor-driven blower with canvas tubing for delivering a blast of cool air up through the grating on which he stands.

The wood-frame asbestos-covered shield can be seen at the right in Fig. 1. The size of this shield is approximately 5x5 ft. When drilling the tubes of the boiler at the left, the operator stands just back of the large vertical steam pipe in the foreground.

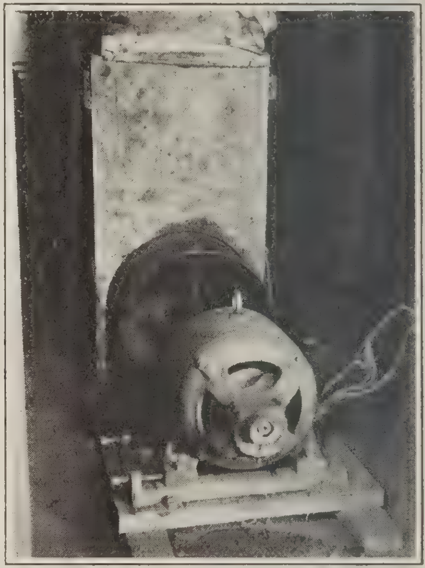


**Fig. 2—Drives Cool Air up to the Tube**

The upper end of the canvas tube leading from this 18-in. fan is tied to the under side of the grating on which the driller stands.

The blower, with canvas tubing leading up to the platform, is shown in Fig. 2. This ventilating unit is made up of a 2-hp., 1,750-r.p.m. motor direct connected to an 18-in. straight-flow fan. It is located on the boiler room floor directly below the operator's platform. The upper end of the tubing is tied to the underside of the open-steel floor of the platform. The air delivered by the blower is practically at the temperature of the outside air, for the reason that the unit is not more than 20 ft. from a large open door, and the incoming air has little chance to become heated before entering the suction.

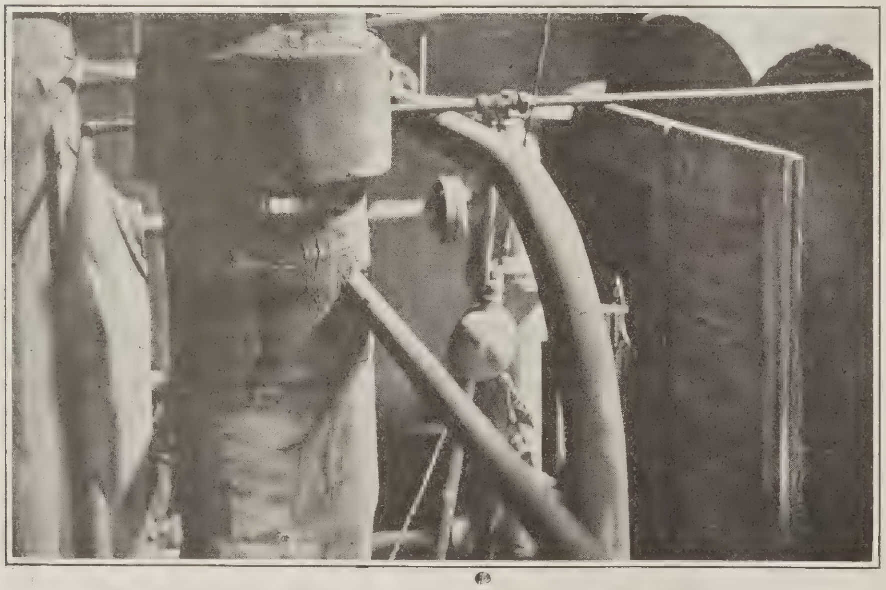


**Fig. 1—Between Boilers and Close to the Roof Is a Hot Place**

The ends of the drums of the "live" boiler are not over 4 ft. from where the operator must stand when drilling tubes. To give protection from the direct radiation, the wood-frame asbestos-covered shield at the right is used. This, in combination with the blower, Fig. 2, makes drilling of tubes a bearable job in the summer time.

---

## Handy Home-Made Planer Is Valuable in Mine Shop

In most mine shops, the wood planer is a machine tool which, more likely than not, is conspicuous only by its absence, although, in such places it could be used to excellent advantage.

The accompanying illustration shows such a machine built up by the shop force in the No. 4 shop of the Kingston Coal Co., Kingston, Pa. The frame of this machine is made of structural shapes chiefly angles, while the gears, rollers, springs, etc., were picked up as odds and ends around the plant, only the planer knives having to be purchased specially. As may be seen in the illustration, the driving belt is completely incased in a sheet-iron box, thus being entirely safe. The driving gears of this machine, which is about 18 in. wide, or will take a board of that width, are belted and

**Not Fazed by Long Use**

This machine was built in the shop where it is now used. It performs its work effectively and looks as if it would last almost indefinitely. Its chief drawback is the fact that no means have been provided for removing the shavings by air blast. This, however, is a minor disadvantage. The belt is inclosed for safety.

back-geared from the main shaft.

Although this machine perhaps lacks many of the refinements found in factory-built planers, it nevertheless is extremely handy and does much work every day. It has been in use for about twelve years and judging by its present condition it appears to be good for indefinite further use.

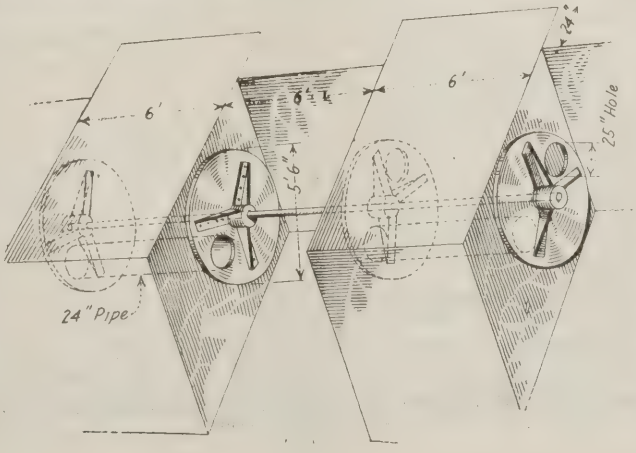
## Barrier Permits Men to Pass But Seals Off Gas

Mines usually are separated by barrier pillars. As a general rule no passage of any kind is made in such separators or they cease to be barriers. In many instances, however, it would be highly advantageous if an opening could be had through the barrier from one mine to another that would permit the passage of men yet prevent the movement of gas or air. The accompanying illustration shows how the Tennessee Coal, Iron & R.R. Co. has solved this problem and secured a seal between its Edgewater and Bay View mines that permits the passage of men.

In the passage or break-through that is driven through the pillar separating the two mines, two 6-ft. reinforced concrete stoppings have been constructed. Each of these contains a piece of 24-in. steel pipe extending entirely through it from side to side. These two pipe openings are in line with each other. Through both concrete blocks also, extends a heavy shaft that turns in bushings embedded in the concrete. To this shaft four spiders, to each of which is attached a steel disk 1 in. thick and 5 ft., 6 in. in diameter, are keyed.

Each of these disks has a 25-in. circular opening cut through it, which, when the disk and shaft are revolved, comes in line with the 24-in. pipe embedded in the concrete stopping. The disks are fastened to the shaft in pairs. Thus the shaft can be turned so that the holes in one pair of disks will unmask the 24-in. pipe through the concrete block upon either side of which the disks are located. When this occurs, however, the openings in the other pair of disks, being at 180 deg. from those in the first pair, effectively close the opening in the second concrete stopping.

When a man wishes to pass through this seal he first rotates the disk nearest him until the opening in it unmasks the cast-in pipe leading through the concrete. He then crawls through this pipe into the space between the two blocks of concrete. Here he revolves the disk adjacent to the next concrete wall until the hole in it comes opposite its pipe. This closes the opening in the first block. Thus, regardless of the position of the disks the opening between the two mines is always closed. Men may go through the barrier at will but appreciable quantities of air, gas or water can never pass.



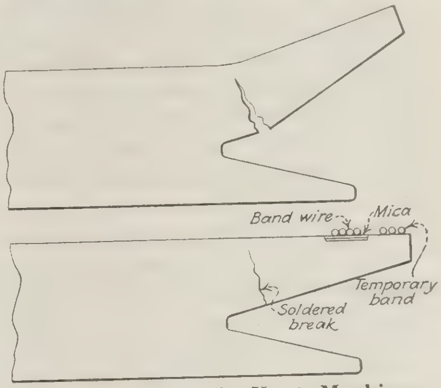
**Men May Pass but Gas Cannot**

Two heavy concrete blocks bar the passage through the break-through between Bay View and Edgewater mines. Into each of these a 24-in. pipe is cast. Its ends, however, are protected by steel plate disks, each of which is fitted with a 25-in. opening. One pipe is always covered, preventing the passage of air or gas.

## Quick Repair Keeps Mine Going

At one of our mines a 200-kw. rotary converter, about twelve years old and with a thin commutator, threw out one of its bars. The bar broke nearly through as shown in the accompanying sketch, and was badly bent by striking the brush holders before the machine could be stopped. To keep the machine in service while waiting for a new commutator, we straightened the bar and soldered it together at the break. We then forced it down in place and held it there with a band of binding wire until a more permanent repair could be made. This was done by turning a groove in the commutator about ¾-in. wide and 1/32 in. deep close to the end of the bars and outside of the path of the brushes. Four turns of band wire under heavy tension were then wound in this groove, being insulated from the bars by means of about .025 in. of mica. The commutator was then trued and the machine put back on the line. It is now running and appears to be as good as ever.

R. R. Schellenger,
Electrical Engineer.

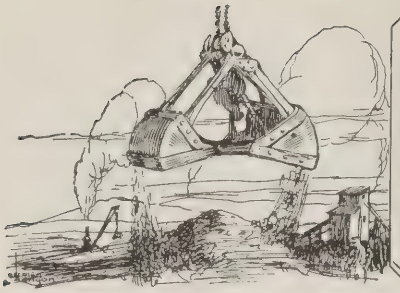


**Ingenious Repair Kept Machine in Service**

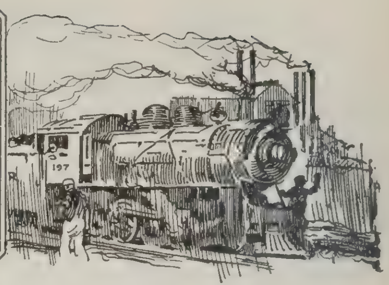
The broken commutator bar shown in the upper sketch was straightened and soldered before being pushed back in position. A temporary banding wire set in a groove cut in the commutator holds it in place.

## Adding Castor Oil Makes Shellac Flexible

For most purposes insulating varnish should have the property of remaining flexible. Shellac becomes brittle when dry. This is one of the reasons why it has been replaced to a great extent, in the repair shops, by special varnishes. In an emergency when special varnishes are not available, a flexible insulating liquid can be made by mixing castor oil with prepared shellac. Adding 10 to 15 per cent of the oil will make the shellac remain flexible after drying.



# Production And the Market



## Bituminous Coal Trade Sags in Hot Wave; Hard Coal Quiet Despite Strike

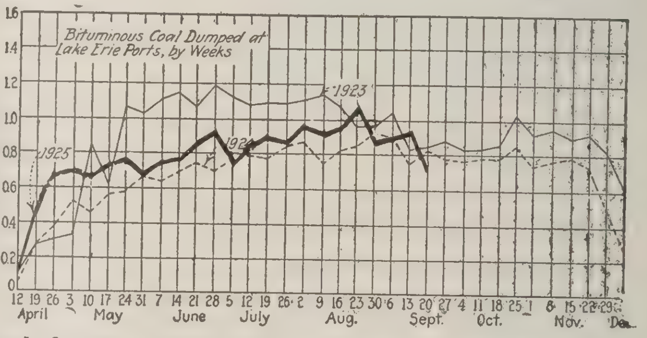
Much of the flurry of soft-coal buying which began at about the time of the hard-coal "suspension" petered out during the past week and the market has developed into a weather proposition for the time being, a hot wave extending over most of the country having taken most of the life out of the business. As usual, strike or no strike, the consumer refuses to get worked up over coal when the weather is warm. Even smokeless, which has been the market headliner right along, has lost considerable of its strength, shippers having found that they had run it up too fast when the bottom showed signs of dropping out at Cincinnati. As a matter of fact, prices, with few exceptions, show an all-round easing tendency.

The Midwest trade has been particularly hard hit, practically all grades having slowed up in Illinois, with a consequent slight curtailment of working time. Prepared sizes are somewhat weaker in Kentucky with a slight downward tendency in price. Business at the head of the lakes shows sustained improvement; shipments off the docks are increasing as demand for both steam and domestic gains, and prices show a steadily stiffening trend. Coal is moving better in Colorado, Utah and the Southwest, though labor unrest in Oklahoma is hampering output in that field.

Trade in Eastern markets is fairly steady with a tendency to gradual improvement. In New England and Ohio, however, a slight easing up is in evidence. Thus far, the increase in buying that was expected as a result of the anthracite suspension has not developed in accordance with advance reports. The attempt to call out non-union miners in West Virginia is not expected to have much effect.

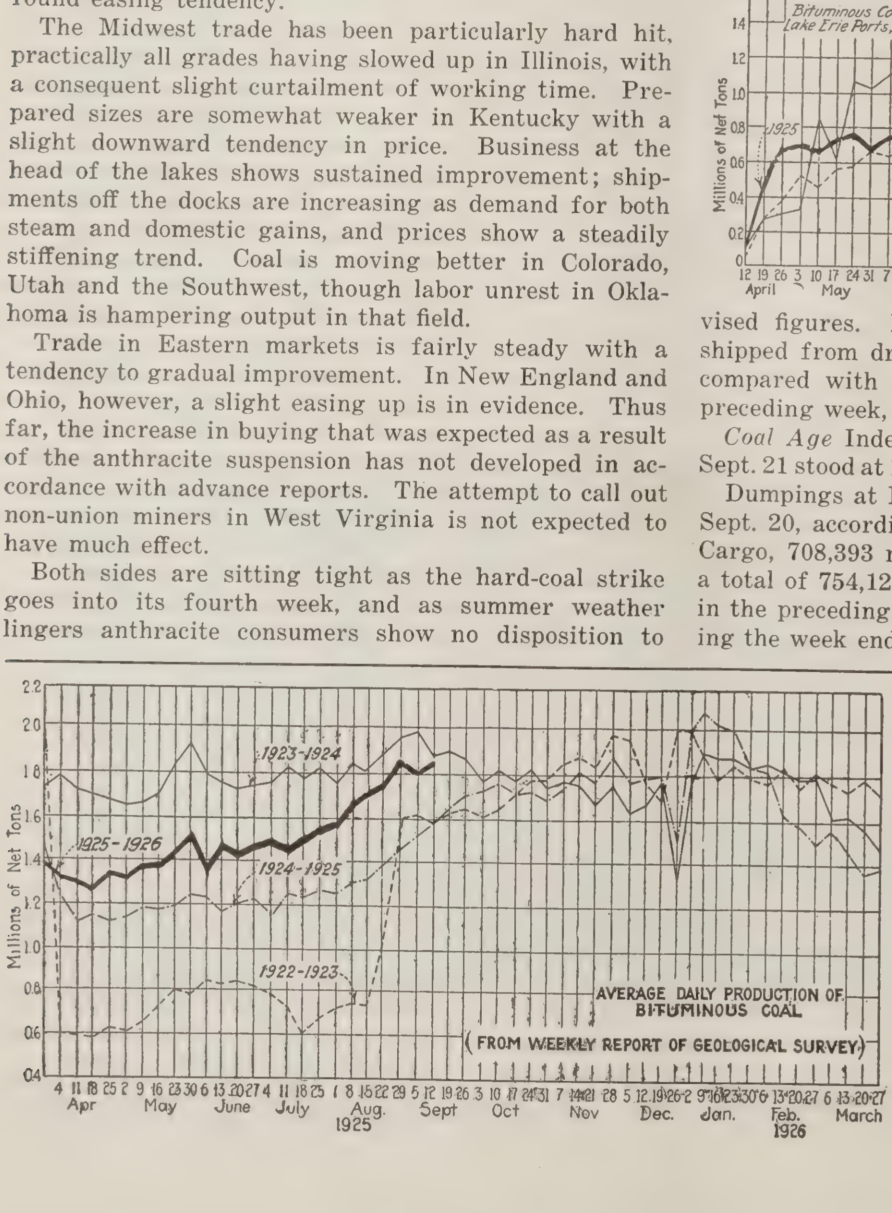
Both sides are sitting tight as the hard-coal strike goes into its fourth week, and as summer weather lingers anthracite consumers show no disposition to become excited. Nothing larger than pea is being shipped and it is likely that all of that will soon be ordered. Buckwheat is still plentiful. Retailers are well stocked with domestic sizes, however, and with careful handling will be able to take care of reasonable needs for several weeks yet. Substitutes are not in much demand as yet.

Output of bituminous coal during the week ended Sept. 12 is estimated by the Geological Survey at 9,993,000 net tons, loadings on Labor Day being 40 per cent of a normal workday. This compares with 10,826,000 tons in the preceding week, as shown by revised figures. Five thousand tons of anthracite was shipped from dredges during the week ended Sept. 12 compared with 432,000 net tons produced during the preceding week, when the miners quit work.



*Coal Age* Index of spot prices of bituminous coal on Sept. 21 stood at 185, the corresponding price being $2.24.

Dumpings at Lake Erie ports during the week ended Sept. 20, according to the Ore & Coal Exchange, were: Cargo, 708,393 net tons; steamship fuel, 45,729 tons—a total of 754,122 net tons, compared with 933,036 tons in the preceding week. Hampton Roads dumpings during the week ended Sept. 17 totaled 332,097 net tons.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| Aug. 29 (*a*) | 9,006,000 | 11,133,000 |
| Sept. 5 (*a*) | 8,209,000 | 10,826,000 |
| Sept. 12 (*b*) | 9,835,000 | 9,993,000 |
| Daily average | 1,639,000 | 1,850,000 |
| Cal. yr. to date | (*c*) 318,413,000 | 338,242,000 |
| Daily av. to date | 1,480,000 | 1,569,000 |
| **ANTHRACITE** | | |
| Aug. 29 | 1,837,000 | 2,251,000 |
| Sept. 5 | 1,451,000 | 432,000 |
| Sept. 12 | 1,820,000 | 5,000 |
| Cal. yr. to date | (*c*) 63,578,000 | 61,644,000 |
| **COKE** | | |
| Sept. 5 (*a*) | 112,000 | 166,000 |
| Sept. 12 (*b*) | 111,000 | 169,000 |
| Cal. yr. to date | (*c*) 7,126,000 | 6,744,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Trade Slackens

Inactivity marked the Midwest coal trade last week. Though most operators in the Franklin County field and those producing the better grades of Indiana coal are still behind in filling orders, it is apparent that this surplus of orders will be absorbed rapidly and a fixed price will appear on lump coal, instead of business being taken on the basis of price current at time of shipment, as for the past two weeks. While orders are plentiful on block with practically none to be had on the open market, the smaller prepared sizes and screenings are still hard to move.

The anthracite strike has not disturbed the general condition in this territory to any extent. Mild weather has had much to do with the falling off in demand, and a further drop is expected. There is no demand for the cheaper grade of coal, with the exception of that covered by contracts. Screenings are somewhat stronger, however, as little is available, but in general the condition in Indiana still remains very poor.

Demand for Eastern coals has fallen off considerably. There has not as yet been a reduction in price, so far as West Virginia and Kentucky coals are concerned, but orders are so scarce that there will no doubt be a cut in order to move tonnage and keep the mines going. A great deal of consignment coal is available, and, of course, speculators are taking a loss on this so as to avoid demurrage. The only real setback the market suffered was on Pocahontas coal, and jobbers who have speculated on this coal are taking considerable losses.

Warm weather has hit southern Illinois hard and over the Franklin and Williamson County field, as well as in Saline, activity has been slowing up. Lump is still moving but egg and nut and even the steam sizes are slow. The warm weather has knocked the props from under everything. Railroad tonnage continues fairly good and the strip mines are working full time, but the shaft mines have been affected. There has been no change in prices since last week but working time has dropped off slightly and unbilled loads at the mines have increased several times.

In the Duquoin field conditions have been affected much as in the other fields. Working time has dropped off a day a week, with no change in prices, but railroad tonnage from this field is almost nothing. In the Mt. Olive district just enough of domestic sizes is being shipped to take care of steam contracts and working time has dropped off two days a week generally in this field. In the Standard district conditions are unusually bad. Coal continues to be sold for the most part at cost or below and there is general dissatisfaction. Working time ranges from two to four days a week. Railroad tonnage is fairly good but nearly all mines have "no bills" on hand every night of all sizes. Prices are unchanged.

Warm weather put a quietus on retail deliveries in

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Sept. 22 1924 | Sept. 5 1925 | Sept. 14 1925 | Sept. 21 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $4.10 | $4.60 | $4.75 | $4.50@$5.00 |
| Smokeless mine run | Columbus | 2.10 | 2.50 | 2.55 | 2.40@ 2.75 |
| Smokeless screenings | Columbus | 1.20 | 1.50 | 1.50 | 1.40@ 1.60 |
| Smokeless lump | Chicago | 3.85 | 4.75 | 4.75 | 4.50@ 5.00 |
| Smokeless mine run | Chicago | 1.90 | 2.60 | 2.60 | *2.25@ 2.50* |
| Smokeless lump | Cincinnati | 3.85 | 5.00 | 5.00 | *4.50@ 5.00* |
| Smokeless mine run | Cincinnati | 1.85 | 2.50 | 2.60 | 2.50@ 2.75 |
| Smokeless screenings | Cincinnati | 1.10 | 2.00 | 2.00 | *1.75@ 2.00* |
| *Smokeless mine run | Boston | 4.20 | 5.35 | 5.50 | *5.10@ 5.32* |
| Clearfield mine run | Boston | 1.90 | 1.90 | 1.85 | **2.25@ 2.80** |
| Cambria mine run | Boston | 2.30 | 2.10 | 2.10 | **2.25@ 3.00** |
| Somerset mine run | Boston | 2.05 | 2.00 | 2.00 | **2.15@ 2.35** |
| Pool 1 (Navy Standard) | New York | 2.75 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pool 1 (Navy Standard) | Philadelphia | 2.40 | 2.60 | 2.65 | 2.50@ 2.85 |
| Pool 1 (Navy Standard) | Baltimore | 2.60 | 2.30 | 2.30 | 2.25@ 2.35 |
| Pool 9 (Super. Low Vol.) | New York | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.05 | 1.95 | 1.95@ 2.00 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.85 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.85 | 2.00 | 2.00 | 1.90@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.85 | 1.85 | 1.75@ 2.00 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.65 | 1.90 | 1.90 | 1.85@ 1.95 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.80 | 1.80 | 1.70@ 1.90 |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.65 | 1.70 | 1.60@ 1.80 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.70 | 1.70 | 1.70@ 1.75 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.55 | 1.55 | 1.50@ 1.60 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.60 | 1.60 | 1.50@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.40 | 1.65 | 1.65 | 1.65@ 1.70 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.50 | 2.50 | 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 1.95 | 2.05 | 2.00@ 2.15 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.25 | 1.55 | 1.55 | 1.50@ 1.60 |
| Kanawha lump | Columbus | 2.10 | 2.60 | 2.60 | 2.45@ 2.80 |
| Kanawha mine run | Columbus | 1.40 | 1.65 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings | Columbus | 1.05 | 1.30 | 1.30 | 1.25@ 1.35 |
| W. Va. lump | Cincinnati | 2.35 | 3.00 | 2.75 | 2.50@ 3.00 |
| W. Va. gas mine run | Cincinnati | 1.50 | 1.60 | 1.65 | 1.60@ 1.75 |
| W. Va. steam mine run | Cincinnati | 1.35 | 1.45 | 1.50 | **1.50@ 1.65** |
| W. Va. screenings | Cincinnati | .90 | 1.20 | 1.15 | 1.10@ 1.25 |
| Hocking lump | Columbus | 2.50 | 2.75 | 2.75 | 2.65@ 2.90 |
| Hocking mine run | Columbus | 1.55 | 1.65 | 1.65 | 1.50@ 1.80 |
| Hocking screenings | Columbus | 1.15 | 1.40 | 1.40 | *1.25@ 1.40* |
| Pitts. No. 8 lump | Cleveland | 2.35 | 2.50 | 2.35 | 2.00@ 2.75 |
| Pitts. No. 8 mine run | Cleveland | 1.80 | 1.90 | 1.85 | 1.85@ 1.90 |
| Pitts. No. 8 screenings | Cleveland | 1.15 | 1.55 | 1.45 | 1.40@ 1.50 |

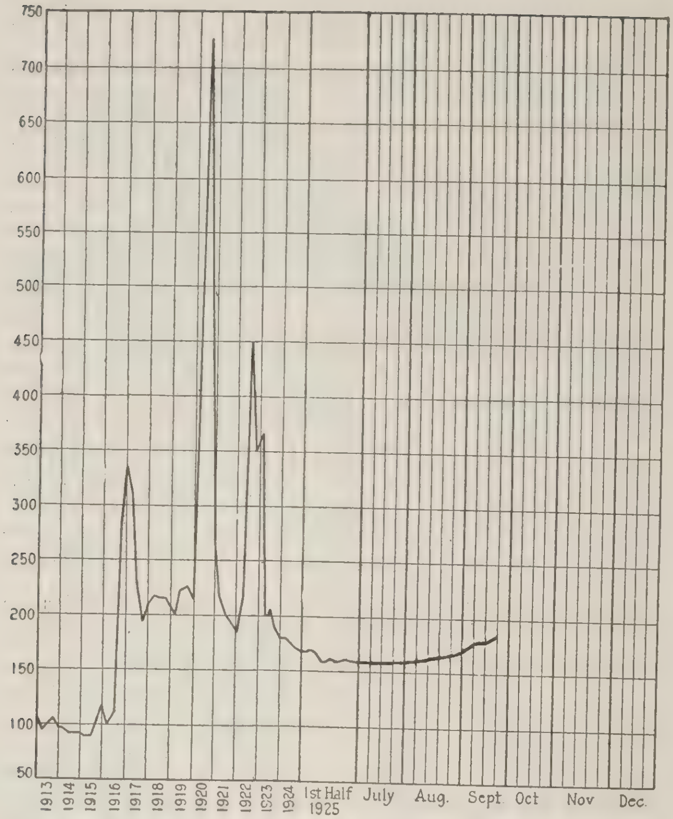
| Midwest | Market Quoted | Sept. 22 1924 | Sept. 5 1925 | Sept. 14 1925 | Sept. 21 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $3.35 | $3.25 | $3.25 | $3.25 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Central, Ill. lump | Chicago | 2.85 | 2.85 | 2.85 | 2.75@ 3.00 |
| Central, Ill. mine run | Chicago | 2.20 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central, Ill. screenings | Chicago | 1.15 | 1.55 | 1.55 | 1.35@ 1.75 |
| Ind. 4th Vein lump | Chicago | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Ind. 5th Vein lump | Chicago | 2.60 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.25 | 1.20 | 1.20 | 1.15@ 1.30 |
| Mt. Olive lump | St. Louis | 3.00 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.25 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.75 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | .95 | 1.30 | 1.15 | 1.15 |
| West Ky. block | Louisville | 2.85 | 2.10 | 2.10 | *1.90@ 2.15* |
| West Ky. mine run | Louisville | 1.65 | 1.35 | 1.35 | 1.25@ 1.50 |
| West Ky. screenings | Louisville | 1.00 | .75 | .75 | **.75@ .90** |
| West Ky. block | Chicago | 2.70 | 2.30 | 2.30 | 2.25@ 2.40 |
| West Ky. mine run | Chicago | 1.65 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.10 | 2.25 | 2.25 | 2.00@ 2.50 |
| Big Seam mine run | Birmingham | 1.60 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 1.85 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block | Chicago | 2.85 | 3.00 | 3.00 | 2.75@ 3.00 |
| S. E. Ky. mine run | Chicago | 1.60 | 1.95 | 1.95 | 1.85@ 2.10 |
| S. E. Ky. block | Louisville | 3.00 | 3.00 | 3.00 | *2.50@ 3.00* |
| S. E. Ky. mine run | Louisville | 1.55 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Louisville | .90 | 1.25 | 1.25 | 1.10@ 1.40 |
| S. E. Ky. block | Cincinnati | 2.60 | 3.00 | 3.00 | 2.75@ 3.25 |
| S. E. Ky. mine run | Cincinnati | 1.50 | 1.60 | 1.55 | **1.50@ 1.75** |
| S. E. Ky. screenings | Cincinnati | 1.00 | 1.20 | 1.15 | 1.10@ 1.25 |
| Kansas lump | Kansas City | 4.50 | 4.35 | 4.35 | 4.25@ 4.50 |
| Kansas mine run | Kansas City | 3.25 | 3.10 | 3.10 | 3.00@ 3.25 |
| Kansas screenings | Kansas City | 2.35 | 2.50 | 2.50 | 2.50 |

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Sept. 22, 1924 | | Sept. 14, 1925 | | Sept. 21, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| roken | New York | $2.34 | ............ | $8.00@$9.25 | ............ | $8.20@$8.95 | ............ | $8.20@$8.95 |
| Broken | Philadelphia | 2.39 | ............ | 9.15 | ............ | ............ | ............ | ............ |
| Bgg | New York | 2.34 | $9.00@$9.50 | 8.75@ 9.25 | $13.00@14.00 | 8.65@ 8.90 | ............ | 8.65@ 8.90 |
| Bgg | Philadelphia | 2.39 | 9.00@ 9.70 | 8.80@ 9.25 | ............ | ............ | ............ | ............ |
| Bgg | Chicago* | 5.06 | 8.17@ 8.27 | 8.14@ 8.20 | 8.17@ 8.60 | 8.03@ 8.28 | $8.17@ 8.60 | 8.03@ 8.28 |
| Etove | New York | 2.34 | 9.25@10.00 | 8.75@ 9.50 | 13.00@14.00 | 9.15@ 9.40 | ............ | 9.15@ 9.40 |
| Etove | Philadelphia | 2.39 | 9.35@10.00 | 9.15@ 9.50 | ............ | ............ | ............ | ............ |
| Etove | Chicago* | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@11.00 | 8.48@ 8.80 | 10.00@11.00 | 8.48@ 8.80 |
| Shestnut | New York | 2.34 | 9.00@ 9.50 | 8.75@ 9.25 | 13.00@14.00 | 8.65@ 8.95 | ............ | 8.65@ 8.95 |
| Shestnut | Philadelphia | 2.39 | 8.85@ 9.80 | 9.15@ 9.25 | ............ | ............ | ............ | ............ |
| Shestnut | Chicago* | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@11.00 | 8.28@ 8.50 | 10.00@11.00 | 8.28@ 8.50 |
| Cea | New York | 2.22 | 5.25@ 5.50 | 5.50@ 6.00 | 6.00@ 7.00 | 5.00@ 6.00 | ............ | 5.00@ 6.00 |
| Cea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | ............ | 5.00@ 6.00 | ............ | 5.00@ 6.00 |
| Cea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.25@ 5.75 | 5.05@ 5.36 | 5.25@ 5.75 | 5.05@ 5.36 |
| Puckwheat No. 1 | New York | 2.22 | 2.25@ 2.90 | 3.00@ 3.15 | 2.60@ 3.00 | 2.50 | ............ | 2.50 |
| Puckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | ............ | 2.50 | ............ | 2.50 |
| Pice | New York | 2.22 | 1.95@ 2.25 | 2.00@ 2.25 | ............ | 2.00 | ............ | 2.00 |
| Bice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | ............ | 2.25 | ............ | 2.25 |
| Barley | New York | 2.22 | 1.25@ 1.50 | 1.50 | ............ | 1.50 | ............ | 1.50 |
| Rarley | Philadelphia | 2.14 | 1.50 | 1.50 | ............ | 1.50 | ............ | 1.50 |
| Rirdseye | New York | 2.22 | ............ | 1.60 | ............ | 1.60 | ............ | 1.60 |

* Net tons, f. o. b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Sept. 21 | Sept. 14 | Sept. 7 | Sept. 22 |
| Index | 185 | 178 | 179 | 169 |
| Weighted average price | $2.24 | $2.16 | $2.16 | $2.04 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

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St. Louis last week and there will be little activity until cooler weather comes. All grades of coal were affected and dealers are paying demurrage because their yards are full. The country demand has also fallen off and dealers in the country seem to have more coal on hand than they can conveniently take care of. Local wagonload is quiet, carload has slumped off some and country steam is hard to locate. No change in prices.

### Demand Wanes in Kentucky

The Kentucky market sagged a trifle on prepared sizes last week, due in part to hot weather, along with the fact that Eastern demand as a result of the anthracite strike hasn't developed as rapidly as expected. It is said that some of the jobbers and brokers, figuring that there would be a rapid increase in demand and price, bought a good deal of coal in advance of the anticipated movement, which failed to materialize, causing a slump for the time being.

Local coal men report that while some houses are asking $3.25 for best 4-in. lump in eastern Kentucky, there is practically no coal at over $3, more at $2.75, and some offgrade stuff as low as $2.50. Lump and egg are weaker at $2@$2.50 a ton; mine run is steady at $1.50@$1.75 and screenings firm at $1.10@$1.40.

Western Kentucky 6-in. block is a shade weaker at $1.90@$2.15, some asking $2.25. Lump and egg are firm at $1.85@$2; nut, $1.40@$1.75. Demand in general is not as good as it was, though nut is in very fair movement. Not much mine-run is moving, the price being steady at $1.25@$1.50. Screenings are in smaller production, as a result of reduction in output of prepared, and the price has advanced to 75c.@90c.

Steam movement continues good and demand strong, especially on screenings. Cooler weather will start prepared moving again and aid the market materially.

### Northwest Market Stiffens

Dock operators at Duluth and Superior note a sustained improvement in business in the last ten days. Shipments have been substantial so far this month and it is expected that the August record of 20,778 cars will be surpassed. The flurry in anthracite ordering that developed when the strike set in is over for the time being, but a revival is looked for when normal fall weather appears.

Orders for Pocahontas have more than doubled as compared with a year ago and the movement is expected to continue to gain when domestic buying opens next month. Two of the docks reported that they are completely sold up in prepared sizes and are pushing mine-run with a fair measure of success. Lump, egg and stove are steadily stiffening, the third advance of 50c. within six weeks becoming effective this week, bringing the dock figure to $8.50. Mine-run and screenings are unchanged at $5.25 and $4.25, but dealers expect an advance Oct. 1.

The market in all high-grade Kentucky coals also is stiffening with increasing domestic demand, but apart from Pocahontas, quotations on soft coals are unchanged.

Dealers are getting set for a heavy demand for domestic coke and briquets as anthracite substitutes. Quotations are $8.50 for coke and $9 for briquets.

Demand for steam coals from industrials is improving and inquiries from utilities are gaining as a result of low water in hydro-electric storage dams.

Receipts of coal from Lake Erie ports are continuing in good volume, thirty-nine cargoes, including one of anthracite, having been unloaded at the docks last week. Stocks of bituminous coal on commercial docks are now placed at 3,700,000 tons and anthracite supplies at 275,000 tons.

Coal dock managers at Milwaukee report a falling off in demand as compared with a few weeks ago. Dealers are ready, but orders from consumers do not materialize. The situation at the anthracite mines has not alarmed consumers, who seem to feel that differences will be smoothed out before supplies on hand are exhausted.

Receipts by lake for the season up to Sept. 17 total 2,422,815 tons—488,234 tons of anthracite and 1,934,581 tons of bituminous coal. The receipts during the same period of 1924 aggregated 1,811,433 tons—497,223 tons of anthracite and 1,314,210 tons of bituminous coal. During the month of August Milwaukee received 37,330 tons of coal by rail—3,325 tons of anthracite and 34,005 tons of bituminous.

### Southwest Trade Gets Tonic

A brief period of temperature in the 70s and 80s has had a tonic effect on the Southwestern market. Dealers still are buying in substantial quantities and new mines are opening in Kansas, which is profiting by the instability of production resulting from the strike in Oklahoma and Arkansas. While output has not been cut in the latter state, the strike and the uncertain labor conditions which preceded it have deterred some of the larger operators from reopening their mines. In Oklahoma, less coal is being mined than before Sept. 1 and the psychological effect has been to curtail the demand for coal from that field.

Demand for domestic coal in the Colorado market continues to increase. As a result the mines are speeding up production. Prices are: Walsenburg lump, $5.50; washed nut, $4.50; washed pea, $3; Trinidad coking lump over 6-in. screen, $4.25; over 3-in. screen, $4; nut, $3.75; pea, $3; Trinidad Segundo coke, $7.50; Crested Butte high grade anthracite Nos. 1 and 2 (furnace size), $7.25; Nos. 3 and 5 (base burner size), $7.75.

Coal is moving better in Utah now than for many months. There is still much less coal in storage than a year ago, due to the fact that the elimination of storage rates this year kept many from purchasing winter supplies in June, July and August. Some of the mines are working near capacity and the majority are working at least half time. Lump coal is selling best, but there is a good demand for all sizes. The increased working time at the mines is causing a little surplus of slack.

### Smokeless Flops at Cincinnati

At Cincinnati the price of smokeless was run up too fast, and last week it came a cropper. Starting the week with $5 and $5.25 asked for coal that could be delivered immediately, sour reports from the markets that had been the best takers caused some jobbers and others who had been playing the market too strong to put their tonnage overboard around $4.50 for egg and $4.75 for lump. Again, the weather has been a depressing factor, and even some producing companies that had been fishing for a $3 market on mine-run early in the week were willing to talk $2.50. Then again an overload of coal was taken out of the usual contractual channels and diverted to the week-to-week market.

High volatile was in much better shape. Here the Hazard block, which has moved up to $2.75, has been able to maintain its position, as has Elkhorn at $3@$3.25 and the Harlans around $2.75@$3. The dead weight of $2.50 as the quotation by Logan County's biggest producer has held some of the West Virginia prize coals back, but quality, advertised and specialized stuff has been able to hold in the range of $2.75@$3 in spite of the setback to Pocahontas. Egg prices hold fairly firm with a spread of $2@$2.50 and mine-run has stiffened within a general range of $1.50@$1.75. Only slack and screenings have not improved their position.

Car records for the week fell a little below those of the week preceding but were far ahead of those of last year. Retail business still feels its way locally, prices having eased slightly. River business is at a low ebb, due to the low stage.

Because of extreme hot weather and also due to the fact that retailers are pretty heavily stocked, domestic buying at Columbus is not as active as a week ago, but prices have not weakened to any extent. Only a limited amount of smokeless is coming into the Columbus market. Splints and Kentucky block varieties are moving fairly well. Ohio grades have not shared in the general activity, although quite a few mines have been opened, after an idleness of from several months to a year.

Little change has taken place in the steam trade. Contracting is reported at intervals and most of the larger consumers have made agreements for a large part of their requirements. Some of the manufacturing plants are buying on the open market and prices have not advanced, even in the face of the anthracite strike. Screenings are slightly weaker, owing to the increased production of lump and other prepared sizes.

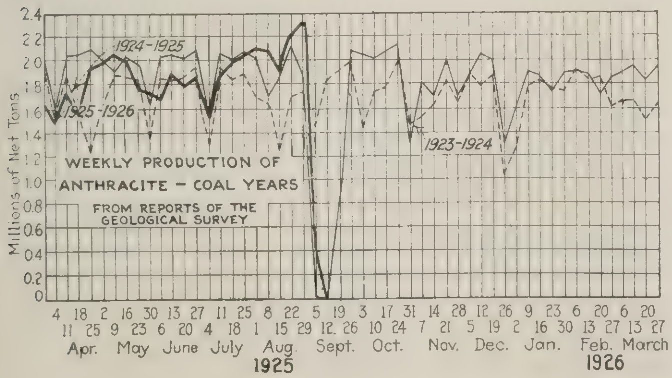
Lake records show that the Hocking Valley R.R. at Toledo has handled 1,178,000 tons more up to Sept. 16 than was handled last year up to the same time.

The situation in eastern Ohio is unchanged as compared with a week ago, and this sameness also applies to spot prices. Demand for both steam and domestic has lapsed into the lethargy which prevailed during the summer months. Were it not for the fact that Ohio mines are shipping some Lake coal and certain buying on the part of railroads and a few other large steam consumers, the demand for bituminous would be as dull as ever. One or two mines in eastern Ohio are said to have recently reopened mainly for shipping Lake coal.

### Demand Gaining at Pittsburgh

Demand for Pittsburgh district coal increased a trifle more in the past week, chiefly by way of a heavier movement of domestic lump. In general prices are somewhat higher than when the movement began to open up early in August.

Steam lump is moving fairly well. Consumption is slightly heavier than in July and some consumers are stocking in a moderate way. The market has been stiffening, and is now quotable for ¾-in. Pittsburgh district steam lump at about $2.25@$2.35, although some sellers consider $2.35 the minimum.



Steam slack, which stiffened a trifle a few weeks ago, has lately been at the old range of $1.30@$1.40, but this represents a better market, for with more shipments of lump there is more slack and it means better demand for this not to have definitely depressed prices.

The labor situation is growing more complicated and uncertain, the men at two Connellsville plants having gone on strike last week. The Pittsburgh Coal Co. is now operating two mines.

No stir is visible in the Buffalo market despite the hard-coal strike; a 50c. advance in some sorts of smokeless about covers it. The increased output is a puzzle to everybody, for consumers are not stocking up, so they must be using it. Quotations are $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run and $1.25 to $1.40 for slack; $2.25 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, and $1.30 to $1.60 for slack; $1.75@$2 for Allegheny Valley mine-run; Cambria county smokeless sells for $6@$6.25 at the curb.

### New England Market Eases

Cessation in demand from the west for New River and Pocahontas has increased the movement to the southern loading piers and as the demand for coal there has been very light, f.o.b. prices have suffered considerable decline this past week. For the very best of the low-volatile mine-run coal $5.32 gross ton f.o.b. is as high as is now asked against $5.50 a week ago and very good coal has been offered at $5.25. Some tonnage of fair quality coal has been available as low as $5.10.

This lower level at the piers has been promptly reflected at the New England tidewater terminals, where demand, which has been light for several weeks, has dropped to almost negligible proportions and even orders for one or two cars have been acceptable at $6.50 gross ton on cars Boston. For these small orders last week $6.60 was minimum and up to $6.75 was obtained. For orders running into sizeable tonnage it is more likely that $6.50 would be shaded, but there has been nothing of this nature consummated. At Providence certain shippers are making strong efforts to hold the price at $6.50 on cars for high-grade Southern coal, but orders at that figure have been scarce and $6.40 is named not infrequently for excellent coal. Some tonnage of smokeless has been offered at $6.35 and as low as $6.25 is heard.

Arrivals at all of the tidewater discharging terminals have been light the past week and practically all of the tonnage discharged at railroad wharves has been sold before making port. Consequently distress coal continues conspicuous by its absence; otherwise prices doubtless would be even lower.

The all-rail market has come into prominence this week through a rather liberal demand for prepared coal for domestic use. Coal from the Broad Top district seems to be most popular and is commanding $4.75@$5 net ton mines. Certain shippers here are guaranteeing degradation not more than 10 per cent and in this way are obtaining $5.25.

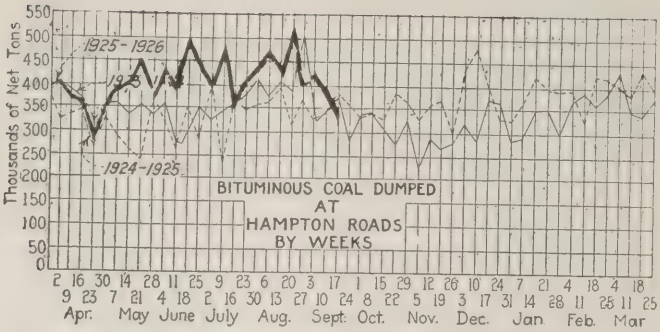
### Business Steady at New York

The bituminous coal market at New York is in good shape. Demand is steady and quotations are firm at last week's level. Buyers are able to get their orders shipped promptly because of the heavy output. Most of the coal moving is on old orders at low prices, new orders being booked at advances of from 20c. to 30c. above those figures.

It will be at least three weeks or a month before the effects of the anthracite strike will be felt in the soft-coal industry unless there is a sudden change in weather conditions. Consumers are slowly increasing their reserves. The better grades are scarcer and even the cheaper coals are in better condition than they were a few weeks ago.

Soft coal demand seems to have lagged a bit at Philadelphia during the past week, but the general expectation is that it will pick up additional momentum before long. Railroad fuel is fairly active and more satisfactory, particularly on new business placed lately.

The fact that the miners' union has called a strike of non-union miners in the Fairmont field effective Sept. 26 has created barely a ripple here. The tide situation is



quite flat, for, outside of bunkering, which is at the normal rate, nothing is being done in the shipment of cargoes over the piers.

While it cannot be said that gas and steam coals are decidedly stronger at Baltimore the fact remains that the entire soft-coal situation is stiffening slowly. Demand is increasing not only in this section, but jobbers here are interested in considerable movements westward, especially of gas coals. Coal men in Baltimore are not taking seriously the threat of a strike in the non-union fields on Oct. 1. Local industries are beginning to lay in supplies or to get under contracts for the fall and winter season, although a much larger proportion than usual continue to buy in the open market. Prices remain about the same as quoted last week, although the tendency is to buy nearer the top figure than the minimum quoted on average selling prices. Despite predictions that the export trade was not due for any material increase in September, the second week of the month has seen quite a substantial loading.

There has been no material change in market conditions at Birmingham in the last week. Domestic buyers continue to show an indifference toward stocking coal heretofore unknown at this time of year, yards as a whole carrying the smallest reserves on record just prior to the beginning of the winter. Spot sales are scattering and do not amount to any great tonnage in the aggregate. Contract-holding mines are being restricted sharply in the movement of fuel under agreements and considerable domestic product is being applied on steam orders.

Inquiry and bookings for all grades of steam coal are fairly good, high-grade washed product still being most active, with output and movement running neck and neck on some of these grades. The medium and lower qualities are not so readily taken but are being disposed of without great effort. Bunker trade shows no special activity, with about the normal consumption being called for at the Southern ports. Prices are unchanged.

Buying of foundry coke is somewhat more active than a few weeks back, with quotations on byproduct ranging $4.50@$4.75 and beehive $5 per net ton ovens. There is sufficient call for the domestic sizes to move the supply, much of this product going into the North and Middle West for use in heating plants. Quotations are $3.50 for nut and $4 for egg.

## Hard-Coal Consumers Calm

With the possible exception of stock coal and a few loaded bottoms in the harbor the visible supply of anthracite at New York is cleaned up. Retail dealers have good stocks on hand and so far have been able to take care of their customers, although not filling all orders at one time.

A comparatively small volume of hard coal is moving through wholesale channels. The boats that dotted the harbor and piers when the strike was called have been unloaded to a large extent and the remaining few are owned by middlemen.

Some stock coal is coming through, but the tonnage is small. Operators, with few exceptions, are not quoting prices and the figures that are obtainable are mostly from middlemen who have loaded boats on hand. The tendency to pay exorbitant prices, which was prevalent in former strikes, is not so noticeable this year, buyers hesitating considerably before paying the prices asked by middlemen.

While some effort has been made to urge the use of substitutes, orders have been few, but a more intensive educational campaign is certain if the strike continues much longer.

Local quotations last week were about as follows: Egg and chestnut as high as $17.25 alongside; stove, $18 also alongside. Pea coal was quoted on a basis of $6.50@$7 f.o.b. mine, while stock chestnut was quoted on a basis of $13 at the loading place.

Though no coal has been mined for three weeks, Philadelphia consumers seem indifferent. Of course, a heavy tonnage was put in the cellars this summer and summer weather lingers.

Company shippers are about done shipping any size larger than pea, with the last shipments of nut now running. It is believed that only one big company has any pea in storage and it is predicted that it will all be ordered by the end of this week. The supply of company buckwheat seems unlimited and orders are not coming along very fast. Rice is still in fair supply. Users of barley are having their needs taken care of by the substitution of rice.

Retail prices have stiffened considerably, the large sizes averaging close to $16 a ton. Stove is scarce with all dealers, yet some of the more important ones quote chestnut at $16 a ton, while stove is only $15.50. Pea coal generally is $11@$11.50.

At Baltimore stocks on hands of dealers are being gradually released, many still sending out coal on new business. If present conditions are long continued there will be a pinch unless renewed shipments begin from the mines. Undoubtedly there will be a turn to substitutes. Many consumers here are only partly stocked and quite a number have no hard coal in their cellars.

The Buffalo hard-coal trade is at a standstill but dealers are tranquil about the situation, even if there is complaint and showing of distrust. There is plenty of pea and buckwheat to be had at former prices, but consumers show little interest.

There is no business in water coal and there will be none till new-mined coal is in. It does not appear that the upper-lake ports are anxious for more and it is likely that they will stand a liberal shortage without suffering. The use of coke and smokeless coal will prevent any real distress.

Offerings of egg, stove and nut anthracite in New England have about come to an end but the big companies are still taking orders and shipping pea at regular company circular. Retail demand for anthracite slowed somewhat last week, but there is still a brisk demand for coke, so the big factor in New England-made coke is now about three weeks behind in deliveries.

## Connellsville Coke Market Unsettled

On account of fear of labor trouble Connellsville coke operators have been quite indisposed to push sales, and because of recent advances in the market Eastern buyers have been less disposed to buy, the result being a very quiet market in the past week, as to turnover.

The spot furnace coke market is quotable on the basis of latest sales at $3.75@$4, a 25c. advance, but these figures are perhaps nominal in view of latest developments.

The Jones & Laughlin Steel Corporation, which is now operating 10 of its 12 blast furnaces, has made inquiry for 20,000 tons of coke a month over the last quarter, but the trade figures it needs nearer 40,000 tons and is indisposed to quote at all, except possibly for October. The company's mines are in the union district so that it is not in position to produce its usual quantity of coke.

The independents in the Connellsville region have a scale fully 30 per cent below the Frick scale and thus have been in a delicate position when the Frick company has lately blown in so many ovens. Labor troubles might easily arise, and to advance wages would be injudicious when the coke demand is due to the anthracite suspension, for after a settlement the operators would be left with a higher coke cost than the blast furnaces could stand for.

Spot foundry coke continues dull, and accordingly the market remains quotable at $4@$4.50.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Sept. 5, 1925 | 1,102,946 | 178,218 |
| Previous week | 1,124,436 | 211,683 |
| Week ended Sept. 6, 1924 | 921,303 | 149,945 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Sept. 7, 1925 | 146,998 | 43,289 | ...... | ........ |
| Aug. 31, 1925 | 162,397 | 40,427 | ....... | ........ |
| Sept. 7, 1924 | 194,306 | 97,089 | ...... | ....... |

# Foreign Market And Export News

## Trade Lags Despite Low Prices In British Coal Market

Hopes for an improvement in the British coal trade in early September have not materialized and the outlook at the moment is very unfavorable. Though prices have reached their lowest level, foreign buyers still believe that they will recede still further and are holding up their orders. In addition to this consumers at home and abroad have heavy stocks still on hand. Accumulations at the pits are growing and it is only day-to-day shipments that enable the collieries to carry on. In some cases it has been possible to avoid stoppages, but several collieries have had to close down for periods varying from two to ten days. The operation of the pits under the present conditions is most costly, and though the excess of wages payable under the new agreement is borne by the government subsidy, few pits are being worked at a profit. It is hoped that this month will see some improvement due to decreased stocks in buyers' hands.

Low prices have failed to bring any more business to Newcastle, and the market is exceedingly quiet. Coal is offered freely for current shipment and at slightly lower prices, but business is not forthcoming. The only contract to report is one for forward shipment of various consignments totaling from 60,000 to 100,000 tons of Durham coals for Hamburg over twelve months, beginning October, at 16s. 6d. per ton for coking unscreened, c.i.f., and 16s. 10½d. for second Durham gas coals, c.i.f., with a guaranteed percentage of ash. These prices, after deducting freight, etc., leave under 13s. per ton for the coal.

Output by British collieries during the week ended Sept. 5, according to a special cable to *Coal Age*, totaled 4,255,000 tons, compared with 4,085,000 tons in the preceding week.

### French Market Is Lacking in Noteworthy Developments

In the French coal market nothing noteworthy has happened of late. Consumption is in *statu quo* and the demand upon the Nord and Pas-de-Calais collieries, on the whole, remains satisfactory. Contracts, on coming due, are generally renewed without difficulty.

The market is well sustained with regard to home fuels. As to screened varieties, they are less neglected than heretofore. Sized descriptions continue in excellent request. The demand for industrial coals is stationary.

Rouen has announced the arrival of a consignment of anthracite samples from Russia. Several French firms are trying hard to obtain a monopoly on these fuels. Russian anthracite, as sampled by consumers of the Parisian region, has been found to resemble American anthracite in that it ignites less readily than Welsh anthracite.

During the entire month of August the O. R. C. A. received from the Ruhr 230,471 tons of indemnity coke, an average of 7,750 tons daily.

The Office des Houillères Sinistrées, which has the charge of the sale of indemnity fuels has issued a new price schedule which embodies a number of advances, in some instances as high as 20 fr.

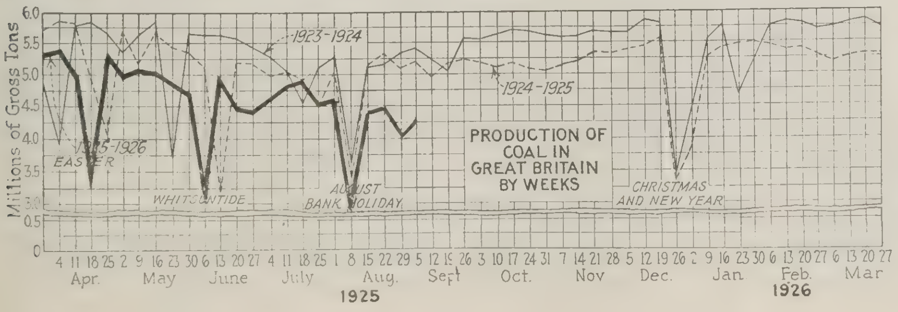
### Belgian Market Brightens As Steel Plants Resume

Announcement of the resumption of work in the iron and steel industry has given a fillip to the movement of industrial coals and cokes in the Belgian market. The improvement is manifest at Mons, Charleroi and Brussels. Collieries report orders more numerous and shipments active. Moreover, stocks are being resorted to with more vigor.

Up till now, however, there has been no talk of changing prices. As German and British competition is still keen, a decrease is not improbable.

Reports are current that wages may be cut, 15 per cent being the reduction that was to be proposed to the mixed commission. However, it is a ticklish matter to press at a time when the index number is on the rise.

The situation in house fuels continues good, with prices hardening for anthracite descriptions at inland points. With regard to briquets the situation is unchanged.



### Trade Eases Back to Normal At Hampton Roads

The first rush of coal buying, following the anthracite strike, having died down, business at Hampton Roads last week was about normal, with prices only slightly weaker than the week before, and demand holding its own. Foreign business was somewhat off, but bunker and coastwise trade was holding up.

Supplies at tidewater were normal and a number of mines reported production increasing in view of a possible heavy demand for coal during the next month. The tone of the market was firm, inquiries were steady and shippers were anticipating a steady increase in demand during the next month.

### Export Clearances, Week Ended Sept. 19, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Argentina: | |
| Br. Str. Cape of Good Hope, for Buenos Aires | 7,311 |
| For Brazil: | |
| Br. Str. General Lukin, for Para | 4,388 |
| For France: | |
| Fr. Str. P. L. M. 22, for Rouen | 8,246 |
| For Newfoundland: | |
| Nor. Str. Thomas Haaland, for Lewisport | 4,531 |

FROM BALTIMORE

| | |
|---|---|
| For Italy: | |
| Ital. Str. Isonzo 2, for Genoa | 3,501 |
| Nor. Str. Marie Nielsen, for Halifax | 2,107 |
| Br. Str. Hypatia, for Leghorn | 5,068 |

### Hampton Roads Pier Situation

(Gross Tons)

| | Sept. 10 | Sept. 17 |
|---|---|---|
| N. & W. Piers, Lamberts Pt.: | | |
| Cars on hand | 1,582 | 1,756 |
| Tons on hand | 98,076 | 108,736 |
| Tons dumped for week | 126,043 | 145,119 |
| Tonnage waiting | 15,000 | 20,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 676 | 968 |
| Tons on hand | 52,650 | 76,200 |
| Tons dumped for week | 75,584 | 57,612 |
| Tonnage waiting | 927 | 7,656 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 1,890 | 2,607 |
| Tons on hand | 96,210 | 132,430 |
| Tons dumped for week | 140,279 | 83,785 |
| Tonnage waiting | 5,730 | 115 |

### Pier and Bunker Prices, Gross Tons

PIERS

| | Sept. 12 | Sept. 19† |
|---|---|---|
| Pool 1, New York | \$5.35@\$5.60 | \$5.35@\$5.60 |
| Pool 9, New York | 4.80@ 5.00 | 4.80@ 5.00 |
| Pool 10, New York | 4.50@ 4.70 | 4.50@ 4.70 |
| Pool 11, New York | 4.30@ 4.55 | 4.30@ 4.55 |
| Pool 9, Philadelphia | 4.85@ 5.05 | 4.85@ 5.05 |
| Pool 10, Philadelphia | 4.55@ 4.75 | 4.55@ 4.75 |
| Pool 11, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 1, Hamp. Roads | 5.40 | *5.35* |
| Pool 2, Hamp. Roads | 5.20 | **5.30** |
| Pools 5-6-7, Hamp. Rds. | 4.75@ 5.00 | **5.00** |

BUNKERS

| | Sept. 12 | Sept. 19† |
|---|---|---|
| Pool 1, New York | \$5.60@\$5.85 | \$5.60@\$5.85 |
| Pool 9, New York | 5.05@ 5.25 | 5.05@ 5.25 |
| Pool 10, New York | 4.75@ 4.95 | 4.75@ 4.95 |
| Pool 11, New York | 4.55@ 4.80 | 4.55@ 4.80 |
| Pool 9, Philadelphia | 5.05@ 5.25 | 5.05@ 5.25 |
| Pool 10, Philadelphia | 4.75@ 4.85 | 4.75@ 4.85 |
| Pool 11, Philadelphia | 4.60@ 4.74 | 4.60@ 4.75 |
| Pool 1, Hamp. Roads | 5.50 | 5.50 |
| Pool 2, Hamp. Roads | 5.30 | **5.40** |
| Pools 5-6-7, Hamp. Rds. | 4.75@ 5.00 | **5.10** |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| | Sept. 12 | Sept. 19† |
|---|---|---|
| Cardiff: | | |
| Admiralty, large | 24s.@ 25s. | *24s.* |
| Steam smalls | 11s.6d.@ 12s. | *11s.3d.* |
| Newcastle: | | |
| Best steams | 15s. | 15s. |
| Best gas | 17s.6d. | 17s.6d. |
| Best bunkers | 15s. | 15s. |

† Advances over previous week shown in **heavy tpye**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

Erskine Ramsay, former vice-president of the Pratt Consolidated Coal Co., and a large stockholder and director in the Alabama By-Products Corporation, with which the former company was merged a year or more ago, has announced a gift of $100,000 to Birmingham-Southern College and a like amount to Howard College, local institutions. Mr. Ramsay is internationally known as a mining engineer and inventor of machinery for the preparation and handling of coal, and is one of Birmingham's foremost industrial and civic leaders and capitalists. Intensely interested in the cause of education, Mr. Ramsay has in recent years contributed liberally of his means to state institutions, giving $100,000 toward the establishment of an engineering hall at Alabama Polytechnic Institute, Auburn; $100,000 to the State University at Tuscaloosa, and a similar amount to the Alabama College for women, located at Montevallo.

The Galloway Coal Co. will give a barbecue to its employees at Carbon Hill Sept. 26, at which time contest will be held with first-aid and mine-rescue teams from all its operations participating for the purpose of deciding which teams will represent the company in the seventh annual field meet to be held at Rickwood Field, Birmingham, Oct. 6. Officials of the Alabama Mining Institute and prominent mining executives throughout the district have been invited to attend.

The Birmingham station of the U. S. Bureau of Mines will be equipped with a new truck with mine-rescue apparatus, including five tanks of oxygen, a pump, five Burrell gas masks, safety lamps, etc. The truck and equipment is expected to be received in time to be placed in service by Nov. 1 and will replace the old truck and apparatus which has been in use for many years. The station is in charge of F. E. Cash as resident engineer.

The byproduct plant of the Republic Iron & Steel Co., at Thomas is rapidly nearing completion and is expected to be ready for operation the latter part of October. The ovens and equipment for the preparation and handling of the byproducts are being built by the Koppers Company, there being 57 ovens in the battery, so arranged that additions can be readily made to meet future requirements. The plant will be complete and modern in every respect, employing the latest and best methods known for coking coal and extracting and handling the various byproducts.

## ARKANSAS

Judge Frank A. Youmans has granted the Western Coal & Mining Co. a temporary restraining order enjoining Jack Weatherman, of Franklin County, against interfering with the operation of the company's mine No. 6, at Denning, by cutting off its water supply. The order was granted without notice to the defendant. Hearing on an application for a preliminary injunction was set for Sept. 21. The plaintiff made bond in the sum of $5,000. The order enjoins the defendant from removing pipes from the pond on his land, from which the plaintiff obtains water to operate the mine. The affidavit of A. L. Toenges, superintendent of the plaintiff company, was presented to show that the defendant had threatened to remove the pipes.

## ILLINOIS

After having been closed down for eighteen months the Assumption coal mine, at Pana, has resumed operations, a new company having been organized and taken over the mine. The mine is 1,006 ft. deep, the deepest in Illinois, and the coal is considered the highest grade coal mined in Illinois.

Maplewood Mine No. 1, Farmington, has reopened as a co-operative mine.

Mine No. 9, at Langley, has finished a straight twenty-six day run making a record hoist, which averaged 5,500 tons a day for the actual working days of August. No. 8 Mine, Tovey, Ill., has had a daily average of over 5,000 tons for the twenty-six working days of August and No. 58 has increased its output as well. The pay roll of these three mines for the month of August will total more than a half million dollars.

Capitol Mine No. 57 of the Peabody Coal Co., Springfield, hoisted 1,731 pit cars in eight hours Sept. 3. The present management of this mine has brought the hoisting record from a thousand-car average to the present record in the last three years.

The coal mine at Edinburg, which has been closed the past two years, will be reopened soon.

Coal production and the number of miners employed in the Edwardsville district showed a decided falling off during the year ended on June 30, last, according to the report of Mine Inspector A. E. Lewis. The report showed that 3,959 miners were employed and 3,100,688 tons produced during the year. In 1923-24, 4,376 men were employed and 3,444,685 tons produced. Seven men were killed and 241 injured during the last year. The average, one death to each 442,955 tons, was about normal. The miners used 30,771 kegs of powder to blast down the coal, the report shows.

H. C. Knemoeller, county mine inspector of Macoupin County, reports that a total of 6,216,408 tons of coal was mined in that county during the fiscal year ended June 30, 1925. This is about 150,000 tons more than was produced in the year previous but is about one and one-half million tons short of the high mark.

Thomas J. Smith, of Pana, has for the eleventh successive term been appointed by the County Board of Supervisors County Mine Inspector of Christian County, making 22 successive years under both Republican and Democratic administrations.

A minature coal mine which will depict in detail the operation of hoisting coal from the earth, screening and dumping it into cars, together with moving pictures showing all underground operations of a mine, with first-aid and rescue work, is being shown at the Illinois State Fair at Springfield. The display has been prepared by the Peabody Coal Co., Chicago, and is in charge of G. J. Stelte, an official of the company's office in Springfield. The model mine is 6 ft. high and is constructed on a ratio of 1 to 24, being an exact reproduction of the company's mine No. 9 in Christian County. The model mine is electrically operated and is driven by a minature power house. The entire model is enclosed in glass, thereby preventing spectators from being annoyed by dust, yet permitting minute observation of its workings.

A 6-ft. bed of coal at 500 ft. was passed through Sept. 12 in the drilling of a prospect oil well on the Fitzpatrick farm near Pana. Three showings of oil were found. It is planned to mine the coal for market purposes.

## INDIANA

A mortgage of $300,000 given by the Bledsoe Coal Co. to the Terre Haute National Bank, Terre Haute, has been filed with the County Recorder there. The development of 3,400 acres of coal land owned by the Bledsoe company around the new Dresser power plant, southwest of that city, is said to have been the reason for the large advance.

This sum will be used in the sinking of shafts and otherwise putting the field on a production basis. The mortgage was given by the directors with the approval of the stockholders with the proviso that it be paid off in ten annual instalments of $30,000, the first payment due Sept. 1, 1926. Seven per cent interest is being charged.

Fire of unknown origin recently destroyed the mule barn at Crown Hill mine No. 5, at Clinton, together with eighteen mules in the barn. The building was insured.

The Radiant Coal Co., Terre Haute, has filed a final certificate of dissolution.

The Fort Branch coal mine, at Fort Branch, which has been closed since last April, has resumed operations, after signing a contract whereby electric loading machines will be used. Installation of the machines made necessary a new wage contract with the miners.

If a general strike of the anthracite coal industry continues thirty days or longer, the Indiana coal fields will resume full operation, according to Tyler G. Lawton, president of the District No. 11 United Mine Workers. Already in relation to the immediate resumption of work, some of the mines in Sullivan County have received large contracts and are enjoying a complete revival in business. In citing a similar instance, Mr. Lawton said in 1902 the soft coal fields were in about the same condition as they are now. The anthracite miners were called out in a general strike in April of that year and stayed out for more than nine months. Almost immediately the soft coal industry resumed full operations.

Contracts for the supply of coal for the coming school year at Terre Haute have been awarded. Bray Brothers were given the contract for supplying one-half the coal on a bid of $3.69 for 1¼x2-in lump from the Starko mine. The DeLuxe Coal & Coke Co. was given the other half on a bid of $3.70 for 1¼x2-in lump and $3.50 for 2x4-in lump. A number of other companies entered bids.

The New York Central Lines, whose southern Indiana coal terminal is located at Petersburg, will begin work with a large force of men soon building additional trackage to take care of the increased coal business in southern Indiana. The opening of new strip mines in Pike County is increasing the tonnage along the E. & I. division of the road, making it necessary for the company to build more yard tracks at Petersburg. The Pike County Coal Co., which owns thousands of acres of rich coal land in the western part of the county, has asked the railroad to run a spur road from Petersburg to Oatville, eight miles southwest.

The Winslow Mining Co., Winslow, has filed a final certificate of dissolution with the Secretary of State.

Asserting that they are justified in striking because of the increase by the C. & E. I. R.R. in transportation rates, members of the Clinton train committee of the United Mine Workers met recently with district officials and members of the Terre Haute train committee in a conference in an attempt to settle the trouble which has the Clinton field tied up. It was decided to send representatives to confer with John L. Lewis, to determine whether Terre Haute miners would join the Clinton strikers. The understanding is that Phil A. Penna, secretary of the Indiana Bituminous Coal Operators' Association, has communicated with Mr. Lewis regarding the strike and is treating the matter as a breach of contract.

## KENTUCKY

Heavy rains over the week end, starting on Sept. 12, have improved the water supply materially in Kentucky. Several mines were handicapped by a long drought and dried up water supplies, it having been reported that a few isolated operations were forced to close down in early September, due to lack of boiler water.

Involuntary bankruptcy proceedings were filed in the U. S. District Court at Covington, Sept. 5, against the Sullivan-Pond Creek Coal Co., which has its principal offices at Shock, Pike County. The complainants were the Rice-Hutchins Baltimore Co., Baltimore, Md.; the Banks Miller Co., Huntington, W. Va., and the Persinger Hardware & Manufacturing Co., Williamson, W. Va., whose claims aggregated $1,404.85.

The properties of the Letcher Coal Mining Co., in Letcher County, near Whitesburg, which have been in the courts for some time, are still idle, awaiting a final court order. The Harlan Coal Co., Louisville, which is a large creditor figures to take over the mines and place them in operation.

Seven coal towboats with 45,000 tons of coal were among eight boats that passed the Maysville locks on Sept. 4, on an artificial river rise. The Lockmaster at Dam No. 33 reported 953 boats through the locks during the month of August.

## MINNESOTA

T. T. Hammitt, sales manager of the North Western Fuel Co., Minneapolis, was a visitor at Duluth during the week of Sept. 19. He commented upon the steady gain in sales of dock coal throughout southern Minnesota as a result of the adjustment in the all-rail rates from the Illinois, Indiana and Kentucky mines into that territory.

Ford Motor Co. interests at Duluth have said that steps by which the company will obtain title to the Superior dock at Duluth now under lease to it are being taken. They hope the company will be able to carry through an extension and improvements to the dock during the coming winter. In the meantime the two Ford steamers are maintaining their schedules of runs with their coal to this market.

A conference is to be held this month in St. Paul, of Twin Cities business men and representatives of the Illinois Coal Operators' Association with Brig. Gen. T. Q. Ashburn, chief of inland waterways transportation, to discuss the use of the Mississippi River for transporting southern Illinois coal to the Twin Cities by barge.

## NEW YORK

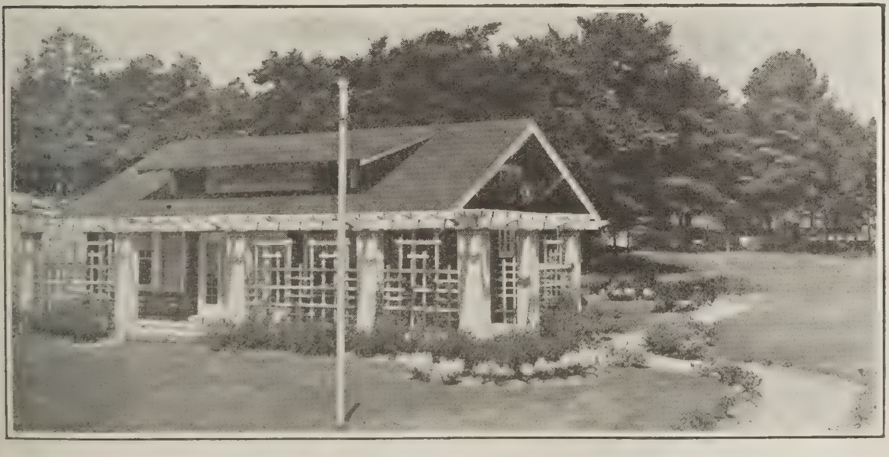
Joseph J. Eagan, a well-known Buffalo coal shipper, has bought a large interest in the Acme Coal Co.'s mine at Reimersburg, Pa.

## NORTH DAKOTA

Lignite producers of North Dakota anticipate increasing their production should the effects of the anthracite strike call for it. It is claimed that the production of last year of slightly over a million tons can be doubled.

## OHIO

One of the mines of the Maher Collieries Co., of Cleveland, located at Neffs, which had been idle for eight months, has opened recently employing approximately 300 miners. The mine has a capacity of about 2 000 tons daily and production is rapidly reaching the peak. Three mines of the Lorain Coal & Dock Co., of Columbus.



**Modern Kindergarten at Edgewater, Ala.**

In this attractive little building the children of this Southern mining town begin their efforts in "book learning." No more does the metropolitan youngster "get the jump" on his industrial-town cousin in the matter of early education. Not alone in this but in many other small communities the kindergarten has today become an established reality.

have been operated during the entire summer. They are the Blaine, Crescent and Stanley operations, with a capacity of about 7,500 tons daily. Two other mines of the same company, the Wheeling Creek and Lincoln operations, have been idle for some time. Car shortage is now appearing on the B. & O. in the eastern Ohio district, which is reducing the output to a certain degree.

August was the most disastrous month in the history of the coal mining industry in Ohio in point of fatalities, according to a recent report of Jerome Watson, chief of the Ohio Division of Mining. Eleven fatalities occurred during the month compared with one in July. Based on the number of men employed, the record of August was the highest ever known.

In a statement given out by the Hocking Valley Railway Co., covering loadings at the Toledo docks of the company for lake shipment up to Sept. 16 a total of 5,798,115 tons was loaded, as compared with 4,620,543 tons during the same period in 1924.

## PENNSYLVANIA

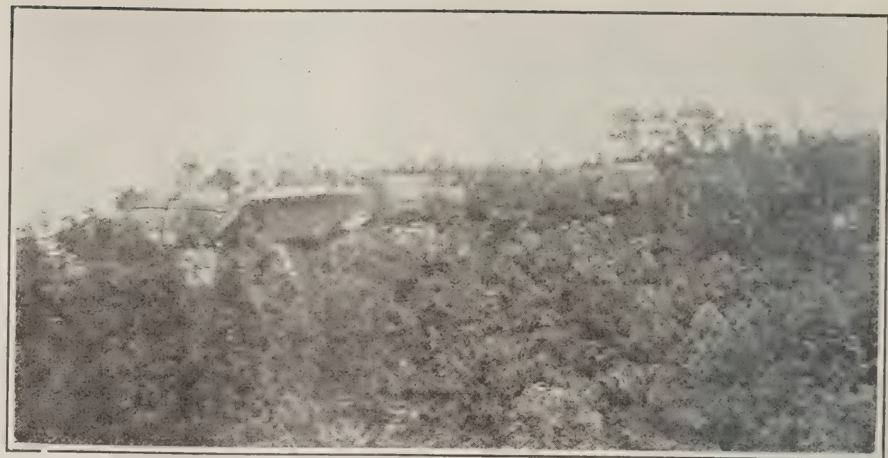
The Pennsylvania Coal & Coke Co. has awarded a contract for complete electrical equipment for four automatic mining substations to the Westinghouse Electric & Manufacturing Co. Although the total power rating for the four stations is but 1,100 kw., the stations are unusual in that the operation and control are entirely automatic. This contract represents the largest ever awarded for this class of equipment. Three of the stations are at Ehrenfeld; one for the automatic control of a 300-kw. motor generator set, another for a 200-kw. set, while the third will control two 200-kw. sets. The fourth station, located at New Shaft, will control two 100-kw. motor generator sets.

The mines and coke ovens of the Cascade Coal & Coke Co. at Sykesville, which have been idle more than two years, have been started up. It has produced over 325,000 tons in recent years and employs 375 men. It is owned in Buffalo and the product is used in the furnaces of the Rogers-Brown Iron Co., at Buffalo, N. Y.

The Armerford Coal Mining Co. and the Margaret Coal Mining Co., both of Pittsburgh, will be merged under present plans. Special stockholders' meetings were called for Sept. 22 to act upon the merger.

The monthly report of the U. S. Engineers at Pittsburgh for August shows that there were moved 1,553,660 tons of coal and 98,370 tons of coke on the Monongahela River, 452,680 tons of coal and 34,300 tons of coke on the Ohio River and 93,000 tons of coal and 12,400 tons of coke on the Allegheny River.

Eighty-nine of the 195 industrial fatalities reported for the month of August to the bureau of statistics of the State Department of Labor and Industry occurred in coal mines. There were 80 in other industries than that of mining and 25 among the transportation and public utilities companies. Fifty-eight of the mine deaths were in the anthracite district of the state and 31 in the bituminous region.



**In the Mountains of Kentucky near Stearns Co.'s Mines**

Markings on the cliff, the old settlers say, were made by the Indians, which accordingly they have designated as the "Painted Indian Signs."

A coal tipple owned by the Richards Coal Co., at the foot of Edgebrook, Brookline, in Pittsburgh, was damaged slightly by fire recently.

All right, title and interest in the Blanchard-Moshannon Mining Co. was sold to Robert P. Hunter, as trustee, at the receiver's sale held at the plant near Karthaus, Centre County, on Sept. 8. The purchase price was $34,000, subject to mortgages and agreement accounts of a face value of approximately $340,000. Mr. Hunter purchased the property for the Clinton-Moshannon Mining Co., which was recently incorporated and which, it is stated, will operate the mines. Included in the new corporation are the principal creditors of the old Blanchard-Moshannon Mining Co. William G. Blanchard of Pittsburgh, who was the dominating factor in the Blanchard-Moshannon Company, has been eliminated from the new enterprise.

The men at the Jamison Coal & Coke Co. mine near Perryopolis, Fayette County, struck Sept 9, for restoration of the high peak wage scale, which approximates the scale provided at the union mines by the Jacksonville agreement. The wage scale at this plant was reduced to the 1917 scale last spring. This plant has been working steady for some time. About 400 men are employed. The men are still out.

## UTAH

Coal production in Utah during July, according to an official report just issued, was 323,087 tons, compared with 364,948 tons in July of last year. Output in July of this year is the smallest since July, 1921, when 278,092 tons was mined in the state.

## VIRGINIA

The mines of the Consolidation Coal Co. at Alfredton will be placed in operation again soon, according to an announcement made by the company. Officials have been busy employing men and getting plants in shape to resume operation after a suspension of more than twelve months. Mine No. 225, at Alfredton, is in fact already running.

The Wilson Coal Corporation expects to resume operations at once on Hill Creek, west of Richlands. The plants of the company have been leased for three years by M. Ziegler from the Wilson Coal Corporation, which is owned by Richlands business men. Mr. Ziegler will assume management of the operation at once. A force of men has been at work for some time cleaning up and repairing the machinery preparatory to opening the mines. This company employs between seventy and eighty men. The Bull Creek Coal Co., also located on the Hill Creek branch of the Norfolk & Western, has already reopened its mines and is shipping coal regularly. The mines of this company were opened on Sept. 1 after being shut down for several months. The general office of the company is at Johnson City, Tenn. It is stated that the Glenburke Coal Corporation and the Field Scott Coal Co., also with mines on the Hill Creek branch, are working practically every day.

## WEST VIRGINIA

Directors of the Island Creek Coal Co. have declared an extra dividend of $1 a share on the common stock in addition to the regular quarterly distribution of $2. Dividends of the same amount have been paid on the common stock in the seven preceding quarters. The regular quarterly dividend of $1.50 a share was also declared. All distributions are payable Oct. 1 to stockholders of record Sept. 21.

According to statistics just compiled covering the production of the Logan field, August, 1925, proved to be the biggest month in the history of the field. Approximately 36,400 cars of coal were shipped. The record of week ended Aug. 15, when 8,546 cars of coal were taken out of the field. Thus far this year production is almost 2,000,000 tons in excess of that for the corresponding period of last year.

The Soviet commission of Russia has just completed a visit to the mining fields of southern West Virginia along the Norfolk & Western Ry. In the party were Prof. Leo D. Scheviakoff, professor of mining engineering of Ekaterinoslav Mining Academy; Dimitri M. Souchevski, chief engineer, Cherbinovka Coal Mines, and Robert P. Waggoner, director of the bureau of construction, United Coal Industries of Donetz Basin. S. Rosoff, of the Amtorg Trading Corporation, American representative for large mining trusts of London, Moscow, Kharkoff, Vladivostok and other points, acted as interpreter for commission.

The United Mine Workers have erected additions to the barracks at Rosemont and Wendel in the Flemington field.

The Dixie mine of the Dixon Coal Co., on the Western Maryland Ry, began operating non-union early in September.

The mining extension department of West Virginia University began registering students in all of its classes Sept. 21. Classes are first being organized and work will begin next week and continue until the latter part of May, 1926. During last year there were 1,315 men registered in the classes compared to 500 six years ago. Homework and examinations are a part of the course prescribed. Classes probably will be established in coal mining regions, where the largest number of coal miners and officials can be reached and indications are that the Welch, Williamson, Mount Hope, Montgomery, Logan and Wheeling sections will be awarded schools this year. There is a far greater demand for schools this year than ever before.

A circular letter was issued Sept. 16 by Van A. Bittner, chief international representative in West Virginia, instructing every local union of the United Mine Workers in northern West Virginia to appoint a committee of three to act as an educational committee, whose duty it shall be to obtain the necessary school books for the children of striking miners, because in West Virginia the parents purchase their children's books in the majority of the school districts. The letter suggests that members exchange books where possible.

Norton mine of the West Virginia Coal & Coke Co., on the Charleston Division, B. & O., resumed operation recently. This is a large mine, producing from 40 to 45 cars of coal a day.

Helen mine of the Hughes Coal Co., at Gypsy, Harrison County, was recently equipped with a 200-kw. motor generator set, which was used for the first time Sept. 15. The set will receive power from the 22,000-volt line of the Monongahela West Penn Public Service Co., instead of receiving its power from the Clarksburg trolley wires, as previously.

In the first eight months of 1925 the coal mines of the 12½ counties of northern West Virginia produced 14,576,450 net tons of coal. The monthly production was as follows: January, 2,179,200 tons; February, 1,705,400 tons; March, 1,844,250 tons; April, 1,294,650 tons; May, 1,464,950 tons; June, 1,744,750 tons; July, 2,036,650 tons; August, 2,306,600 tons. Most of the tonnage was produced on an open-shop basis after April 1.

A new tipple has been erected at the mine of the Corona Coal Co. at Hepzibah, Harrison County, to replace the plant burned down by incendiaries. Coal is loaded from two openings in the mine by the means of conveyor belts, but the coal is dumped through the same tipple. The improvements cost approximately $35,000.

Under the terms of chapter 87, Acts 1915, passed at the last session of the West Virginia Legislature, the law relating to the issuance of scrip by coal companies and other corporations to their employees has been changed so as to render scrip issued, under the new law, payable only to the employee to whom issued. The new law, which has just gone into effect, further allows such scrip to be made redeemable in merchandise. It is stated that the new law is intended to break up the practice of poolroom operators and various others who have for many years been in the habit of buying scrip from employees and hoarding it up in large amounts and then presenting it for payment several months after it was issued.

The fact that the Paisley interests, operating in the Wheeling district, have adopted the plan of paying their employees only once a month instead of semi-monthly as provided in the union contract may lead others to adopt the same policy although so far reports indicate no requests for permission to do it have been made upon the union. The men at the five mines of the company in the Wheeling district, however, have accepted the new plan, the officials of the union taking the view that it was a matter resting with the men only.

The Poca-Pack Coal Co., with an authorized capital of $125,000, has been organized by J. C. Pack, of Bramwell, and has begun operations with Paul Pack, son of J. C. Pack, as superintendent. The company is owned exclusively by J. C. Pack and family. This property is in the Winding Gulf field, on the Virginian Ry., and was formerly owned by the Smith-Pocahontas Coal Co., the property having been sold at public auction in July. The plant is thoroughly equipped to ship 10,000 tons a month of No. 3 and No. 6 Pocahontas coal. Mr. Pack is well known in the Pocahontas trade and has been closely identified with the development of the coal industry in the southern part of West Virginia for many years.

### CANADA

Production of coke in Canada in June receded to 109,694 tons from 130,068 tons in May and 131,484 tons in April. A loss in output was reported by all provinces.

William Sherman, president of District No. 18, United Mine Workers, including Alberta and a part of British Columbia, has resigned his position and is leaving for the United States. Until his successor is appointed the interests of the organization will be looked after by Robert Livett.

## Traffic

### Hold Hearing on Rates To East St. Louis

Taking of testimony in the Perry Coal Co. application for reduced freight rates on coal shipments to East St. Louis, Ill., were resumed before the Illinois Commerce Commission in the East St. Louis City Court on Sept. 15. Judge George W. Pillow of Marion, Ill., presided.

The case is directed against the Alton & Southern R.R., but nine other coal hauling roads are affected. They are the Pennsylvania, Southern, Illinois Central, Baltimore & Ohio, Illinois Traction, Terminal Railroad, St. Louis & O'Fallon, East St. Louis & Suburban and Belleville Electric.

Twenty-three coal companies are interested. They seek lower rates on coal shipped into East St. Louis from close-in mines.

There are two other cases pending before the commission. One affects mines within a radius of 20 to 60 miles of East St. Louis and in the other coal companies outside that zone are seeking to benefit by any reduction in freight rates granted the other two zones.

The coal companies contend that Illinois freight rates are high compared with those in Indiana and other states where conditions are similar.

## Coming Meetings

**National Safety Council.** Annual meeting Sept. 28 to Oct. 2, at Cleveland. Ohio Managing Director, W. H. Cameron, 168 No. Michigan Ave., Chicago, Ill.

**Tenth Exposition of Chemical Industries.** Sept. 28 to Oct. 3, at Grand Central Palace. New York City.

**Alabama Mining Institute.** Annual meeting, Oct. 6, Birmingham, Ala. Secretary, J. L. Davidson, Birmingham, Ala. The Seventh Annual First-Aid Field Meet also will be held on this date.

**American Gas Association.** Annual meeting, Oct. 12-16, at Atlantic City (Steel Pier), N. J. Secretary-manager, Alexander Forward, 342 Madison Ave., New York City.

**Kanawha Coal Operators' Association.** Annual meeting, Oct. 15, at Kanawha Hotel, Charleston, W. Va. Secretary, D. C. Kennedy, Charleston, W. Va.

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**American Welding Society.** Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**Harlan County Coal Operators' Association.** Annual meeting, Nov. 18, at Harlan, Ky. Secretary, E. R. Clayton, Harlan, Ky.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering.** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

## Obituary

**Dr. Arthur Jenkins,** 54 years of age, of Harlan, Ky., half owner of a mine near Harlan, died at a hospital in Lexington, Ky., on Sept. 5, of pneumonia. His son, Raymond Jenkins, travels in the Southeastern Kentucky mine section for the Hercules Powder Co. Two other sons and his wife survive.

**Alfred Reddington,** 65, of Charleston, W. Va., died in a Charleston hospital after an illness of several months. In 1887 Mr. Reddington went to West Virginia, locating in McDowell county as an engineer for the Turkey Gap Coal Co. and Crozer Coal & Coke Co., and also for the Crozer Land Co. In 1900 he became general manager of the Marmet Coal Co., serving with that company until 1907 when he resumed his private practice as civil engineer. He is survived by his wife, five daughters and two sons, three sisters and two brothers.

**W. P. Johnston,** 39, president of the Johnston Brothers Coal & Coke Co., and president of the Johnston Brothers Mining Co. of Wheeling, W. Va., died while seated on a chair in his bedroom at 5:30 a.m., Sept. 15. He had just recovered from an attack of peritonitis. Mr. Johnston was graduated from Linsly Institute, Wheeling, and for ten years had been one of the leading business men of the city. Funeral services were held Thursday afternoon, Sept. 17.

On Sept. 13 death claimed **L. A. Butterfield,** age 70 years, of Birmingham, Ala. He succumbed to an apoplectic stroke which he suffered three days earlier. Mr. Butterfield was long associated with mining interests in Alabama, being connected at different times with the Tennessee Coal, Iron & Railroad Co., Sloss-Sheffield Steel & Iron Co. and Tutwiler Coal & Coke Co. He came here from Charleston, S. C., in 1886. At the time of his death he was secretary of the Alabama State Land Co., owners and dealers in mineral lands. He leaves a widow, three daughters and one son.

**Alfred Frerk,** senior member of the firm of Henry Frerk, coal dealers of Chicago, and treasurer of the Chicago Coal Merchants Association, died Sept. 11, of heart disease at his home, 3655 North Harding Avenue, Chicago. Mr. Frerk, who was 51 years of age, was born in Chicago and virtually grew up in the coal business. He was an enthusiast in the development of the Villa community district and was an organizer of the Four Seasons Club of America.

## Industrial Notes

P. S. Gardner, president, **American Rheolaveur Corporation,** New York, and Andrews Allen, of **Allen & Garcia Co.,** engineers, Chicago, have returned from Europe, where they spent six weeks jointly inspecting installations of the Rheo coal washing system at prominent coal-mining plants in England, Wales, France, Belgium and the Saar. Mr. Allen states that his investigations and studies show the Rheo-washer to be ideally adapted to meet coal-preparation needs in this country. Mr. Allen announces that arrangements have been made with the American Rheolaveur Corporation for the Allen & Garcia Co. to install Rheo coal washing plants in the United States.

**L. M. Zimmer** has been appointed general sales manager of the **Linde Air Products Co.,** manufacturers of oxygen, and of the welding gas division of the **Presto-O-Lite Co., Inc.,** manufacturers of dissolved acetylene, succeeding L. M. Moyer, who resigned Aug. 1, 1925.

On Oct. 1 the **Hydrotator Co.** will move its Philadelphia office to New York City, combining it with the office of Edward B. Day at 110 E. 42nd St. Mr. Day is president of the company.

**The Kuhlman Electric Co.,** of Bay City. Mich., announces the appointment of the **D. H. Braymer Equipment Co.,** 727 W. O. W. Building, Omaha, Neb., as district representative in Iowa and Nebraska.

**The Conveyors Corporation of America,** 326 West Madison Street, Chicago, announces the appointment of **Rowland & Burns,** 39 Cortlandt Street, New York City, as district engineers for New York and vicinity.

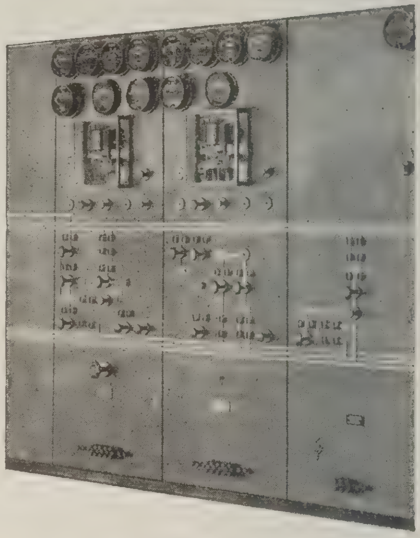
# New Equipment

## Steel Switchboard Proves Itself Suitable

A new type of switchboard, constructed of stretcher-level sheet steel, has been designed by the Westinghouse Electric and Manufacturing Co., that may be used advantageously in power plant and substation installations. This new type of switchboard is light, substantial, sturdy and easily erected.

The influx of steel switchboards has been a gradual one since 1915 when it was found that the ordinary slate and marble boards would not stand up under severe operating conditions. They were brittle and easily broken and were subject to stain by oil which marred the appearance of the board. In addition they were heavy and cumbersome.

For some time stretcher-level steel switchboards have been used on small installations in a more or less experimental way and have proved successful, so that they are now being installed on larger projects. The outstanding features of this new type of board are its lightness, substantial nature, appearance and inexpensiveness. The erection and maintenance costs are lower than those of the slate and marble boards. Their erection, in addition to being cheaper, is more simple because the framework is an integral part of the panels.



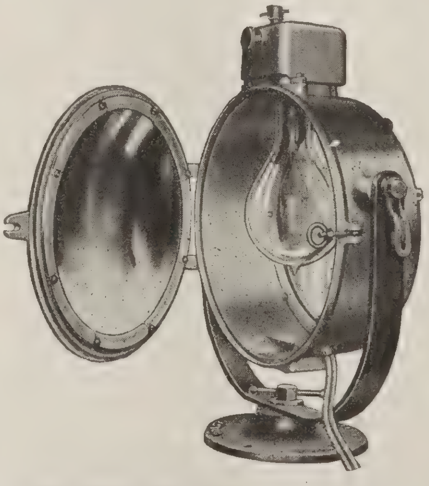
**Meters and Switches Mounted on Steel Panels**

Switchboards made of sheet steel like this one cannot be easily broken. They are light and easy to install.

The steel panels are given a baked enamel finish similar to that used in the automobile industry. They thus present a most pleasing appearance and in addition are impervious to moisture and resist corrosion.

## Floodlight with Reflector On Rear Door

The Electric Service Supplies Co., of Philadelphia, recently placed on the market a new type of Golden Glow floodlighting projector, known as type FLA-1419, for mine yard or other similar service. This new unit has been designed to provide a simple and rugged housing, being made of cast aluminum alloy in which is mounted a standard 14-in. reflector.



**Lamp Has Convenient Adjustments**

It is easy to clean the reflector on this lamp because the reflector is mounted on a hinged door. Adjustments of the light are made from the outside.

The design of the body of this new projector is unusual in that the glass reflector is mounted in the door which opens from the back of the case, thus providing easy access for the renewal of lamps and for cleaning the reflector. The door closure is a series of baffles with machined-surface fit and provides a simple, substantial and effective weather-tight joint without any type of gasket.

### Easily Focused

This new unit provides ample ventilation through liberally designed apertures at the bottom and top of the body. An easy and simple focusing mechanism is enclosed in the top ventilating cap, which permits focusing of the lamp entirely from the outside and without tools.

The body of the projector is mounted on trunnions in a yoke of ⅜ x 2-in. steel bar stock which may be rotated in the heavy cast-iron base. The curved front glass of the projector is of special heat-resisting pressed glass, approximately ¼ in. thick, which practically eliminates breakage.

These new floodlights when fitted with a 1,000-watt 115-volt PS-52 standard multiple burning lamp may be used successfully with maximum ranges of 3,000 to 3,500 ft. when mounted on towers 70 to 90 ft. high. The light has a soft, non-glaring character and is very penetrating.

A lamp of this character can be easily cleaned or adjusted when located on the top of a mine yard building.

COAL AGE

McGraw-Hill Company, Inc.
James H. McGraw, *President*
E. J. Mehren, *Vice-President*

Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. Dawson Hall
*Engineering Editor*

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## Lewis Shows His Hand

THE LAST VESTIGE OF DOUBT that President Lewis aims to get the government to fight his battle for him is now removed. In his speech at the union demonstration in Fairmont, W. Va., marking the opening of the new strike effort in that state, he said frankly enough that since "the Jacksonville agreement was negotiated and executed with the aid and co-operation of high government officials . . . . the industry has a right to expect that the moral influence and power of those same government officials will be utilized to preserve the integrity of the agreement and to maintain, in the public weal, the tranquility of the coal industry." In other words he had no solution for his problem of enforcing the Jacksonville agreement except the strike weapon and if somebody at Washington doesn't make the Pittsburgh Coal Co. and others live up to the contract, he could afflict the nation with another general strike.

There is one thing the mine owners of the country can do in defence of the industry. They can devote themselves earnestly and at once to convince the people of the land that the public weal can best be served if the citizenry and the government refuse positively and absolutely to take any hand in the controversy. Mr. Lewis may call the general strike, altogether forgetful of the public weal. It will be troublesome for a period but the nation will get a good deal of non-union coal and if no outside agency comes to Mr. Lewis' aid during that period, the United Mine Workers will ultimately cave in. No other development will serve the whole people of this nation better in this instance than a strike that fails.

Since it is impossible to compel mine workers to work if they do not approve of the contract they have, and since it is impossible to operate a mine that loses money, unless somebody makes up the deficit, popular control of mines, such as a strike-harassed nation might vision, would not relieve the country of its coal troubles. Furthermore, public control of coal would be as costly as was public control of railroads. Thus the people of the land stand to win nothing by taking up the cudgels Mr. Lewis is laying out invitingly. The most effective position they and the operators of coal mines can take today is: If there must be war, let it come. A labor force would be slow indeed to begin hostilities in the face of such a public opinion.

## Our Smaller Institutes

NATIONAL AND EVEN STATE INSTITUTES gather together only a few people outside of those who attend from the neighborhood where the institute is held. There must always be only a few who can make the longer journey to larger institutes, and consequently there is great need for local sections and chapters to complete the activity and give the village or town its full opportunity.

At Rock Springs, Wyo., for instance, is an institute, a chapter of the Rocky Mountain Coal Mining Institute, which holds meetings once a month and usually listens to two papers from members. When any of its people take a trip to mines in other states or go to institute meetings in other places, they make a report of what they learned and saw and what their opinion is of developments elsewhere. Thus the views of the members are enlarged.

It has been remarked that when any town chooses its school teachers from the immediate vicinity, the teaching gradually becomes poorer in quality. In some towns the teachers come from half the states in the Union. Last year in Rock Springs were represented teachers from New York and Louisiana and eighteen other states.

Just so with institutes. They grow weaker and weaker if they do not draw their inspiration from outside. In every district there are some who travel and when they do the local institute should fertilize the narrower experience of their members with information regarding the conditions in more distant points and avoid the inbreeding of ideas, which makes progress impossible.

## Will Not Arbitrate

CLEVER INDEED, and to many convincing, is the reply of the scale committee of the anthracite miners to Walter Gordon Merritt, counsel for the anthracite operators, refusing "to arbitrate the terms and conditions that are to be written in and to constitute a contract," between the anthracite employers and their employees.

Everyone, doubtless, is quite ready to grant that a working man has a right to quit work if he doesn't like his wage and to lie idle or seek other employment unless he gets from his old employer what he believes he ought to, or can, get. He has, as the scale committee asserts, as much right as a clothing dealer to ask his own price, and most people will say more right. But the United Mine Workers must remember that this is *not* precisely the right they are seeking.

What they demand is privilege to conspire to get high wages, using the expedient of quitting in large groups thereby endangering the health of the public, and they do it in an industry where no one not already a miner is legally allowed to work. Should any one believe that the work at the operator's figure looks attractive, he could not undertake it legally, and indeed he would find it dangerous to engage in it as has often been proved, for violence is nearly always employed against those who seek such work.

Having thus combined against the public, the mine workers should submit to arbitration. When they take corporate action they should refrain from jeopardizing public interest. Within its borders there must be no power greater than the American commonwealth. If any latitude to combine is allowed by law it must be accepted with a due sense of responsibility and utilized so that it will in no case border on oppression. That assurance will be afforded if the mine workers show a willingness to confer or to arbitrate and to work while doing the one or the other. Operators in the past have opposed arbitration, but they are learning that they cannot refuse to accept it so long as they act corporately, and the anthracite operators, made a unit by the corporate action of the mine workers rather than by any act of their own, are ready to submit the wage question to what is "practically the only peaceful solution devised for situations of this kind," to quote Mr. Merritt.

It is useless for the United Mine Workers to list instances of the determination of individuals like Rockefeller and Judge Gary or operators in a small district like Mingo as evidence of a disposition on the part of employers to act as the mine workers are doing. Such persons because they are individuals or inconsequential groups of individuals are within their rights. Moreover, these strikes did not in any measurable way injure the consumer.

The public, on most occasions where business, health and happiness are jeopardized, has called loudly for arbitration, and the anthracite operators have not been unmindful of the reasonableness of that demand. That is why they resign their rights, such as they are, and agree with the people that these difficulties with their employees should be settled without a suspension.

The Scale Committee declares that the "Coal Operators do not agree or offer to arbitrate the price at which they shall sell coal." True, the mine operators are not being asked to arbitrate their prices, and the reason is clear. *They* are not on strike. *They* have not suspended production to raise the price. If they had done so they would one and all be under prosecution or in jail. There is a rough and ready way provided to deal with such corporate action against public interest.

Nevertheless, anthracite prices have been arbitrarily fixed at times when there was no suspension of production, nor any suggestion that it was even contemplated and no semblance of proof or reasonable suspicion that any concerted action to raise prices was in contemplation. And this was done with only questionable legal justification and withal in these cases without protest from the operators affected. The public need seemed at the moment at least to many, to demand regulation, and under those conditions the operators consented and made no complaint.

## A Lesson in Double Saving

FREQUENTLY WE WAIT for necessity to drive us to make changes or adopt new devices. Last year, at the New Haven Machine Tool Exhibit, the induction motor load produced such overheating of the cables, because of low power factor, that many of the machines had to be shut down. This year the individual motors will be equipped with static condensers. Thus poor power factor conditions will be corrected at the source and the cables will be able to carry a much higher power load without overheating. There is a lesson in this for those who operate coal properties.

At mines uneconomic circuit conditions often pass unnoticed. More thought is centered upon the success with which the motor renders a given service than upon the efficiency with which it uses electrical energy. Even when a motor circuit begins to give trouble, the general practice is to bark up the wrong tree. If heavy wattless currents heat up conductors, larger cables are installed. When an induction motor will not develop sufficient torque, because of high voltage drops occasioned by circulating wattless currents, a larger motor is used. When the alternating-current circuit breaker opens—too frequently because of poor power factor loads supplied through it—the overload setting is raised until the switch renders no reasonable protection.

Such practices are exceedingly expensive, but, most regrettable of all, they aggravate the difficulties rather than correct them. Power factor penalty clauses in power schedules no doubt will change false reasoning in such matters. When power bills become too high, static condensers and synchronous motors will be more numerous. Then power costs will become smaller and equipment replacements less frequent and more money will be available for modernization and profit-making devices.

## Shallow Mine Fires

ALL THE WORK of closing off a shallow mine fire by stoppings is destroyed if the surface is not adequately policed and holes due to caves are not promptly filled. Wherever the pillars are destroyed by the fire, the roof will fall and may make openings to the surface. But falls occur in other places, due probably to the weakening of the roof consequent on falls in adjacent areas. When a piece of roof collapses to the surface directly over a burning area the gases will rise from the fire, and the atmosphere will be impregnated with sulphurous fumes. Here, however, the air is rising and consequently the fire is not being fed through these holes. It is true that such places should be filled, but it is wrong to leave unfilled the other holes where there is a connection but no fire activity, for it is just there that air probably is *entering*.

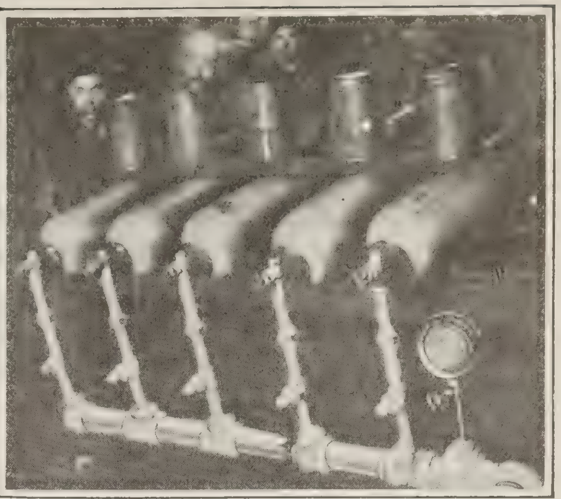
When the holes are big, pot shots along the edge will fill them up with surface material and rock. Then a scraper and shovels can be brought into operation, and surface material can be spread so as to make a good covering, which must, however, be watched day by day lest holes develop. As a fire dies, vacuum develops and the more vacuum the more active leakage. So, when the fire is down is just the time to be the more meticulous about covering it entirely. If the fire breaks out again the last condition is worse than the first.

If care be not taken the fire may become so furious as to make any preventive measures difficult and even dangerous. The surface earth also may become exhausted, and other earth may have to be brought in from distant points and carried across land that may have unseen but dangerous caverns beneath. A mine fire is not to be played with, and especially is it dangerous where a tangle of vegetation makes observation difficult. In such places it would be well to remove all shrubs so that the area might be closely watched. If the fire should spread, the area to be watched and treated will soon become so large as to bring a severe burden on any company's finances and may indeed involve the abandonment of mines.

# Drowning a Mine Fire In Carbon Dioxide

## Sealing Inaccessible Area Has Small Effect —Magazine Article Suggests Gas Attack— Carbon Dioxide Speedily Quenches Fire

**By Charles H. Strange**
Assistant to the President Pine Hill Collieries Co.,
Pottsville, Pa.



A MINE fire is troublesome enough in a single seam of coal. In an anthracite operation like that of the Pine Hill Coal Co. near Minersville, Pa., where operations are conducted in five seams badly crushed, tipped and superimposed, the difficulties were so great during a serious fire that extraordinary methods to combat it were necessary. The best known practice in sealing with concrete and projected cement did not suffice. The fire finally was extinguished by the injection of more than 500 containers of carbon dioxide into the ineffectively sealed area. In the process a good deal of experience was gained that might be of value in fighting mine fires anywhere.

### A LITTLE GAS DOES A BIG JOB

**PUTTING out a mine fire with $CO_2$ is not a herculean task of filling a mine full of this gas—nor even filling an entire sealed-off fire area. Air is already 79 per cent inert (nitrogen). The remaining 21 per cent oxygen need be reduced only to such a point as will produce an atmosphere incapable of supporting combustion. Thus, if a sealed area is almost airtight, a volume of carbonic acid gas equal to only a small fraction of its cubic contents need be introduced. But even if the area is not entirely airtight, the heavy $CO_2$ will smother a fire if it can be introduced close to the burning zone, just as common fire extinguishers put out flames in a corner without filling the entire room with gas. This is an important conclusion that Mr. Strange offers after his experience with the mine fire he describes in this article.**

The unusual expedient of fighting the fire with "soda fountain gas" was resorted to only after the men of the coal company had done the best they could with the other means at their command. Then a copy of *Coal Age* was produced that told how gas had extinguished an underground fire. The men at Pine Hill followed the same plan and won. The fire was reported Feb. 28, 1924, in the Red Ash bed on the fourth or 200-ft. level. In this locality the bed is geologically the middle split of the Mammoth bed. It is highly irregular in both thickness and character, varying from 1 to 6 ft. in thickness and from a hard firm coal to one of a decidedly shelly nature. In most places it has a firm, granular sandstone top with a fairly good sandstone bottom.

In the vicinity of where the fire was reported about 40 ft. of sandstone parting separates the Red Ash from the bottom split of the Mammoth bed (at this operation known as the Black Heath). Similarly about 200 ft. of sandstone separates it from the overlying bed, known as the Buck Mountain. Ordinarily, the top split of the Buck Mountain should-overlie the Red Ash, but this top split has been here displaced by a great overthrust fault. The Red Ash bed was about 6 ft. thick in the area affected by the fire and pitched at about a 40-deg. inclination.

The shaft workings of the Pine Hill Colliery were laid out for mining by a sort of panel system. Cross-tunnels on each level were driven across the measures at approximately 1,500-ft. intervals, all beds pitching at approximately 40 deg.

At the time of its discovery the only evidence of the fire was smoke and fumes coming from the section east of No. 1 tunnel on the fourth level and entering No. 1 overhead air tunnel which is a direct return to the fan. The fire therefore evidently was east of this tunnel, back in old workings and inaccessible, as this section had been robbed about 1,500 ft. east to No. 2 tunnel. The third, or 400-ft., level had been robbed above, as had the second, or 600-ft., level, up to a chain pillar under the first or 800-ft. level. This chain pillar had been left to support a watercourse to surface drainage. It had run through to the lower level at a number of places close together at the western end, and these had been filled with rock and gob material. At one place also it had run through near the open eastern end.

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The headpiece accompanying this article shows the carbon dioxide manifold, made up of ordinary pipe and fittings, through which five cylinders of the liquid gas could be discharged simultaneously. The valves on these cylinders were prevented from freezing by a stream of hot water kept playing on each from the carbide cans on the plank above them. Note, however, the frosty condition of the pipes. The hot water was condensed from steam run into the mine through pipes ordinarily used to bring in drinking water for mules.

This watercourse, which originally was a haulageway, had been sporadically neglected and maintained for over 70 years, and since the fallen material had been walled up along the high rib instead of being removed, this passage was very narrow with low headroom in places. The run-through opening at the eastern end of the watercourse was the only apparent return from the old workings and the only outlet for gases and blackdamp from the fire section except for the No. 1 air tunnel on the fourth level. Air in the return from the old workings in the Red Ash bed at the eastern opening of the watercourse for at least ten years, to my own personal knowledge, had been low in oxygen. It contained, however, in addition to a trace of methane, a fairly high content of carbon dioxide with a resulting preponderance of nitrogen. It thus formed a typical blackdamp containing considerable moisture and having a temperature of approximately 80 deg. F. Its composition was characteristic of returns from old workings throughout the southern anthracite field.

### Immediate Inspection Attempted

As soon as this fire was reported, everyone inside the mine was notified to proceed to the shaft bottom. Only a small force was in the mine at the time, as the day shift had gone home and only timbermen, repairmen, pump men and a few gangway miners and tunnel men were at work. All of these men were held at the shaft bottom and told to wait for further instructions. An inspection party was made up of company officials and upon investigation it was found impossible to proceed further east than the No. 1 air tunnel. This was not only because of the smoke and fumes there present but also because the territory had been robbed to the tunnel and the section was closed. The roof had broken and fallen and the material had run down the pitch and blocked the section, so as to render it impassable.

No explanation as to the origin of the fire was forthcoming. It was located in old workings that had been abandoned for almost five years. No flame could be seen in the short distance through which one could peer through the broken material. At this point the gases coming off from the fire were only at about 100 deg. F., so that it was believed that the fire was small and located possibly 200 or 300 ft. to the eastward. It was found to be practically impossible to attack the fire by direct means and accordingly it was decided to seal off the territory where it obviously must be located.

No evidence of smoke or fumes was found at No. 2 haulage or air tunnel, about 1,500 ft. to the eastward. Incidentally, in making his rounds the fireboss had noted for approximately a week previous an unusual, low-hanging fog along the gangway in the bed overlying the Red Ash, which was open from the No. 2 tunnel about 200 ft. west.

### Little Evidence Found

No evidence of fire was found at the eastern end of the watercourse opening in the Red Ash bed, which was the only other accessible place in this measure, except on the fifth level, where breasts had been driven through to about the middle of the territory between tunnels Nos. 1 and 2 on the fourth level. The faces of these breasts ended in the old robbed and impassable fourth level gangway. Here a slightly greater amount of black damp than was usual was the only evidence of fire that could be detected.

Because of the worked and robbed condition of the Red Ash bed, the only practical method of sealing off the fire area at the western end was to close the tunnels leading to the bed at the different levels, where this was possible. Such sealing would be assisted by a fault that cut the bed off at the western end. Concrete walls about 18 in. thick and reinforced with old scrap iron, as well as being hitched into the top, bottom and ribs, were hastily constructed. For convenience in reference, these were numbered. The chief seals thus built between the Black Heath and the Red Ash measures were at the following places:—Fourth level, No. 1 haulage tunnel, seal No. 12; No. 1 air tunnel, seal No. 11; No. 2 haulage tunnel, seal No. 8; No. 2 air tunnel, seal No. 8-A. On the fifth, or 80-ft. level, No. 1 air tunnel, seal No. 9; No. 1 haulage tunnel, seal No. 10. On the third level, No. 1 tunnel, seal No 3.

These seals were built with a hinged iron manhole door. A 6-in. pipe with a valve was placed near the bottom to relieve any accumulations of water, while a 2-in. pipe with a valve was placed near the top for air sampling. These seals as well as the top and ribs for a foot or more adjacent to them were heavily coated with a roof repair compound to insure their being air-tight.

At this time the fire was very quiet, emitting no puffs or explosions, and no difficulty was experienced in building any of the seals except that at No. 1 air tunnel on the fourth level. Here smoke and fumes were

**Ready for Use**

This shows the supply of liquid carbon dioxide at the top of the shaft. Over a carload of these cylinders were emptied in extinguishing the fire This gas so diluted an atmosphere already deficient in oxygen that the fire was drowned quite as effectively as if water had been directly applied to it.

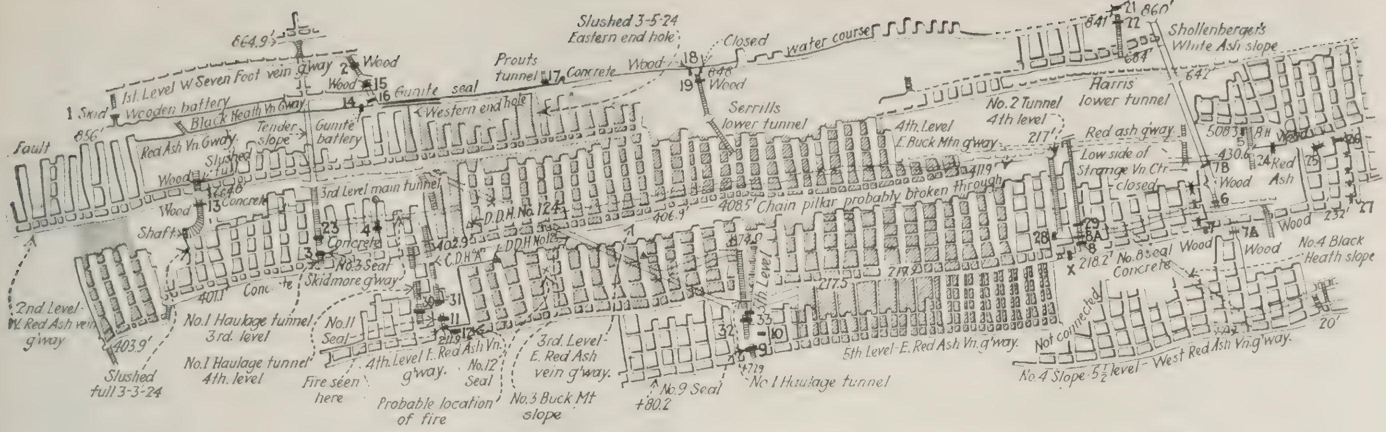

**Fig. 1—Plan of Pine Hill Coal Co. Mine Workings Showing Probable Location of the Fire**

Fire apparently originated in a region so badly caved as to be inaccessible for direct attack and the indirect method of smothering consequently had to be resortedto. Inasmuch as several heavily pitching beds are here super-imposed one above the other (see Fig. 2) this mine plan is not as easily comprehended as is one showing a single bed lying nearly level.

present in volume. At this point, also, the work of concreting was carried on under difficult conditions, as the necessary materials had to be carried up an old chute for approximately 35 ft. and then along an old monkey heading for another 25 or 30 ft. to the air tunnel. This work was done by a bucket brigade and inasmuch as the air tunnel was a return for this heading, these men were in fresh air, as the fans were left in operation on the normal exhaust system. This was not the case, however, with the man who actually poured the concrete into the seal form, as he was directly in the path of the hot gases. This man was, therefore, equipped with an oxygen helmet. The men distributed along the heading were similarly equipped so as to be ready for any emergency, but did not use their helmets. Later on they, as well as the one working at the seal, were supplied with gas masks. This equipment proved entirely satisfactory and the work proceeded more rapidly after its adoption as the masks were not so heavy and bulky as the helmet equipment.

Five men equipped with oxygen helmets were held in reserve at No. 1 haulage tunnel on the fourth level ready for any emergency. It took from 10 p.m. of the evening upon which the fire was discovered until midnight of Feb. 29 to complete concreting the seals. In the meantime, wooden batteries and concrete seals were being constructed at other locations (as shown on the accompanying map) as an extra precaution.

Jesse Hensen, foreman, with the Pennsylvania Bureau of Mines, arrived early on the morning of Feb. 29 and gave extremely valuable advice and assistance in the handling of the situation.

### Boiler Ashes Slushed In

It was found impracticable to build a secure seal across the No. 1 tunnel on the second level, as the inside end of this passage leading to the Black Heath bed under the Red Ash measure was inaccessible. Accordingly a 6-in. wrought iron pipe line was run down the shaft to this level and boiler ashes from an old bank near the top of the shaft were slushed in until it was completely filled. In order to be sure that this passage would be entirely blocked as well as to allow for settling, an elbow was placed at the discharge end of the pipe and an extension run up into a roof fall. By this means, the discharge of the pipe was about 4 ft. above the roof of the tunnel. In a similar manner, breast No. 8 from the fourth level in the Red Ash was slushed full from the shaft to the third level gangway.

At the watercourse on the 800-ft. level, a 6-in. pipe was laid into the outside of the eastern hole in the same pillar and slush run in to seal this opening. At the western end, where this pillar had run through, and the space had filled up with loose rock, it was not practicable to seal the low side with slush, and simultaneously keep the watercourse open (as was desired). This opening was, therefore, sealed in the following manner:— West of the hole, where the top and ribs were fairly solid, these surfaces were coated with gunite. Small sets of timber were then placed inside of the old gangway sets which were somewhat decayed. The small sets were then boarded on the inside with planks, to which expanded metal was nailed and the covered passageway thus constructed was then coated on the inside with gunite. This passageway was carried past the broken ground and again sealed to the top, ribs and bottom. The bottom was here covered with about 6 in. of "yellow boy" or sludge that was present in the watercourse.

Because this work had to be done from the western end, in which direction the return air moved, the cement projecting machine operator was equipped with an oxygen helmet. At this point the danger was ever present that carbon monoxide might be encountered at any moment. As soon as all seals in the Red Ash bed were completed work was resumed in the balance of the colliery, only four working days having been lost.

### Analyzed Air Samples

On March 4, samples of the air were taken at the various seals and analyzed. The results of these analyses are shown in Table I. On March 20, it was noted that seal No. 11, in the No. 1 overhead tunnel, was becoming extremely hot, some portions of the wood form left on the concrete being charred. Upon looking through the air-sampling pipe the fire could be seen, blazing furiously and emitting a decided roar. This seal was accordingly reinforced with an extra 2 ft. thickness of concrete as an added precaution.

Obviously the fire was gaining headway. It was believed that either it had not had sufficient time to consume the oxygen, that had been sealed in with it, or that the seals were not tight at the eastern end of the fire territory. Analysis of air samples showed that the fire was getting oxygen, evidently from above the No. 2 tunnel on the fourth level, as well as from the

**Table I—Analysis of Air Samples from Various Points**

| Passage Sealed | Seal Level | Seal Location | Number | Composition of Air in Per Cent Oxygen $O_2$ | Carbon Dioxide $CO_2$ | Carbon Monoxide CO | Marsh Gas $CH_4$ |
|---|---|---|---|---|---|---|---|
| | | March 4, 1924 | | | | | |
| Water Course........ | First | Western Hole | .... | 15.4 | 4.06 | 0.06 | 0.25 |
| Water Course ....... | First | Eastern Hole | .... | 16.7 | 2.82 | 0.017 | 0.63 |
| Second level, inaccessible, due to slushing. | | | | | | | |
| No. 1 Tunnel ....... | Third | ............ | 3 | 12.8 | 3.26 | none | 0.12 |
| No. 1 Air Tunnel..... | Fourth | ............ | 11 | 6.2 | 8.63 | 0.24 | 1.74 |
| No. 1 Haulage Tunnel | Fourth | ............ | 12 | 12.3 | 3.87 | 0.33 | 1.25 |
| | | March 10, 1924 | | | | | |
| Water Course........ | First | Western hole | .. | 13.6 | 4.74 | 0.0013 | 0.25 |
| Water Course........ | First | Eastern hole | Inaccessible due to slushing | | | | |
| No. 1 Tunnel........ | Third | ............ | 3 | 0.6 | 4.67 | none | 0.67 |
| No. 1 Air Tunnel..... | Fourth | ............ | 11 | 6.6 | 8.56 | 0 63 | 2.86 |
| No. 1 Haulage Tunnel | Fourth | ............ | 12 | 10.8 | 5.26 | 0.47 | 2.76 |
| No. 2 Haulage Tunnel | Fourth | ............ | 8 | 13.9 | 1.57 | none | 1.02 |
| No. 1 Haulage Tunnel | Fifth | ............ | 9 | 19 | 0.34 | none | 0.46 |
| | | March 20, 1924 | | | | | |
| Water Course ....... | First | Western hole | .. | 15.7 | 2.66 | none | 0.23 |
| No. 1 Tunnel ....... | Third | ............ | 3 | Trace | 4.91 | none | 0.96 |
| No. 1 Air Tunnel..... | Fourth | ............ | 11 | 5.3 | 10.28 | 1.53 | 0.72 |
| No. 1 Haulage Tunnel | Fourth | ............ | 12 | 8.4 | 7.1 | 0.52 | 2.57 |
| No. 2 Haulage Tunnel | Fourth | ............ | 8 | 11.9 | 0.6 | none | 0.94 |
| No. 1 Haulage Tunnel | Fifth | ............ | 9 | 20.2 | 0.2 | none | 0.42 |

fifth level. A large quantity of fresh air had been sealed in in the fifth level, as the workings at this point were live. Naturally this would have to be consumed by the fire before it would smother itself but it was known that the interval between the eastern end of the fourth level and the surface was not tightly closed. All levels above the fourth had been robbed and were inaccessible to sealing.

It would, of course, have been possible to put down boreholes in a direct line with the pitch from the watercourse to the fourth level and slush in a silt barrier. The surface conditions, here encountered, however, would mean starting the drill through 40 to 60 ft. of a mine rock and slate refuse bank. This method also would have entailed running the slush into a robbed territory with no possibility of controlling its course, which would have resulted in an utter uncertainty of making a tight seal. Furthermore, it would have taken weeks or possibly months to put down the holes and complete the slushing. In the meantime, the fire would be getting beyond control. It was necessary, therefore, that something be done and done quickly.

### Black Heath Passages Sealed Off

It was thought by Mr. Brennan, state mine inspector, that possibly the parting between the Red Ash and the underlying Black Heath measure had broken through and that the fire was getting air through these crevices. Accordingly passages in the Black Heath bed were sealed off in the same manner as those in the Red Ash. In order to do this, it was necessary to seal off the water course entirely. Even in the case of the Black Heath bed, however, it was impracticable to make a tight seal at the eastern end of the territory.

About this time I recalled having once read an article describing how liquid carbon dioxide had been used in combating a fire in the Bitner mine of the H. C. Frick Coke Co. The copy of the magazine containing this article was found and studied and it was accordingly decided to try the use of this gas. The following conditions were assumed to exist in this particular case:— The western end of the fire territory, according to available maps, inspections, and the result of air tests, as well as general observation, was considered to be practically air-tight, but the eastern end could not be sealed effectively. If then carbonic acid gas could be discharged directly into the fire in sufficient volume, it would dilute the oxygen and, together with the nitrogen present in the mine air, form a body or cloud of inert gas or blackdamp. This would blanket the western end of the territory and hold back or prevent fresh air from reaching the fire area.

Furthermore, by introducing carbonic acid gas and diluting the oxygen content of the mine air to 8 or 9 per cent, conditions that would extinguish the fire would be hastened, whereas waiting for the fire itself to create such conditions would entail the liability of its spreading over a great area and attaining large magnitude before the oxygen would be depleted to such a point that it would not support the combustion of incandescent coal.

I was also much impressed by a statement made by G. S. Newth in his textbook on inorganic chemistry, to the effect that "the power of carbon dioxide to extinguish flame is so great that a taper will not burn in air in which this gas is present to the extent of 2½ per cent, and in which the oxygen is reduced to 18½ per cent."

### Obtains Supply of Carbon Dioxide

From a local bottling works I ascertained that it obtained its supply of carbon dioxide from a plant in Newark, N. J. I accordingly got in touch with the manager of this concern, who immediately sent out four 5-ton trucks loaded with 320 cylinders of gas, each containing about 50 lb. or 450 cu.ft. at average atmospheric temperature and pressure. The four truck loads arrived the next day, March 21, and on Sunday, March 23, a carload containing 250 cylinders arrived.

In the meantime, the seals leading to the Black Heath bed were being completed. Introduction of the inert gas was not begun until Wednesday afternoon, March 26, when the last seal had been completed and all were carefully inspected. A water gage, such as is used on mine fans and a recording pressure instrument, were placed on the No. 3 seal at the third level in the Red Ash bed. (The air sample and water release pipe in the Red Ash seals had been lengthened and run through the Black Heath seals). The gage showed a varying pressure behind the seal of from 0.1 to 0.25 in., of water, with rapid fluctuations at intervals.

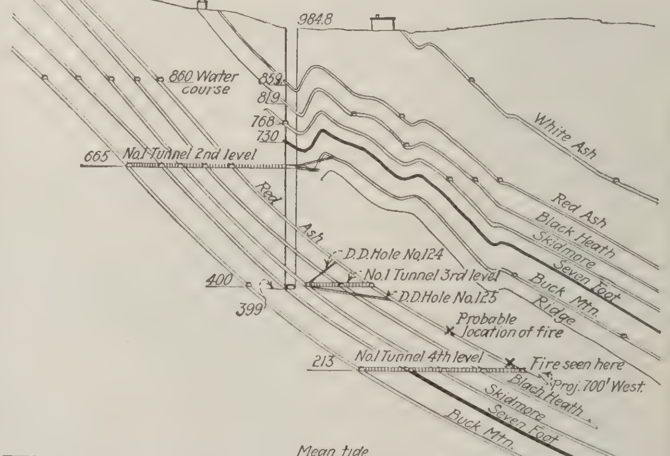

**Fig. 2—Cross-Section of the Measures Worked**

As may be here seen, the measures have been dislocated by a fault. The coal beds appearing on the right are continuations of those on the left of this figure. They have, however, been lifted and pushed sidewise, relatively, by the thrust of the faulting movement. More or less caving between beds apparently allowed the fire in the Red Ash to draw air from the Black Heath. Seals, accordingly, had to be constructed in both these measures.

**Sending Cylinders Into the Mine**

Sacks of cement are also shown ready to be lowered. This fire was successfully fought with two materials—cement, which, in the form of concrete and gunite closed the fire area practically air tight, and carbon dioxide which then extinguished the fire.

Manifolds, to each of which 5 cylinders of gas could be attached, were employed. These were fitted with valves, pressure gages, etc. One was attached to the No. 11 seal air sample pipe, and the other to the corresponding pipe in seal No. 12. Instead of using blow torches to prevent the discharge valves from freezing, steam was run into the water pipes leading to the barn on the fourth level at a point opposite No. 1 tunnel and which normally conveyed drinking water to the mules. This steam left these pipes as hot water near the place where the cylinders were set up in the Buck Mountain gangway, about 200 ft. from the seals. Above each cylinder was placed an old 10-lb. carbide can. This was kept full of hot water, which was directed in a small stream from a nail hole punched in the bottom of the can and played onto the valve of the cylinder. This prevented the valve from freezing.

### EFFECTS OF GAS SOON NOTICED

Carbide dioxide gas was turned into the seals at 2:40 p.m. of Wednesday, March 26. At 3:20 the recording water gage at seal No. 3 on the third level showed an abrupt drop from 0.1 in. to below zero, thus indicating a vacuum. This negative pressure could not be registered, however, as the water gage was constructed to record positive pressures only. It was evident, however, that the inert gas introduced behind the seals was cooling off the fire quite rapidly. By 7 p.m., Wednesday, 194 cylinders had been emptied into the fire area and by 6 a.m. Thursday morning, this number had been increased to 436. By 4 p.m. of Thursday, 558 cylinders had been discharged and only 12 full ones remained. These were poured in, one at a time, taking eight hours for the discharge of each (some of the cylinders had been accidentally emptied through leaks in the safety cap and from other causes).

**Table II—Analysis of Air Samples Taken April 1, 1924**

| | Seal | | | Composition of Air in Per Cent | | | |
|---|---|---|---|---|---|---|---|
| Passage Sealed | Level | Location | Number | Oxygen $O_2$ | Carbon Dioxide $CO_2$ | Carbon Monoxide CO | Marsh Gas $CH_4$ |
| Water Course........ | First | Western hole | .. | 4.6 | 5.61 | none | 0.82 |
| No. 1 Tunnel....... | Third | ............ | 3 | 19.8 | 0.03 | none | none |
| No. 1 Air Tunnel..... | Fourth | ............ | 11 | 10.8 | 4.94 | 0.14 | 0.67 |
| No. 1 Haulage Tunnel | Fourth | ............ | 12 | 8.4 | 12.21 | 0.13 | 1.76 |
| No. 2 Haulage Tunnel | Fourth | ............ | 8 | 16.6 | 1.65 | none | 0.69 |
| No. 1 Haulage Tunnel | Fifth | ............ | 9 | 19.4 | 0.17 | none | none |

An air-tight vestibule was constructed leading into the Black Heath seal at No. 1 (haulage) tunnel on the fourth level, and on March 29, an oxygen helmet crew passed through this seal and on to seal No. 11 in the air tunnel where the fire had been seen burning intensely on March 20. The air sample pipe was here disconnected and upon looking through it, everything appeared dark behind the seal. A thermometer was introduced through this pipe and the temperature inside the seal was registered as 182 deg. F.

### AIR SAMPLES AGAIN COLLECTED

On April 1, air samples were collected as before, their analyses being shown in Table II. On April 16, the temperature was 105 deg. F. at the No. 11 seal in the No. 1 air tunnel on the fourth level. Analyses of air samples taken on April 16 are set forth in Table III.

During the last week of April a long-distance, recording thermometer of the mercury tube type was placed in seal No. 11, and the cable carried out in No. 1 tunnel through the Black Heath seal. This instrument was so placed that temperature readings could be taken with greater convenience and safety than was before possible. The conditions surrounding No. 11 seal had become extremely dangerous, as the timbers had started to break and the ribs and top were spalling off because of the intense heat to which they had been subjected. The use of oxygen helmets, necessary when taking the temperatures at this point, was inconvenient as well as dangerous.

**Table III—Analysis of Air Samples Taken April 16, 1924**

| | Seal | | | Composition of Air in Per Cent | | | |
|---|---|---|---|---|---|---|---|
| Passage Sealed | Level | Location | Number | Oxygen $O_2$ | Carbon Dioxide $CO_2$ | Carbon Monoxide CO | Marsh Gas $CH_4$ |
| Water Course........ | First | Western hole | .. | 1.9 | 4.64 | none | 0.33 |
| No. 1 Tunnel....... | Third | ............ | 3 | 3.1 | 4.92 | none | 0.91 |
| No. 1 Air Tunnel..... | Fourth | ............ | 11 | 7.2 | 6.18 | 0.013 | 0.78 |
| No. 1 Haulage Tunnel | Fourth | ............ | 12 | 7.4 | 5.59 | none | 2.14 |
| No. 2 Haulage Tunnel | Fourth | ............ | 8 | 17.6 | 1.44 | none | 0.46 |
| No. 1 Haulage Tunnel | Fifth | ............ | 9 | 17.4 | 0.57 | none | 0.13 |

**Table IV—Analysis of Air Samples Taken May 10, 1924**

| | Seal | | | Composition of Air in Per Cent | | | |
|---|---|---|---|---|---|---|---|
| Passage Sealed | Level | Location | Number | Oxygen $O_2$ | Carbon Dioxide $CO_2$ | Carbon Monoxide CO | Marsh Gas $CH_4$ |
| Water Course........ | First | Western hole | .. | 0.4 | 1.55 | none | 0.95 |
| No. 1 Tunnel....... | Third | ............ | 3 | 14.6 | 2.44 | none | 0.2 |
| No. 1 Air Tunnel..... | Fourth | ............ | 11 | 7.5 | 4.77 | none | 2.21 |
| No. 1 Haulage Tunnel | Fourth | ............ | 12 | 7.7 | 4.83 | none | 1.83 |
| No. 2 Haulage Tunnel | Fourth | ............ | 8 | 17.6 | 1.44 | none | 0.46 |
| No. 1 Haulage Tunnel. | Fifth | Water behind seal prevented sampling air | | | | | |

During March air samples were taken at the various seals approximately every day. In April they were taken every three or four days, while in May, about once a week. Only a few representative analyses are here given, as it is not desired to burden the reader with unnecessary details. The nitrogen content of the air also has been omitted.

### CONSIDERED FIRE EXTINGUISHED

The air sample of April 18, taken in seal No. 11, where the fire was first discovered, was the last one to be secured at any point in the mine showing the presence of carbon monoxide. The samples taken on May 10 are set forth in Table IV. As the result of these analyses and those of other samples taken later, from time to time, showing a gradually cooling temperature, the fire was considered to be extinguished.

**Quenching the Fire**

This shows one of the seals through which carbon dioxide is being poured. When this gas leaves its containing cylinder it is at a temperature of approximately 40 deg. below zero, Fahrenheit. It thus has a decided cooling influence upon the atmosphere into which it is poured. In fighting this fire this refrigerating action was manifested by a pronounced drop in pressure within the seals a few minutes after introduction of the gas was begun.

During May, it was decided to drive two Diamond drill holes from the Skidmore bed gangway on the third level (which was accessible) to such points and at such angles as to bring one hole into the Red Ash bed within the fire zone under the old chain pillar below the third level a little east of No. 1 air tunnel on the fourth level. The other should have holed through into the Red Ash in about the same plane as the first but above the old chain pillar. Such holes would furnish accurate indications of conditions existing in the fire area both as to the composition of the air and the existing temperatures in these various localities.

The first hole drilled, No. 124, was above the chain pillar and after much difficulty in getting through the robbed Black Heath measure, it entered the Red Ash on May 26. The analysis of air taken from this hole showed oxygen 9.7 per cent, carbon dioxide 5.14; carbon monoxide none; marsh gas ($CH_4$) 1.83 per cent. The temperature was 120 deg. F.

Hole No. 125 intended to reach the Red Ash bed under the same pillar, met with many mishaps and finally the diamond bit was lost when it was estimated that the hole had just reached the bottom slate of the Red Ash measure. Analysis of the air taken from this hole showed oxygen 8 per cent; carbon dioxide 5.23; carbon monoxide none; marsh gas 1.49 per cent. The temperature was 88 deg. F.

### Tested Air and Noted Temperatures

As an extra precaution, a diamond drill hole, No. 126, was put down from the 7-ft. bed in the fourth level through the robbed Skidmore and Black Heath measures reaching the Red Ash at the face of breast No. 10, about 500 ft. each of where the fire had been seen at No. 1 tunnel. The air sample taken from this hole on June 20 showed oxygen 1.3 per cent; carbon dioxide 7.76; carbon monoxide none; marsh gas 2.38 per cent. The temperature at this point was 104 deg. F. Electric thermocouple, long-distance, recording thermometers were placed in these drill holes and the temperatures noted daily.

By October the temperature in seal No. 11 had fallen to 78 deg. F., and that in the drill hole above the chain pillar in the fire zone to 108 deg. The temperature in the last drill hole mentioned at breast No. 10 of the Red Ash measure was down to 84 deg. F. The seals isolating the fire area have never yet been opened although all danger of reignition has to all appearances long since passed away.

During June, 5 gal. of amyl acetate (banana oil) had been poured into seal No. 11. About one week later the odor of this liquid became perceptible at No. 1 tunnel seal in the fifth level. This was the only place where the odor was ever detected, indicating an extremely sluggish movement of air through the fire area, which was, of course, the condition to be desired as reignition is thus rendered improbable.

Regarding the use of carbon dioxide for extinguishing mine fires, I have found the opinion prevalent that the sealed fire territory must be completely filled with this gas before the fire will be extinguished. In other words, most people think that each 100 cu.ft. of space must be filled with 100 cu.ft. of carbon dioxide before the fire will die. They are wrong.

### General Assumption Disproved

To all practical intents and purposes pure air consists of 21 per cent oxygen and 79 per cent of nitrogen by volume. Nitrogen is exactly as inert a gas as is carbon dioxide, so that roughly four-fifths of the space sealed in with any fire is already filled with an inert gas and only one-fifth contains oxygen. This must, of course, be diluted to the point where it will not support combustion.

Furthermore, if carbon dioxide can be so introduced that it will fall directly onto or in close proximity to a fire, it is evident that a smaller quantity of the gas will be necessary. As an example, a popular and efficient portable hand fire extinguisher contains a liquid that frees carbon dioxide when it comes in contact with heat. This gas then smothers the fire by forming an inert gaseous blanket above it. A small extinguisher will thus put out quite a large blaze in the open. It is not necessary to fill an entire room with carbon dioxide from the extinguisher before any fire in it will be quenched, provided the extinguisher can be played directly upon the blaze.

This same principle applies in extinguishing mine fires with gas. The volume of carbon dioxide needed, is, after all, small and the more directly it is applied to the fire, the smaller the requirement.

# History Records How Miners' Union Got Strangle Hold on Central Competitive Field

**By Sydney A. Hale**
Special Contributor, *Coal Age*,
New York City

THE CENTRAL COMPETITIVE FIELD offers the most logical starting point for a survey of the labor situation in the bituminous industry. For over a quarter of a century the coal districts of Illinois, Indiana, Ohio and western Pennsylvania have been the citadel of union strength. There more than anywhere else, unless it be in the Southwest or the relatively unimportant Michigan coal field, organized labor has been strongly entrenched. That attempts are now being made in parts of the Central Competitive Field to seek escape, not from collective bargaining, but from the inflexible domination of the international officers of the United Mine Workers of America is in itself convincing evidence that there is solid ground for the charge that the organization headed by John L. Lewis is facing the most critical period in its history.

The commanding position of the Central Competitive Field in union affairs is not the outcome of whim or chance, but the result of developments which stretch back to the beginnings of a national labor consciousness in the soft coal industry. The movement was cradled in Illinois back in the Civil War days. Mark Hanna was its friend fifty years ago. It was Col. W. P. Rend, also a Central Competitive Field operator, who encouraged the National Federation of Miners and Mine Laborers—one of the predecessors in interest of the United Mine Workers—to issue call after call for a joint conference of operators and miners. To his persistence and that of other operators whom he won over to his views was largely due the first joint interstate agreement, signed in Columbus, Ohio, in February, 1886.

That milestone in collective bargaining which brought producers of Illinois, Indiana, Ohio and Pennsylvania into group contractual relations with their workers in response to the call "to frame a scale of wages, agree upon uniform working conditions, adjust market and mining prices in such a way as to avoid strikes and lockouts and to give each party an increased profit from the sale of coal" did not mark the end of the dissensions which had wrecked the earlier labor organizations in the bituminous field. Neither did it usher in any era of unbroken solidarity in the ranks of the producers in those four states. It was not until January, 1898, that the now famous joint interstate conference held at Chicago drew the operators and miners of Illinois, Indiana, Ohio and western Pennsylvania into an association that was not seriously disturbed for the better part of a generation.

The Central Competitive Field, therefore, has an organized labor background of over 60 years' duration. During nearly half of that time the organization has been so close and so powerful that it has become the fashion to speak of the mines in this region as 100 per cent union. Strictly speaking, this is not wholly correct. Scattered throughout the four states are the small country banks which recognize no union in their labor relations. As a matter of fact, in some cases the intermittent operation of these mines is a co-operative or a family affair. The number of workers employed at any one mine of this class is small and their activities escape the scrutiny of both the state and the union.

Illinois mining laws, for example, apply only to operations where ten or more men are employed. By far the greater number of these mines are saved from compliance by this provision. And that number is not small. The 1923 Illinois state coal report listed 194 local mines in Fulton County alone—and only seven of this number employed ten or more men. The production, however, was inconsiderable, aggregating 259,327 tons, with the majority of the mines producing less than 1,000 tons in the year. It is not surprising, therefore, that the union exhibits a fine disdain for the labor status of these pits and passes by their non-unionism as a thing of no concern.

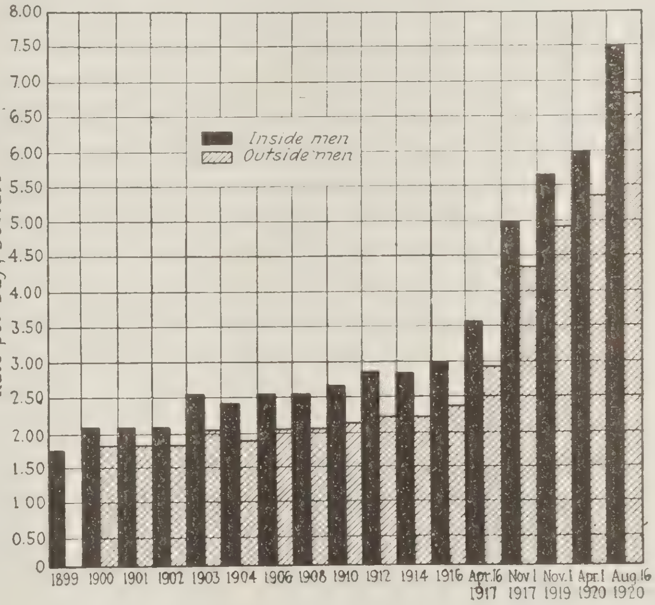

**Fig. 3—Increases in Day Wage Rates Under Union Domination**

This chart, based upon figures furnished by the Illinois Coal Operators' Association, shows the upward movement in base rates to inside and outside day labor since the organization, for collective bargaining, of the Central Competitive Field.

The quarter of a century of close relationship following the signing of the joint interstate agreement of 1898 has not, as is well known, been free from strikes. There have been several suspensions of varying length, intensity and territorial sweep. But even in the most prolonged struggles, as in Ohio in 1914-15, there was no real attempt upon the part of the oper-

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Second of a series of articles describing the changes in the labor status of the different bituminous coal producing districts of the United States in recent years. The first appeared in *Coal Age*, Sept. 24, 1925. Another article will be in an early issue.

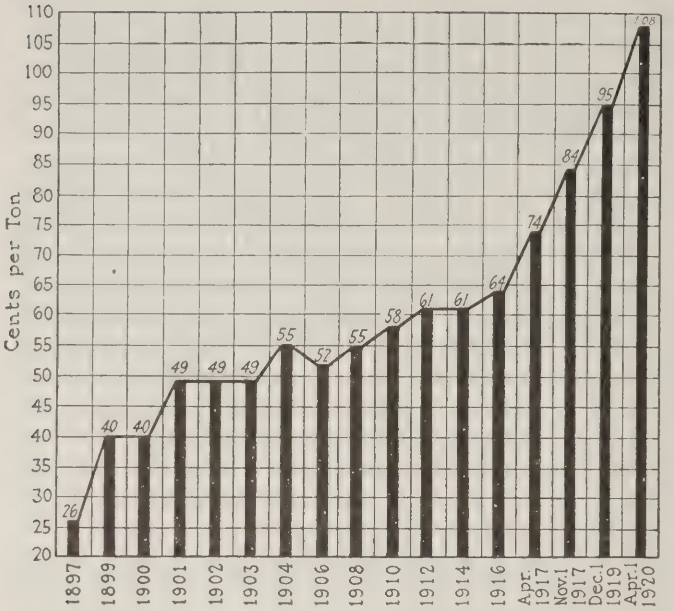


Fig. 4—The Steady March of Tonnage Rates in Union Territory

The rates shown are those paid for pick-mining in the Danville, Illinois, district. The Danville rate, which is the same as that paid in Indiana, is the base rate for the greater part of the Central Competitive Field. Rates, both pick and machine mining, in other parts of the four-state territory are adjusted differentially to the Danville base.

ators to challenge the control of the United Mine Workers of America over their destiny. Such efforts, it appeared, had faded out of the picture years before with the collapse of the resistance of Pana and Virden operators to the 1898 agreement. Joseph Leiter's spectacular fight against the union a few years later was the leadership of a forlorn hope. William J. Lester's experiment which culminated in the Herrin massacre was the venture of a man not identified with any other operator or operating group in Illinois.

It is only in the present year that growing resentment over the unqualified refusal of the international officers to recognize post-war economic readjustments and to meet the operators to discuss downward revisions in wage rates in the same spirit in which the producers met with them to approve upward revisions during the war years has flared into open rebellion. Up to this year it has been a question of making the best bargain possible with the union. There was no suggestion that, if a satisfactory bargain could not be made with the union, the operators would dispense with the union. Even the abortive attacks made by the producers of Ohio and western Pennsylvania in 1922 were attacks upon the Central Competitive Field system of making contracts—not attacks upon the principle of making contracts between the operators and the United Mine Workers of America. If there have been schisms in the quarter of a century, the schisms have been in the ranks of the employers, and the union leaders have been astute enough to use internal market jealousies to further their own cause.

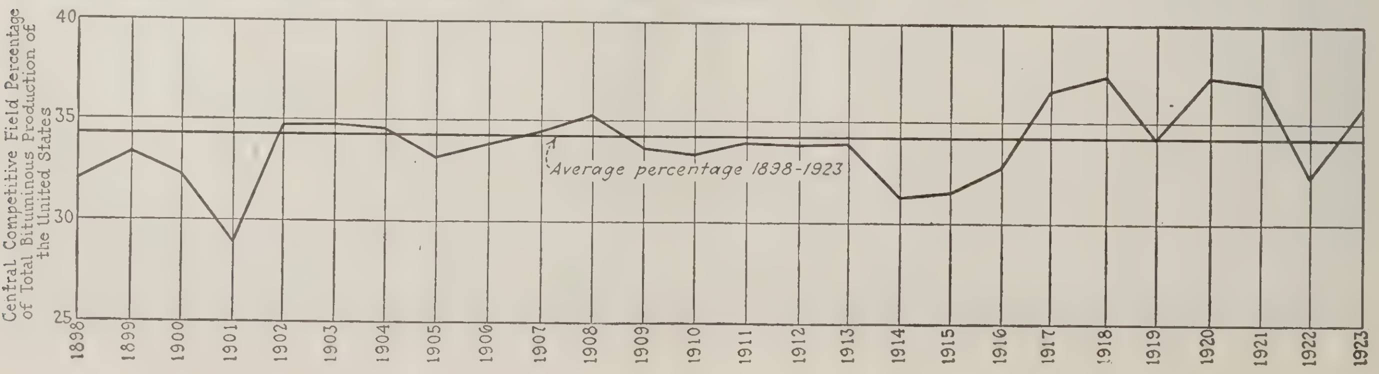
During the long period in which the supremacy of the United Mine Workers of America was fully acknowledged by the operators, the labor factor in production cost has been subjected to a steady upward pressure—continuous except for the interval covered by the two-year contract ended March 31, 1906. That was the only time since the United Mine Workers became the dominant force in the Central Competitive Field that there was any reduction in wage rates conceded by the

## Table II—Central Competitive Field Production in Relation to Total Bituminous Output

(In net tons)

| Year | Illinois | Indiana | Ohio | Western Pennsylvania* | Total in Central Field | Total Bituminous Tonnage—United States | Central Competitive Field—Per Cent of Total Output—Year | Five-Year Average |
|---|---|---|---|---|---|---|---|---|
| 1898 | 18,599,000 | 4,921,000 | 14,517,000 | 15,349,000 | 53,386,000 | 166,594,000 | 32.0 | |
| 1899 | 24,439,000 | 6,007,000 | 16,500,000 | 17,157,000 | 64,103,000 | 193,323,000 | 33.2 | 32.5 |
| 1900 | 25,768,000 | 6,484,000 | 18,988,000 | 17,421,000 | 68,661,000 | 212,316,000 | 32.3 | |
| 1901 | 27,332,000 | 6,918,000 | 20,944,000 | 9,967,000 | 65,161,000 | 225,828,000 | 28.9 | |
| 1902 | 32,939,000 | 9,446,000 | 23,520,000 | 24,267,000 | 90,172,000 | 260,217,000 | 34.7 | |
| 1903 | 36,957,000 | 10,795,000 | 24,838,000 | 25,593,000 | 98,183,000 | 282,749,000 | 34.7 | 33.2 |
| 1904 | 36,475,000 | 10,842,000 | 24,406,000 | 24,556,000 | 96,273,000 | 278,660,000 | 34.5 | |
| 1905 | 38,434,000 | 11,895,000 | 25,553,000 | 28,378,000 | 104,260,000 | 315,063,000 | 33.1 | |
| 1906 | 41,480,000 | 12,093,000 | 27,732,000 | 34,098,000 | 115,403,000 | 342,875,000 | 33.7 | |
| 1907 | 51,317,000 | 13,986,000 | 32,142,000 | 38,471,000 | 135,916,000 | 394,759,000 | 34.4 | |
| 1908 | 47,660,000 | 12,315,000 | 26,271,000 | 30,871,000 | 117,117,000 | 332,574,000 | 35.2 | 34.1 |
| 1909 | 50,905,000 | 14,834,000 | 27,940,000 | 33,960,000 | 127,639,000 | 379,744,000 | 33.6 | |
| 1910 | 45,900,000 | 18,390,000 | 34,210,000 | 40,988,000 | 139,488,000 | 417,111,000 | 33.4 | |
| 1911 | 53,679,000 | 14,201,000 | 30,760,000 | 39,117,000 | 137,757,000 | 405,907,000 | 33.9 | |
| 1912 | 59,885,000 | 15,286,000 | 34,529,000 | 41,787,000 | 151,487,000 | 450,105,000 | 33.7 | |
| 1913 | 61,619,000 | 17,166,000 | 36,201,000 | 46,267,000 | 161,253,000 | 478,435,000 | 33.7 | 32.8 |
| 1914 | 57,589,000 | 16,641,000 | 18,843,000 | 39,098,000 | 132,171,000 | 422,704,000 | 31.3 | |
| 1915 | 58,830,000 | 17,006,000 | 22,435,000 | 40,974,000 | 139,245,000 | 442,624,000 | 31.5 | |
| 1916 | 66,195,000 | 20,094,000 | 34,728,000 | 43,188,000 | 164,205,000 | 502,520,000 | 32.7 | |
| 1917 | 86,199,000 | 26,539,000 | 40,749,000 | 47,816,000 | 201,303,000 | 551,791,000 | 36.5 | |
| 1918 | 89,291,000 | 30,679,000 | 45,813,000 | 50,558,000 | 216,341,000 | 579,386,000 | 37.3 | 35.7 |
| 1919 | 60,863,000 | 20,912,000 | 35,877,000 | 42,350,000 | 160,002,000 | 465,860,000 | 34.3 | |
| 1920 | 88,631,000 | 29,091,000 | 45,276,000 | 49,824,000 | 212,822,000 | 563,734,000 | 37.8 | |
| 1921 | 69,603,000 | 20,320,000 | 31,943,000 | 34,090,000 | 155,956,000 | 415,952,000 | 37.5 | |
| 1922 | 58,468,000 | 19,133,000 | 26,954,000 | 31,961,000 | 136,516,000 | 422,268,000 | 32.3 | |
| 1923 | 79,310,000 | 26,229,000 | 40,546,000 | 56,618,000 | 202,703,000 | 564,157,000 | 35.9 | |

* Covers Allegheny, Armstrong, Beaver, Butler, Greene, Lawrence, Mercer and Washington Counties.



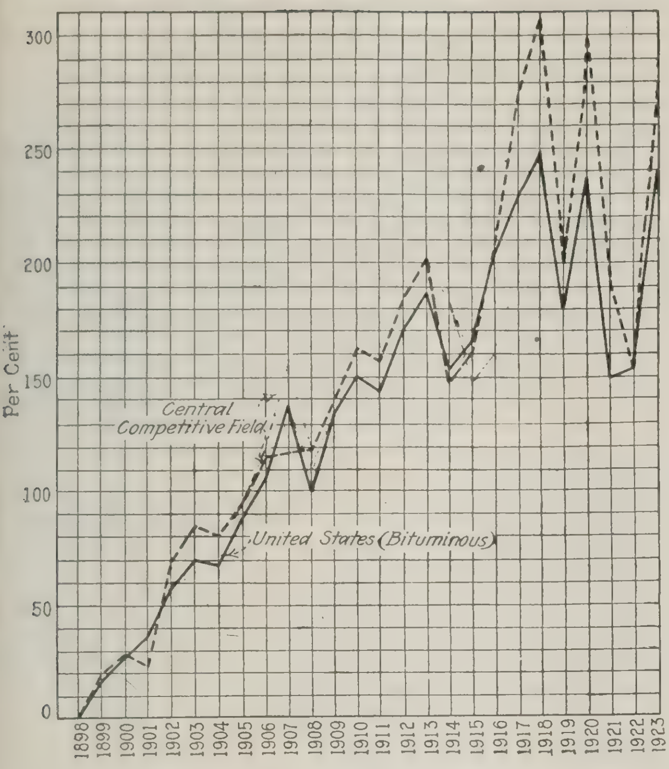


**Fig. 5—Has the Central Competitive Field Kept Step?**

The increase in production, on a percentage basis, since 1898 shows little variation when the growth of the Central Competitive Field is compared with the growth of the United States as a whole. As a matter of fact, the increase in production, taking 1898 output as 100 per cent, has been somewhat greater in the Central Competitive Field than in the United States.

union. The 1906-08 contract restored the rates in effect on March 31, 1906, and the upward movement was renewed. Compared with basic day rates for inside labor in effect in Illinois mines in 1899-1900, the rates continued under the Jacksonville agreement, and still in effect, represent increases of 414 and 394 per cent. In 1899 inside day labor received $1.75@$1.90; today the rates are $7.25 and $7.50.

The base (Danville district) pick-mining rate, to which practically all of the other mining rates are differentially adjusted, has risen from 40c. a ton under the 1898-99 agreement to $1.08—an increase of 270 per cent. The thin-vein Pittsburgh rate was 42.73c. per ton in 1898: at the present time it is $1.1164. These increases are shown graphically in Figs. 3 and 4. The mining rates in the other districts making up the Central Competitive Field show like trends. Due to the imposition of flat increases on the base rates, there have been some variations in percentage increases, but the general trends have been the same.

What effect, if any, has this union control with its advancing wage rates had upon production? A comparison of the production record of the Central Competitive Field as a unit with that of all the bituminous coal producing districts of the United States is not unfavorable to this union-dominated region. Despite the inroads made by other districts, the figures incorporated in Table II show that the Central Competitive Field has maintained its relative position with an almost insignificant fluctuation. On a percentage basis, taking 1898 output as the base, the line of increase closely parallels that of the country as a whole. As a matter of fact, Fig. 5 shows that, except during the first years of the century, the percentage gains in the Central Competitive Field have been slightly greater than those registered by all the bituminous mines of the United States.

But the picture changes when the Central Competitive Field is broken up into its component state units. The fluctuations become more violent. Illinois and Indiana reveal a much more rapid, and, on the whole, consistent, growth than do Ohio and western Pennsylvania. In these variations in relative growth, pictured graphically in Fig. 6, we glimpse the situation which has caused the rising tide of dissatisfaction with the policies of the United Mine Workers of America. The picture changes, too, if a comparison is made between average daily output in the Central Competitive Field today with corresponding periods two years ago.

Inasmuch as the general level of production for the country as a whole has been below that of 1923, this in itself would not be particularly conclusive. The rub

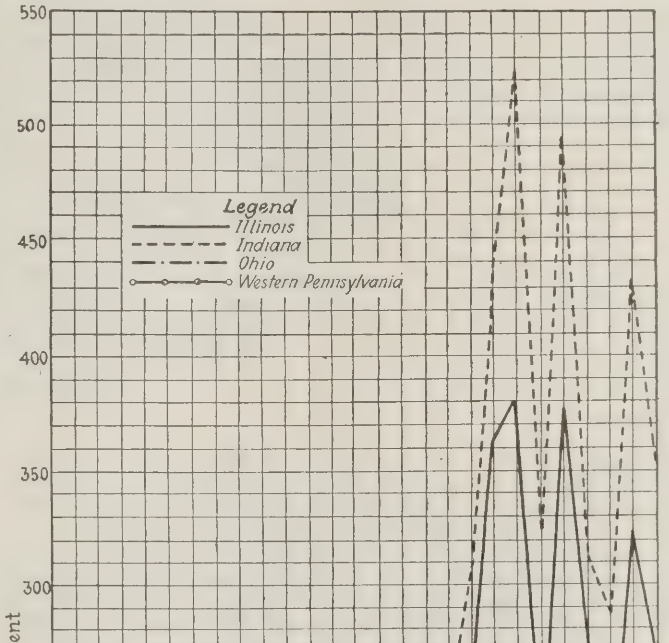


**Fig. 6—An Unevenly Distributed Increase**

The gains shown in Fig. 5 have not been evenly distributed among the component parts of the Central Competitive Field. On the percentage basis, Indiana has gone ahead faster than the other districts, and Illinois ranks second. Ohio and western Pennsylvania, more exposed to non-union competition, have lagged.

comes in the fact that the output in non-union West Virginia and eastern Kentucky has been exceeding the rate maintained by those unorganized fields in 1923, while the four states in the Central Competitive Field show a rate considerably under the 1923 indices for the corresponding weeks.

To say that labor alone is responsible for a retrograde movement in Ohio and western Pennsylvania would be stretching the truth. There are other competitive factors which enter into the situation, not only in Ohio and Pennsylvania, but also in Indiana and Illinois. There are the factors of quality, of preparation, of transportation, of merchandising acumen. In some cases freight rates are a big handicap; in others the rate structure is protecting the high-cost operating fields from more intensive competition.

The operators have not been idle: they have tried to lessen these handicaps. But labor still remains the biggest factor in mine costs and the United Mine Workers of America the stumbling block to a readjustment. So irritation, disgust, despair and, finally, desperation characterize the reactions of the producers in this great region to their labor problems.

## Georgia Has One Coal Mine

Although Georgia has only one coal mine in operation at the present time—that of the Durham Coal and Coke Co. on Lookout Mountain—there is enough coal in the state, according to a statement by Dr. S. W. McCallie, state geologist, to last the state 200 years at its present rate of consumption.

The coal deposits of Georgia, according to Dr. McCallie, are to be found in Sand, Lookout and Pigeon Mountains, and lie chiefly in the counties of Dade, Walton and Chattooga, where they form a part of the northern extension of the Coosa and Warrior fields of Alabama. The coal area of the state is approximately 170 square miles. This area is estimated to have had originally 933,000,000 tons of coal. About 12,000,000 tons have been mined, leaving still in the ground a total of 921,000,000 tons. The coal now being mined is semi-bituminous.

## Country Used 55,134,000 Lb. of Permissibles in 1924

Sales of permissible explosives in 1924 amounted to 55,134,151 lb., according to reports made by manufacturing companies to the Bureau of Mines, Department of Commerce. This total was about 9 per cent less than the total for 1923, the decrease being due to the decline in the production of coal during 1924. As compared with previous years, however, the sales in 1924 represented an increase of 21 per cent over 1922, 25 per cent over 1921, and 2 per cent over 1920, the record year prior to 1923.

The coal-producing states were the principal consumers of the permissibles sold in 1924. Pennsylvania used 50 per cent of the total quantity, West Virginia 17 per cent, Alabama 9 per cent, Illinois 7 per cent, and Kentucky 4 per cent. Each of these states used 1,000,000 or more lb. of permissibles and their aggregate consumption for the year was more than 47,000,000 lb.

Of the total quantity of permissible explosives sold during the year, coal mines used 94.6 per cent. The remainder was reported as follows: Metal and nonmetal mineral mines, 0.9 per cent; railway and other construction work, 0.5 per cent; and miscellaneous purposes, 4 per cent.

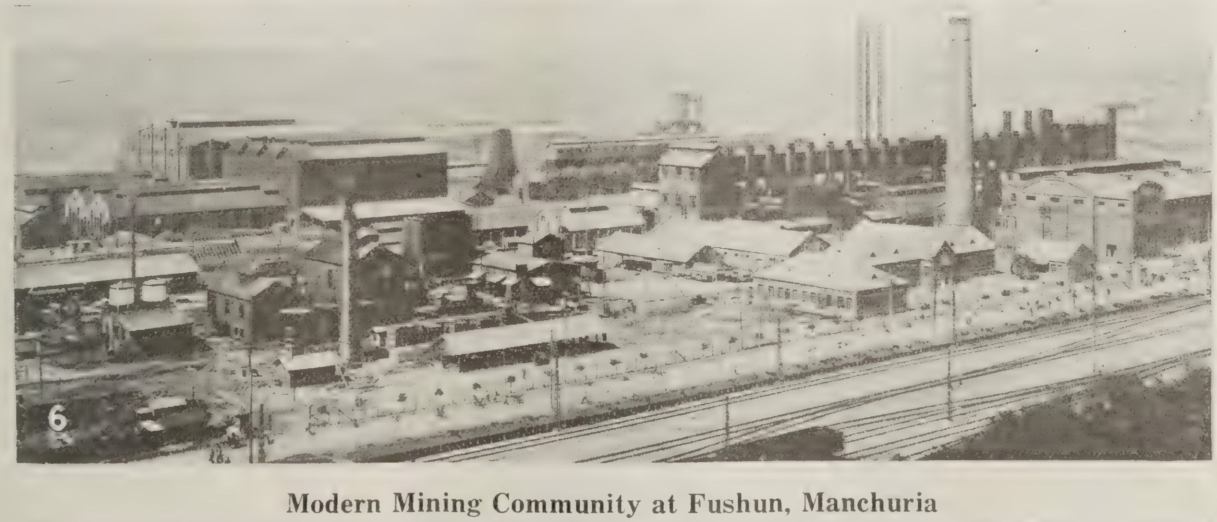
## New Detonator Is Devised

A superior detonator for high explosives has been devised by the Bureau of Mines. It has been found that silver azide retains its explosive properties regardless of the presence of moisture. This overcomes one of the objections of mercury fulminate, which loses its sensitiveness under certain conditions of use in some mines.

In connection with its efforts to find new uses for silver the Bureau investigated all of the unstable compounds of silver. While the superiority of silver azide has been demonstrated, none of the other compounds gave promising results although silver fulminate is a thoroughly efficient detonator and can be substituted for mercury in case of an emergency.

**Kentucky Mine**

Plant of the Rogers Bros. Coal Co., at Bevier, Ky. Note in the foreground the steam exhaust from a small direct-current plant, and just beyond it the transformer substation of the power company. The Rogers Bros. mine is one of a very few that has abandoned purchased power and reverted to the use of the old direct-current power plant.



### Modern Mining Community at Fushun, Manchuria

The coal mines at Fushun, Manchuria, were acquired in 1907 by the South Manchuria Ry., which has made Fushun one of the model colliery towns of the world. Up-to-date methods have been brought from the United States including the sand-flushing system. The views shown in the illustration are: 1—Auditorium for the entertainment of employees of the Fushun colliery; 2—Elementary school building; 3—Relief crew at the Fushun colliery; 4 and 5—Homes of employees and skilled workers at the Fushun mines; 6—Mund gas works connected with and forming a part of the Fushun colliery.

# News Of the Industry

## New Strike Move in West Virginia Launched with Parade and Speeches; 2 per Cent Respond, Say Operators

Fairmont, W. Va., Sept. 29.—Coal operators of northern West Virginia assert that the call to the non-union miners to strike Sept. 25 is a flat failure, and that all but three of the mines in the region were working with a full complement of miners early this week. A statement issued by the producers reports that less than 2 per cent of the total of 12,000 to 13,000 men that had been working removed their tools in compliance with the union's notice to quit.

Officials of the Consolidation Coal Co., the largest producer in the region, said that they had their usual force at work for a Monday following a pay-day, and that some of the mines had more men than usual.

Open-shop mines produced 1,444 cars of coal Saturday, the first day of the strike, or 36 cars less than the previous Saturday and 82 cars less than two weeks before, when a pay day was observed.

Non-union operations, with 200 mines working, loaded 1,483 cars of coal on Monday, or 116 less than on the previous Monday and 120 less than two weeks before.

### Union to Fight On

Van A. Bittner, chief international representative of the United Mine Workers, announced in a statement that "the response to the strike has exceeded our expectations. Several mines where we had no organization at all have been completely closed down." He added that the union would continue the fight and that he had "arranged to stay in West Virginia until the battle is over."

John L. Lewis, international president of the miners' union, prior to leaving Fairmont for Scranton, Pa., stated that the United Mine Workers would keep up the campaign "in northern West Virginia regardless of the length of time it takes to completely unionize the mines and compel the coal operators to abide by the terms of the Baltimore and New York agreements."

The miners allege that the Irona mine of J. H. Weaver & Co., near Kingwood; the Willard mine of the Fairmont & Baltimore Coal Co., the Despard mine of the Despard Fuel Co., in the Clarksburg field, and the Owings mine of the Consolidation Coal Co. were affected early this week. Between the miners' strike, a lull following pay day and the opening of the hunting season there were some defections, which probably will be made up later in the week.

When Lewis arrived in Fairmont to take part in the demonstration arranged by the union for Saturday he was greeted with a barrage of injunctions, but he told the 25,000 to 30,000 assembled miners and their families that the day would never come when the coal operators would be able to print enough injunctions to drive the miners' union out of West Virginia.

### Meeting Starts With Parade

The meeting began after a parade of 8,000 men, women and children held in connection with the issuance of the strike order. The other speakers were International Vice-President Philip Murray and Secretary - Treasurer Thomas Kennedy. Van A. Bittner was chairman.

In his remarks Mr. Lewis said that the United Mine Workers had just started to fight in northern West Virginia and asserted that few of the coal operators had made any money since the struggle began and intimated that they would not do even as well in the future.

"Led by the Pittsburgh Coal Co. and the Consolidation Coal Co., the two largest coal producing companies in the United States," said he, "many operators in western Pennsylvania, northern West Virginia and central Pennsylvania have repudiated the Jacksonville agreement and have struck down the wage structure of the industry.

### Lewis Attacks Operators

### *Murray Generalizes*

Philip Murray, international vice-president of the United Mine Workers, asserts that many independent coal companies operating under the Jacksonville agreement are making money. In a statement issued in Pittsburgh, Pa., the miners' official says there is no justification for the reduction in wages asked by the Pittsburgh Coal Co., but he failed to cite any companies that were actually making money operating under a genuine Jacksonville scale.

Murray pooh-poohed the "excuse" by the Pittsburgh Coal Co. that a wage cut would increase its business and give the employees more regular employment. "There are today 22,000 men at work in the mines of District No. 5, all of whom are enjoying the provisions of the Jacksonville agreement," he said.

Murray failed to state whether these men were working one day a week or six days.

"It is obvious that coal mining is an intermittent occupation and cannot provide steady employment to the miners," he said further.

There are many who will agree with him.

"In their mad efforts to escape their honest obligations to free American labor, the coal operators in these districts have not failed to utilize every instrument of oppression and repression. They have torn up their wage contracts; they have closed their mines for long periods in order to starve their employees into submission; they have evicted their employees from their homes; they have manned their properties with armed mine guards; searchlights, barbed wire fences, stockades and such paraphernalia of war; they have resorted to the use of unfriendly courts and have sought to bind the workers hand and foot by the issuance of court injunctions, stripping the worker of nearly every right guaranteed him under the Constitution; they have, in substance and effect, conducted a campaign of community terrorism in the isolated mining villages.

"This is a situation which should command the attention of the public and of the government. The stability of the entire bituminous industry is threatened by this reprehensible conspiracy and attack upon the very principle of collective bargaining in the coal industry. Some of the individual coal operators who have violated their agreement with the United Mine Workers are men of national prominence and are looked upon as being leaders in business, in finance and in statecraft. Their action bodes ill for the future.

"The mine workers have been taught to believe that a wage contract once entered into should be preserved with sanctity and honor and its mutual obligations should be fully liquidated. Are the mine workers of the nation now to be taught that a wage agreement is no longer binding, and that recognition of the principle of collective bargaining by the employees is merely a sham and hypocrisy? If this be true, then the nation's industry faces a future of chaos and confusion. If it be not true, then the organized mine workers have

# Operators Reiterate Their Stand; Miners Repudiate Arbitration In Hard-Coal Controversy

The Anthracite Operators' Conference, at a meeting at the Railroad Club, New York City, Sept. 24, reiterated its stand that the strike in the hard-coal region should be settled on a basis which will avoid future suspensions. The members voted to decline any settlement that does not provide for arbitration of all grievances and continuous operation of the mines pending the making of new wage agreements. "We want peace," asserted W. W. Inglis, chairman of the operators' section of the anthracite subscale committee, "not a truce."

The Conference formally adopted a resolution approving the work done by the subscale committee in its fruitless negotiations with the United Mine Workers at Atlantic City, N. J., before the strike. The meeting was attended by the full membership of the operators' subscale committee and many other hard coal producers. S. D. Warriner, president of the Lehigh Coal & Navigation Co. and chairman of the Conference, presided.

No sign of a break in the strike situation proper was visible as the suspension entered its second month. The position of both sides is unchanged. Reports from the region indicate that the financial status of the strikers is still comfortable. The only official word from the United Mine Workers was a telegram addressed to the New England Retail Coal Dealers' Association defending the union's refusal to submit the controversy to arbitration. The telegram was sent in answer to a speech of Walter Gordon Merritt, general counsel for the Anthracite Operators' Conference, in which Mr. Merritt told the New Englanders that responsibility for the tie-up rested with the union and urged arbitration.

On Sept. 28 the Scranton Chamber of Commerce, at its first fall meeting, laid plans to offer its services as an agency for ending the strike. Resolutions were adopted placing the chamber on record "in favor of the principles of mediation and arbitration." In order that the organization might be in a position to intervene if the outlook for such action appears propitious, Ralph E. Weeks, head of the International Correspondence School; Ralph A. Amerman, banker, and E. J. Lynett, newspaper owner, were appointed a committee "to co-operate in bringing about a renewal of negotiations between operators and mine workers, and it was further

"Resolved, That the committee be directed to use its efforts in bringing about the adoption of a new working agreement containing a clause providing that in the future when differences arise that cannot be adjusted in joint conference or through mediators these differences shall be submitted to impartial and competent arbitrators. In the interests of the anthracite producing communities and that portion of the public using anthracite coal we urge miners and operators to immediately resume negotiations looking forward to a new agreement."

It was intimated that there would be a further announcement of the committee's plans. Two of the members, Messrs. Weeks and Amerman, were prominent in the work of the Citizens' No-Strike Committee, which failed in its efforts to avert the strike. In view of the union's attitude toward arbitration, it is probable that the new committee will be unable to make any headway with Mr. Lewis and his associates unless the committee's platform be substantially modified.

## Latrobe Coke Plants Resume

Derry No. 1 and the Duquesne plant of the Latrobe-Connellsville Coal & Coke Co., at Bradenville, Pa., resumed operations last week.

Orders have been issued for the immediate firing of 320 ovens at the Carpentertown plant, near Mt. Pleasant, and it is said that the outlook is good for the firing of ovens at the Beatty plant of the same company within the next two weeks.

The Greensburg-Eastern Coal Co. has announced that within a week the mining of coal will be resumed. The Cambridge Coal Co. has announced an increase in wages.

## Britain's Coal Peace Short Lived; Volunteer Body Prepares for Strike

Predictions that the "settlement" of Great Britain's coal troubles arranged less than two months ago would be only temporary are coming true already. After meetings with Premier Baldwin on Sept. 23 and 24 the miners have arranged to hold a special conference on Oct. 9 to consider the situation and decided to boycott the recently appointed Coal Commission until a real settlement is reached.

The miners charge Premier Baldwin with breaking the pledge given by him to them and the trade union movement to the effect that there would be no reduction in wages or increase in working hours during the "coal truce" arranged last month, pending a final settlement of differences between the miners and owners.

They assert that the Premier is siding with the contention of the owners that they can cut wages. At Tuesday's meeting with the Premier the miners' representatives pointed out that certain mine owners were reducing wages by tampering with basic rates. After considering the matter over night, the Premier stated that as the 1924 agreement was to continue and since under that agreement the base rates were variable, they were variable also during the truce.

While there is no immediate danger of a crisis like that of a few weeks ago, the miners are in no mood for calm and dispassionate consideration of the ills of the industry.

A volunteer organization to be known as the "Organization for Maintenance of Supplies" has been set up in preparation for the general strike which many people think to be not far off. It is compiling a register of all willing to assist in maintaining vital services of the nation in the event of a crisis. The President is Lord Hardinge and among the members of the council are Admiral Jellicoe, Major Gen. Lord Scarborough, Lord Falkland, Lieut. Gen. Sir Francis Lloyd and Admiral Sir Alexander Duff. The organization is stated to be non-political and will enroll volunteers of both sexes as special constables, workers in maintaining public service and transport, drivers, messengers, cyclists and clerks.

Four categories of recruitments are proposed: First, for the protection of public services, and, if necessary, to act as special constables; second, operating the railways handling foodstuffs; third, to act as drivers of vans and lorries; fourth, messengers, in the event posts, telegraph and telephone communications are stopped.

## Alberta Strike "Settled"

"The coal strike at Drumheller, Alta., is now as good as settled," a special despatch to the *Edmonton Journal* from Drumheller says, "The miners recognize that the three Gouge mines will remain U. M. W. but they claim that the Mid-West mine has recognized the new union and hope other mines will do the same. It is expected that all the mines will be working this week."

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a right to expect a sufficient crystallization of outraged public sentiment to compel those coal interests who made the agreement to abide by its provisions.

"The federal government has an obligation in the premises. The Jacksonville agreement was negotiated and executed with the aid and co-operation of high government officials. By the same token the industry has a right to expect that the moral influence and power of those same government officials will be utilized to preserve the integrity of the agreement and to maintain in the public weal the tranquillity of the coal industry.

"There can be no misunderstanding or beclouding of the issues involved in this question. The mine workers simply ask that those coal operators who executed the three-year wage agreement with the United Mine Workers be compelled to live up to their contracts and not act the part of industrial knaves and poltroons who seek to render to their employees less than is their just due.

"It is the purpose of the organized mine workers to exercise their strength and influence to preserve the honor of their wage agreement and to demand that under its provisions fair treatment be accorded them."

# Coal Mine Accidents Kill 195 in August; Rate Below Last Year

Accidents at coal mines in the United States in August, 1925, caused the loss of 195 lives, according to the U. S. Bureau of Mines. As the amount of coal mined was 53,765.000 tons, the fatality rate for the month was 3.63 per million tons, compared with 3.45 for the preceding month and 4.07 for August last year, a reduction of 11 per cent.

Reports for August showed 46 fatalities at anthracite mines in Pennsylvania and 149 at bituminous coal mines in all states. As production of anthracite in August was 8,882,000 tons, the per-million-ton death rate was 5.18, as compared with 5.36 for August last year and with a ten-year average rate of 5.83 for August. Bituminous mines produced 44,883,000 tons of coal in August, thus indicating a fatality rate of 3.32 per million tons as compared with 3.82 last year and 3.90 average for August during the ten years 1915-24.

In the first eight months of 1925 there were 1,461 fatalities; in the corresponding period last year 1,661. The eight months' tonnage was 381.840.000 and 363,520,000, in the two years, respectively. These figures indicate a fatality rate of 3.83 per million tons for the present year and 4.57 for the first eight months of 1924, a reduction of 16 per cent. The eight months' fatality rate for anthracite mines alone was 6.11 per million tons, based on a production of 62,489,000 tons, as compared with 5.67 and an output of 59,247,000 tons during the first eight months of 1924, an increase in the death rate of 8 per cent. For bituminous mines alone the fatality rate for January to August was 3.38, based on a production of 319,351,000 tons, as compared with a rate of 4.35 and an output of 304,273,000 tons for the corresponding months last year.

A comparison of the per-million-ton rates from various causes for the first eight months of the two years follows:

| | Jan.-Aug. 1924 | Jan.-Aug. 1925 |
|---|---|---|
| All causes | 4.569 | 3.826 |
| Falls of roof and coal | 1.895 | 1.781 |
| Haulage | 0.622 | 0.618 |
| Gas or dust explosions | 1.265 | 0.670 |
| Explosives | 0.184 | 0.194 |
| Electricity | 0.140 | 0.115 |

## Miners Vote to Postpone Convention Till 1927

A referendum on the proposal to postpone the biennial convention of the United Mine Workers until January, 1927, has received almost unanimous approval.

It was announced at headquarters of the organization, in Indianapolis, Ind., Sept. 21, that the principal business of the convention would be the formulation of a new wage scale agreement to supplant the one entered into with the operators at Jacksonville, Fla., in 1924, and which expires in 1927.

The holding of a convention in 1926, the next regular year, is deemed unnecessary by union officials.

# Neekamp to Urge Canal From Kentucky to Lakes

C. J. Neekamp, of Ashland, secretary of the Northeast Kentucky Coal Association, has been appointed a member of the Kentucky commission to advance the projected construction of a canal from eastern Kentucky coal fields to the Great Lakes. Mr. Neekamp states that the commission is to meet at Toledo within the next thirty days. The proposed canal, if constructed, would connect the eastern Kentucky coal fields to Atlantic ports by way of the Great Lakes and the St. Lawrence River.

There has been spasmodic agitation for a good many years for a canal from the Ohio River to the Great Lakes, but it has not met with any success. In recent years canals have been proposed from Toledo to the Ohio River by way of the Scioto River at Portsmouth and by way of the Miami River near Cincinnati. A good deal of engineering work has been done on the various canal projects and much data has been compiled.

It is explained by Mr. Neekamp that the eastern Kentucky-Great Lakes canal is proposed to be part of the general Ohio-Lakes canalization plan.

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The Central Pennsylvania Coal Producers' Association informs Eugene C. Hultman, vice chairman of the New England Governors' Coal Committee, that the central Pennsylvania bituminous field can furnish to New England 1,000,000 tons of prepared sizes of low-volatile coal per month in the event of a prolonged anthracite strike.

## Coal-Mine Fatalities During August, 1925, by Causes and States

(Compiled by Bureau of Mines and Published by *Coal Age*)

| State | Underground | | | | | | | | | | | | Shaft | | | | | Surface | | | | | | | Total by States | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Falls of roof (coal, rock, etc.). | Falls of face or pillar coal. | Mine cars and locomotives. | Gas or dust explosions. | Explosives. | Suffocation from mine gases. | Electricity. | Animals. | Mining machines. | Mine fires (burned, suffocated, etc.). | Other causes. | Total. | Falling down shafts or slopes. | Objects falling down shafts or slopes. | Cage, skip or bucket. | Other causes. | Total. | Mine cars and mine locomotives. | Electricity. | Machinery. | Boiler explosions or bursting steam pipes | Railway cars and locomotives. | Other causes. | Total. | 1925 | 1924 |
| Alabama | 8 | | | 3 | 1 | | | | 1 | | | 13 | | | 1 | | 1 | 1 | | | | | | 1 | 15 | 9 |
| Alaska | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Arkansas | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 3 |
| Colorado | | | 2 | 1 | | | | | | | | 3 | 1 | | | | 1 | | | | | | | | 4 | 9 |
| Illinois | 5 | 1 | 5 | | | | | | | | | 11 | | | | | | | | | | | | | 11 | 13 |
| Indiana | 5 | | | | | | | | | | | 5 | | | | | | | | | | | | | 5 | 1 |
| Iowa | 1 | | 1 | | | | | | | | | 2 | | | | | | | | | | | | | 2 | 1 |
| Kansas | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 0 |
| Kentucky | 11 | | 1 | | | | 1 | | | | | 13 | | | | | | | | | | | | | 13 | 12 |
| Maryland | 1 | | | | | | | | | | 1 | 2 | | | | | | | | | | | | | 2 | 1 |
| Michigan | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 0 |
| Missouri | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Montana | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| New Mexico | 1 | 2 | | | | | | | | | | 3 | | | | | | | | | | | | | 3 | 1 |
| North Dakota | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Ohio | 8 | | 2 | | 1 | | | | | | | 11 | | | | | | | | | | | | | 11 | 8 |
| Oklahoma | | | | | | | | | | | | | | | | | | | | | | | 2 | 2 | 2 | 2 |
| Pennsylvania (bituminous) | 19 | 4 | 5 | 1 | | | | 1 | 1 | | | 31 | | | | | | | 1 | | | | | 1 | 32 | 24 |
| South Dakota | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Tennessee | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Texas | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Utah | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 |
| Virginia | 3 | | 1 | | | | | | | | | 4 | | | | | | | | | | | | | 4 | 6 |
| Washington | 1 | | | | | 1 | | | | | | 2 | | | | | | | | | | | | | 2 | 3 |
| West Virginia | 26 | 3 | 1 | | | | 1 | | 1 | | | 32 | 3 | 1 | 1 | 1 | 6 | 1 | | | | 1 | 1 | 3 | 41 | 38 |
| Wyoming | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 3 |
| Total (bituminous) | 91 | 10 | 18 | 5 | 2 | 1 | 2 | 1 | 3 | | 1 | 134 | 4 | 1 | 2 | 1 | 8 | 2 | 1 | | | 1 | 3 | 7 | 149 | 137 |
| Pennsylvania (anthracite) | 13 | | 3 | 13 | 7 | | | | | | 1 | 37 | | | | | | | | 1 | | | 8 | 9 | 46 | 37 |
| Total, August, 1925 | 104 | 10 | 21 | 18 | 9 | 1 | 2 | 1 | 3 | | 2 | 171 | 4 | 1 | 2 | 1 | 8 | 2 | 1 | 1 | | 1 | 11 | 16 | 195 | |
| Total, August 1924 | 76 | 9 | 31 | 9 | 13 | | 11 | | 6 | | 9 | 164 | | | | | | 2 | 2 | 1 | | 3 | 2 | 10 | | 174 |

## Strikers Encouraged By Public's Failure to Prepare for Long Strike

**By Paul Wooton**

Washington Correspondent of *Coal Age*

If the present strike should continue as long as did that of 1922 it would run into the dead of winter. If this should happen it would be the first time in the history of the industry that production of anthracite has been at a standstill during the cold months. The great strike of 1902 was settled on Oct. 25. The strike of 1922 ended Sept. 11. The lesser disturbances seldom have run beyond midsummer. Stoppage in winter means that no coal would be leaving the mines currently. There would be no mobile supply of anthracite to take care of emergency needs.

Knowing that production would be only 60 per cent of normal, it was relatively simple in 1922 to adopt a rule under which each customer received 60 per cent of his normal requirements and, knowing just how much he would receive and with some anthracite on which to build, the consumer easily could eke out his needs with substitutes.

A very different situation presents, however, when nothing is passing through the distribution machinery. The bituminous operators, even with the best of intentions, cannot match, on short notice, a system which the anthracite industry has been a generation in building up. They have neither the records nor the intimate familiarity with the habits of the domestic consumer in anthracite territory.

Anthracite consumers practically have wasted four precious weeks that should have been devoted to frenzied stocking of substitutes. New England is doing something in the way of planning, but little progress has been made in moving soft coal into consumers' bins.

The public in the anthracite-using area realizes that if the men go back by Nov. 1 no one will know there has been a strike. Even if the men stay out they know there would be no serious trouble until Christmas, and that seems a long way off. Observers in Washington believe that these consumers are underestimating the difficulties which they may be called upon to meet and are overconfident of their ability to meet them. They are going along blithely without any conception of the difficulties that would surround the obtaining of substitutes for the 1,000,000 tons of anthracite they burn each week in cold weather.

These consumers are in a position to exert a potent influence on the duration of the strike. Heavy buying of substitutes in September would have put a different complexion on the situation even now. Since the best month for providing this reserve largely has been frittered away, it has had the effect of encouraging the mine workers. They believe their prospects are brightening. They have the savings and other resources necessary to stay out as long as they did in 1922.

Some think the New England governors would be justified in becoming somewhat jingoistic. Were they to familiarize themselves with some of the horrible details of what has happened in the insufficiently fueled cities of Russia, they could paint pictures calculated to arouse the people to a point where they would act. While there is no possibility in this country of freezing people en masse, actual distress has to be avoided by some form of political pressure which makes for unstable settlement and has all the debilitating results which follow too much paternalism.

**William F. May**

Mr. May is supervising engineer of the New York office of the Anthracite Coal Service, the bureau established by the hard-coal operators to hold the front line trenches against the forces of fuel oil and bituminous coal. The Anthracite Coal Service is busy analyzing the fuel problems of large industrial consumers and also co-operates with the retail coal merchants in keeping the wagon steam trade sold on anthracite. Mr. May brings to his task a wide practical experience in land and marine engineering. He can meet the fuel-oil engineer on his own ground because Mr. May himself was once a fuel-oil addict before the Anthracite Coal Service plucked him from the burning.

### *Picnic Spirit Still Prevails*

Traveling in his sedan at a moderate speed through a town in the upper section of the anthracite field, where the miners are on strike, a man well acquainted in the region was handed a "pink" slip to appear in court to answer a charge of speeding. The officer who handed it to him is a striking miner serving as a police deputy.

Before the date set to answer the summons the alleged speeder decided to talk the matter over with a coal company official in charge of a mine in this little town. Just as soon as the subject was mentioned the coal company man said he would fix up the matter so that payment of a fine would not be necessary. In explaining the reason for the unprovoked charge, he said, "You see, the boys [meaning striking miners] want to have a little clambake next week and are therefore raising the necessary funds by pinching everybody going through the town in a closed car."

## Handle Coal Ten Times In 15 Miles

Cars of coal shipped from the Shiloh mine, near Belleville, Ill., to East St. Louis, Ill., but fifteen miles distant, are handled no less than ten times between the mines and the National Stock Yards, East St. Louis, K. B. Hannigan, assistant traffic manager for the Southern Ry., testified before the Illinois Commerce Commission in East St. Louis, Ill., Sept. 18. The commission is taking testimony under an application of the Perry Coal Co. for a reduction of freight rates on coal shipped within a radius of twenty miles of East St. Louis.

Hannigan stated that the rate to East St. Louis is 91c. and to St. Louis $1.16 and that a rate of 44c. between East St. Louis and St. Louis is never used.

The hearing has lasted for several days. The railroads have introduced testimony of city officials and miners from towns outside the 20-mile zone to show that any cut in the present rate would serve to break up existing groups and ruin business for many.

Those who testified for the railroads were William E. Church, Mayor of Lenzburg, Ill.; E. T. Hoffman, Mayor of Beckemeyer, Ill.; A. J. Hummert, superintendent of the Breese-Trenton mine; H. G. Koch, grain dealer, of Breese; H. C. Hall, merchant, Pocahontas, Ill., and a member of the Bond County Board of Supervisors.

There are two other cases pending before the commission. Mines outside the 20-mile zone seek to benefit from any cut in freight rates allowed the close-in mines while other coal companies beyond a zone of 60 miles from East St. Louis are asking a reduction to conform to any decreases given the first two zones.

## Kentucky Still Fights Against Raise in Differentials

J. Van Norman, attorney for the West Kentucky Coal Bureau, Louisville, appeared before the Interstate Commerce Commission, in Washington, Sept. 22, to protest against a proposal of the Alabama Coal Operators Association to increase to 50c. a ton from 25c. the present differential in the freight rate from west Kentucky over Alabama on coal moving to the Mississippi Valley. Kentucky is now at a disadvantage in handling the Mississippi Valley business and some convincing arguments were produced. The Louisville & Nashville R.R. and Illinois Central R.R. backed the Kentucky interests.

Kentucky rates have been a bone of contention of late, due to non-union production costs, etc. Just recently the famous Lake Cargo case was settled in favor of the east Kentucky operators, but Governor Pinchot, of Pennsylvania, is trying to have it reopened. A third complaint is from Virginia operators, who want the differential increased from 20c. to 50c. a ton on Kentucky coal over Virginia. A fourth case is that of the southern Illinois operators, seeking an increase from 25 to 50c. a ton in the differential on Kentucky coal moving to Chicago and the Northwest.

## Seek Solutions for Hazards Of the Underground

Discussion, with printed papers presented but not read, formed the basis for the meetings of the Mining Section of the National Safety Council at Cleveland, Sept. 29-Oct. 1. The papers had been distributed before the meeting, and, as the members had read them, all that was needed was a brief presentation, after which the members discussed them at length.

E. A. Holbrook, dean of the School of Mines and Metallurgy, Pennsylvania State College, outlined the hazard from falls of roof and coal and the means of approaching the problem, having reference to the engineering problems, those of organization and the personal equation. Mr. Holbrook believed that where more men were placed in charge of safety more economies were effected. Men too often were not instructed as to the manner in which danger might be avoided. Some even did not know how to sound the roof.

R. V. Ageton, safety engineer of the Tri-State Zinc and Lead Ore Producers Association, in his address declared that the attempt to promote safety by fear made men adventurous and anxious to prove they could cheat death by their agility and intelligence. He declared that goggles had been introduced into a mine by giving them to two men, letting the rest clamor for them.

### Employs Psychology

Had they been forced on the miners or even urged on them with precepts and bulletins they would have reacted unfavorably to them and refused to wear them, as they had in other mines. Later men from other plants were found to be "stealing" the goggles, believing that it was unsafe to work without them. To Mr. Ageton it seemed that it was never well to impose a lot of commandments on men. They resented being constantly admonished even when it was done for their good.

The experience of Utah with safety regulations of a drastic kind was recited by Daniel Harrington, consulting engineering of Salt Lake City, Utah. He declared that the cost entailed by some of the regulations was not as great as the savings they effected. Others cost but little, and on the whole only about 10 per cent of the operators and 10 per cent of the men would now return to the old ways of operating. It is fair to say that many of the new methods are not new to some of the operators, and this Mr. Harrington made clear.

K. T. Sparks, safety engineer, Central Mine Rescue Station, Wallace, Idaho, spoke on institutions for centralizing mine resue work, and William Conibear, safety engineer, Cleveland Cliffs Iron Co., Ishpeming, Mich., described the safety practices of his company.

From A. W. Dickinson, safety engineer, the Union Pacific Coal Co., Rock Springs, Wyo., the members learned of the advanced methods of ventilation, mine inspection and rescue work introduced by his company, which has a special ventilation engineer in charge of that feature of operation and has inspections made by committees at each mine.

F. C. Gregory, resident engineer of the U. S. Bureau of Mines, Duluth, Minn., questioned whether the best results could be obtained in the depressing mental atmosphere of a mine rescue training station, however equipped. He believed in dramatization. Though he didn't bring out the resemblance he used the word "maneuvers," and he evidently believed that the men and officials of a mine should be taught in the same way that is used to instruct the rank and file and the officers of an army in the business of war.

The National Safety Council had a number of other interesting meetings including an executives' session, a health session and a general session on public safety and education. There were also an A B C session for safety men and meetings of the American Society of Safety Engineers.

## *Business Best Able to Regulate Itself*

Governmental regulation of business, while perhaps necessary for a small section of the business world, can never do as well as business can do for itself, is the conclusion of the National Industrial Conference Board in a report on the "Regulation of Competitive Practices." The "real basis for hope of the preservation of the competitive system of business enterprise lies in its own power of self-regulation," the report says.

While the Federal Trade Commission has been of value in relieving the congestion of the courts and its activities are effective in many cases of unfair competition where appeal to the courts is impractical, in the view of the Conference Board, much is also being accomplished in a positive way by the growing activity of voluntary business associations in purging industry and trade of undesirable tactics. While government regulation is useful and effective in a negative way, says the board's report, the initiative of trade bodies in ridding commerce and industry of unfair practices is more significant of the "transformation now going on from cut-throat warfare for profits toward a more chivalrous competition."

## Repeal of Hoch-Smith Resolution Sought by Indiana Interests

A movement to repeal the Hock-Smith resolution adopted at the last session of Congress, which ordered the Interstate Commerce Commission to investigate the entire freight-rate structure in the United States, was launched recently at a meeting of the traffic and freight committee of the Indiana State Chamber of Commerce. Twenty-eight traffic managers of industries over the state and secretaries of Chambers of Commerce in a number of Indiana cities, attended the meeting and the committee expressed its position as opposing all general increases in freight rates as proposed by the carriers.

## Herrin Blast Kills Three; Massacre Suspects Dead

Three coal miners were killed and a fourth probably fatally burned in a gas explosion Sept. 26 in Mine 7 of the Consolidated Coal Co., near Herrin, Ill.

The bodies of the dead miners, James Galligan, a cousin of Sheriff George Galligan; William Druzinski and John Fulkins, were recovered after they had been entombed several hours. Pete Serena was rescued, though he was so severely injured that he may not recover.

The explosion resulted from accidentally touching off a gas pocket. The mine normally employs 500 men, but only a few were at work when the explosion occurred. All except three reached the surface.

Galligan was indicted for participation in the Herrin massacre of 1922, but never was tried.

Otis Clark, who also was among those involved in the 1922 massacre, was found shot to death in front of his home, near Herrin, Sept. 27.

Clark was tried twice for the mine murders and twice acquitted, despite the state's evidence that he was the man who took control of the mob after it left the mine, led Superintendent McDowell down a side road and fired the first shot that killed the non-union workers.

Clark was the first man indicted for the massacre and was arrested as he attempted to flee from the county.

Since the trial Clark had been operating a soft-drink establishment. When his body was found Sunday morning a revolver was clutched in one hand.

## Plan to Supply Coal Needs Of New England

Ways to expedite the movement of an adequate supply of bituminous coal to New England were discussed at a conference at the State House, Boston, Mass., on Sept. 26. Those participating were John Hays Hammond, chairman of the New England Governors' Coal Committee; Eugene C. Hultman, Massachusetts Emergency Fuel Administrator; C. B. Huntress, of the National Coal Association, and Harry L. Gandy, executive secretary of the association.

Mr. Gandy gave assurances of willingness and ability of bituminous operators to meet the fuel requirements of the six New England states, but stated that as a practical means of handling the situation a survey of definite needs should be made by each state. Mr. Gandy pointed out that surveys which show need only in tonnage requirements for a state do not give sufficient information. He suggested that state committees make canvasses of dealers and other large purchasers for definite information as to kind, quality and quantity of bituminous coal desired, which would furnish operators with information needed, whereas today operators are in the dark as to coal requirements and prospective purchasers do not know where to get the kind of coal they require.

# Viewpoints of Our Readers

## Is This the Remedy for Low Coal Prices?

Do you suppose anybody ever went down cellar to stoke the furnace, and said to himself: "It's a crime that coal is so cheap"? Do you suppose anybody ever drove in at a service station for gas and said as he counted out his dimes and quarters: "It is at least a misdemeanor to pay so little for gas"? I know a man who has done both.

The price of coal, like the price of oil and natural gas, has always been too low—too low as a resource, if not in the cellar. Coal has been so cheap that it has been profitable to waste it in many ways, particularly by leaving nearly one ton in the ground for every ton brought to the surface, and by burning it in inefficient boilers and furnaces, which obtain only a small fraction of the energy in the coal.

Now there are many good souls who trust in God to see that the human race will never lack the heat and power that is necessary to civilized life; and this is all very beautiful, but we ought not to overload anyone, even God, with responsibilities. As George Otis Smith once said, the motto on our coins should not be made our national policy in dealing with our natural resources. As far as we can see ahead, civilized life will always depend upon coal. The demands of industry are constantly growing; the American coal pile is larger each year; and it is only reasonable that we should ponder a little as to whether later generations will not need the coal that we are wasting.

Cheapness is always an invitation to waste—cheapness of anything. When our forests were worth little or nothing, we cut them wastefully or set a torch to them. When oil was selling for 10c. a barrel in the San Joaquin Valley, the operators let thousands of barrels run to waste down the ravines. Even at the present time we probably use twice as much gasoline and lubricating oil in our automobiles as would be necessary if these products were expensive enough to be worth saving. When natural gas was a mere nuisance in the oil fields, it was, of course, wasted outright or sold to carbon plants—which was about the same thing. Whatever is cheap is wasted; and of course coal in the ground, before any labor has been put on it, is very cheap. It would be hard to estimate its value, but, except in the case of anthracite or the higher grades of coking coal, it would not be worth more than a few cents a ton. And so it is ruthlessly wasted.

No censure is due the individual who wastes cheap coal. No man could handle it economically, at a profit. No operator could dig all the coal in his lease regardless of quality or thickness of veins, and stay in business. The settlers who burned the woods; the oil men who piped ten-cent oil off to a safe distance and burned it; the coal operators who left 40 per cent of the coal in the ground, were doing about the best they could. Their product was not worth saving carefully.

### HIGH PRICES BRING CONSERVATION

There is only one way to encourage economy in the use of coal—or any other resource—and that is to raise the price of it. Or you can turn this around and say that it is impossible to raise prices without encouraging economy. It is impossible to raise the price of anything without reducing the quantity consumed. That is why I never could see the point to government efforts to keep coal prices down, while leading government officials were preaching the gospel of conservation. Let me repeat: There is no conservation without high prices; and there can be no high prices without conservation.

If coal prices were raised considerably—let us say doubled—coal would be economized in many ways. Seams that were not worth mining before could be mined profitably. Locomotives would be built which would get perhaps 100 per cent more energy from a given quantity of coal; and furnaces would be greatly improved. Hydro-electric power, or "white coal" would be developed to take the place of some of the coal power, and windmills would be built to utilize wind power. Houses would be made warmer, so they would not require so much heat. Wood, millions of cords of it, would be burned in stoves that now burn coal; and of course the supply of wood can be renewed for a million years.

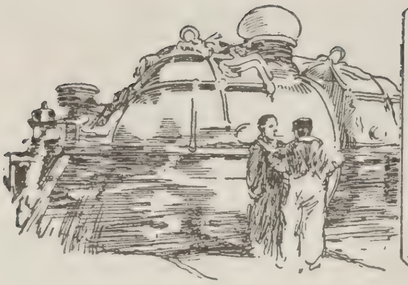
Suppose we admit the need for conservation, how can we make coal expensive enough to encourage its conservation? The most obvious means would be a change in our taxation system, in two directions: In the direction of a lower tax, or no tax at all, on coal deposits; and in the direction of a heavier tax on coal production. A tax on coal resources, or deposits, or lands, or whatever they may be called, is an encouragement to exploitation leading to low prices of coal, and, therefore, an encouragement to waste. On the other hand a tax on coal production would discourage production, encourage higher prices of coal, and, therefore, encourage conservation. There seems to be no good reason why any tax should be levied.

This idea is not radical or untried. It has long been recognized by taxation experts that the tax on standing timber should be light, while the main burden of taxation should be on the lumber cut. Pennsylvania has her tax on anthracite exploitation; several states have "severance taxes," on oil production; and at least one state has such a tax on coal production. In foreign countries, mineral deposits are usually owned by the government, but, of course, this means that the resource itself is not taxed, at any rate.

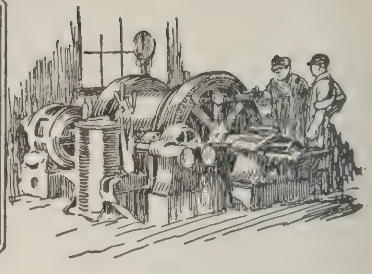
### PAY TAX OUT OF PROFITS

Such a scheme of taxation has many advantages. In the first place, it would levy the tax at the time when the tax payer was in a position to pay it easily. A coal company gets no revenues from coal deposits until they are put on the market—and that is the logical time to assess the tax. In the second place, such a scheme would fit the tax to the income more exactly than any tax on deposits ever could, since it would be paid at the time the income accrues. In the third place it would make coal mining a somewhat less speculative business, since the operator would not be subject to taxation far in advance of the receipts of a commercial income; and finally, and most important, it would have a tendency to conserve our coal deposits. Some will think this unnecessary, but the day when our coal is gone will probably be a cold day for the human race.

JOHN ISE,
Professor of Economics.
University of Kansas.



# Practical Pointers For Electrical And Mechanical Men



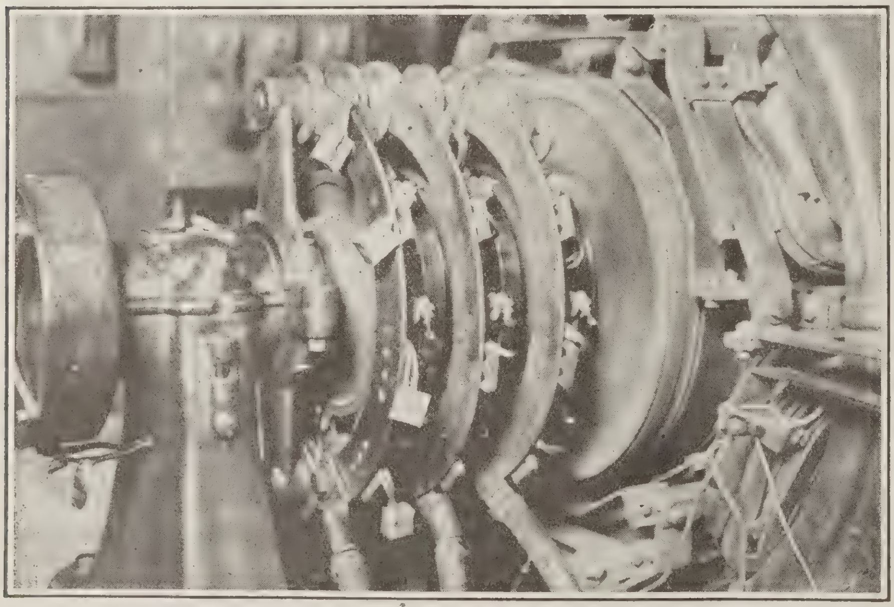
## Converter Operates Satisfactorily From Two Transformers

Doing the right thing in an emergency often prevents a shutdown. Emergencies, however, do not often arise; therefore a man in charge of equipment may not have had previous experience with a certain emergency when it appears. For that reason it pays the electrical man to gather information on the best methods for combating various out-of-the-ordinary failures of electrical equipment that might occur.

There have been many instances of unnecessary shutdowns of mines because of troubles with synchronous-converter substations. The type of converter equipment most commonly used is the six-phase, diametrically-connected machine in combination with three single-phase transformers. Some of the unnecessary shutdowns which have occurred could have been avoided had the electrician known that such a converter will operate satisfactorily with but two transformers in circuit, provided the average load is not over 57.7 per cent of full load rating of the machine.

Reuben Lee, chief electrician, of Stanaford, W. Va., describes the case of a 300-kw. converter of the Elkhorn Piney Coal Mining Co. being operated for several days with all of the brushes removed from one collector ring. This ring developed a flat spot of such degree that it could not be remedied by ordinary stoning. During the middle of the week the sparking got so bad that a shutdown of the converter and therefore of the mine seemed imperative, but as the result of a "happy thought" the brushes were raised from the damaged ring and the converter continued in operation until Sunday, when the flat ring was trued and ground to first-class condition.

Raising all of the brushes from one ring is equivalent to disconnecting one transformer entirely; therefore, if a transformer fails it can be cut out and the converter operated on the remaining two, provided the average load is not over 57.7 per cent of full-load rating. Mr. Lee stated that he found that the converter would not always start from a standstill when being operated from two transformers unless the armature was turned by hand to a certain fixed position.



**Operating with All Brushes Raised from One Ring**

During one week a ring of this six-phase converter developed a flat spot which caused severe sparking. A shut-down was avoided by removing the brushes from the ring. This was equivalent to cutting out one transformer. The affected ring was repaired the following Sunday.

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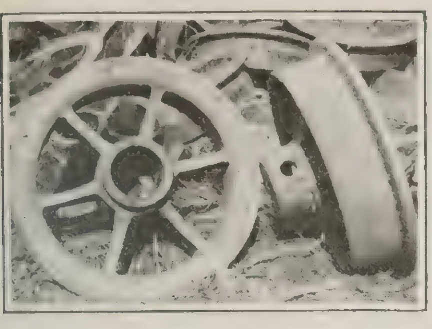
### Small Mine Jobs for a Little Foundry

An interesting phase of car-wheel repair work is shown in the accompanying illustration. It involves an application of foundry work which is unusual. The car wheel we use has a pallet in the hub which serves as an abutment for the cotter key in the end of the axle. This pallet is cast in when the wheel is made and occasionally breaks out, thus leaving the wheel free to run off the axle, which it promptly does.

Until we developed our method of repair we sent the wheels back to the makers, who furnished new wheels for those that had failed. The cost of freight both ways made this an expensive arrangement so we made some experiments in repairing them. After a few failures we succeeded in getting a satisfactory method.

Several ⅝-in. holes are drilled in the wheel hub opposite the location of the broken pallet. The wheel is then placed in the sand in the foundry with the open end of the hub up. The bottom of the hub is filled with molding sand up to the level of the outside face of the pallet and then a split core is inserted in the wheel. This core makes the mold for the pallet and locates it opposite the holes which were drilled in the hub, the holes making an anchor for the new pallet. A mixture of hard bronze, made from our mine shop scraps, is then poured into the space between the core and the bore of the wheel. When cold the sand is knocked out and the wheel is ready for service.



**Salvaged Wheels**

It is a simple job to repair these wheels when they break at the hubs. The cost of repair at the mine is lower than the freight charges to and from the factory.

Our foundry has eliminated another source of expense and trouble. Mine repairmen do not always watch the journal brasses in their locomotives as closely as they might, with the result that they sometimes wear out, letting the journal run on the cast box. Of course this injures the journal, frequently cutting into the axle to such an extent that a new axle has to be installed. We have succeeded in eliminating a lot of this trouble by making the journal boxes at our foundry, casting them from scrap bronze. This metal has proved to be amply strong for the purpose and does not cut the axle if the brass is allowed to wear out. Incidentally, the cost of these boxes is much less than the factory cost.

R. R. Schellenger,
Electrical Engineer.
Elkhorn Coal Corporation,
Wayland, Ky.

## Lights and Power Supplied By Battery

The big game in the coal industry today is to operate efficiently whenever the mines have an order to fill. There is, however, another side to the problem and it presents itself when the mine is shut down. The main thought then should be: operate efficiently all the time, for a mine must "operate" even though idle. Water must be pumped, props must be set too and repairs must be made to keep the equipment in working condition or better its efficiency when a coal order is to be filled.

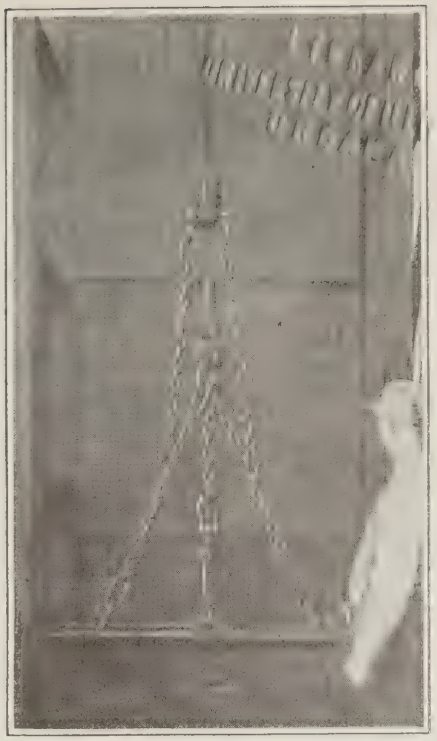
The accompanying illustration shows how the Madison Coal Corporation at Glen Carbon, Ill., operated efficiently last summer when some of its mines were idle. A storage battery taken from a mine locomotive is used to drive the machinery in the electric repair shop. By this arrangement the power plant at this mine did not have to be kept in continuous operation to generate power for the repair shops or lights used at night. Only when the storage battery became nearly discharged was the power plant put in service. The labor savings made at the power plant and the fact that the storage battery was kept in better condition by working it, helped materially in lowering the shutdown expenses.

**Storage Battery Supplies Lights and Power During Idle Period**

Because overhead charges during periods when mines are shut down eat up the small profits made on few orders every reasonable means should be employed to reduce costs when the mine is idle. Here is a storage battery from a locomotive, which permits the boiler plant to be shut down.

## Special Clamp on Cable Makes Hoisting Safer

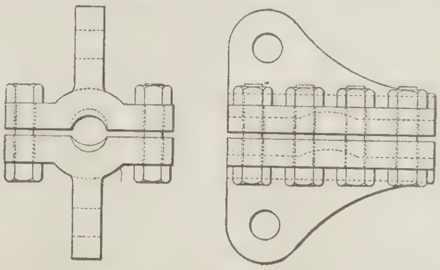
A marked characteristic of most of the equipment installed at the Pennsylvania Coal Co.'s mines is the extra safety features embodied. The accompanying illustration shows how the hoisting cable at one of the mines is attached to the shaft cage.



**Extra Clamp Holds Cable**

The upper of the two clamps will come into use should the regular attachments break.

It will be noticed that in addition to the usual attachments used for this purpose an extra clamp is fastened farther up on the cable. In the picture a loose chain extends on each side of the clamp to separate attachments on the top of the cage.



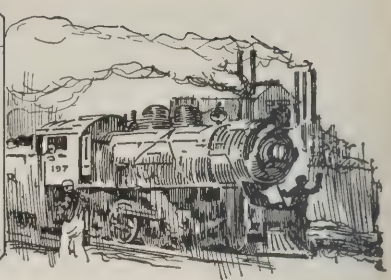
**Design of Special Clamp**

This clamp is designed to hold the cage from breaking away if an accident occurs. The cable is held more securely by means of a kink or bend put in it by the clamp.

In ordinary service the cage is suspended on the short pieces of chain secured by means of a clevis to the end of the hoisting cable. Should the clevis or attachments connected to the end of the rope break, the auxiliary clamp together with its chain come into service, thus serious accidents are made remote.

The design of the clamp is such that it grips the cable and also provides lugs to which the chains can be fastened. The accompanying sketch shows the important features of the clamps used with a 1½-in. hoisting cable.

# Production And the Market



## Reaction Continues in Bituminous Coal Market; All Sides Sit Tight on Hard Coal

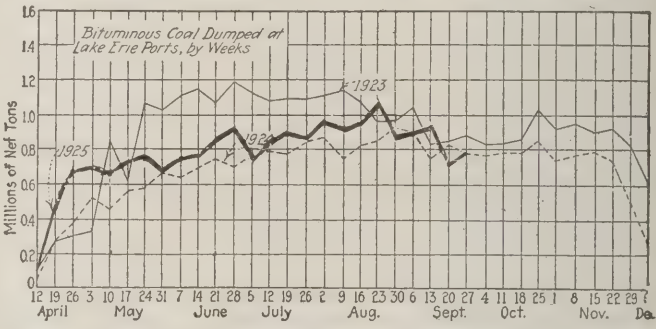
The reaction which set in a few weeks ago in the soft-coal market showed no sign of abatement last week; if anything, it was somewhat more marked. The flurry of buying that set in when the anthracite suspension began, which was expected to last at least as long as the hard-coal miners remained out, has fallen far short of expectations; as a matter of fact thus far the cessation of operations at the anthracite mines has had scarcely any appreciable effect on the bituminous coal trade.

The easing tendency has been quite general, demand having tapered off, accompanied by a shaving of prices, in practically all the principal markets. The sag continues to be most striking in the case of smokeless coal, though this is no more than natural considering the sudden and striking increase in production and prices a few weeks previous. Movement has slackened in Kentucky also, with a resultant paring down of quotations, save for western Kentucky screenings, which are much stiffer and not offered freely, producers expecting better prices.

Aside from belated shipments to the lakes, which continue in good volume, and railroad coal, orders are slow in the Middle West. Producers are having trouble in moving screenings and are catching up on lump orders. Many Illinois mines are getting shorter working time and conditions in Indiana are none too good. Production is gradually increasing in Ohio, though business reflects no striking change. Trade is perking up at the Head of the Lakes, in Kansas, Utah and Colorado, with little change in Arkansas and Oklahoma. The tendency to moderate is in evidence in New England, New York and Atlanta, while Philadelphia and Baltimore are maintaining slight gains.

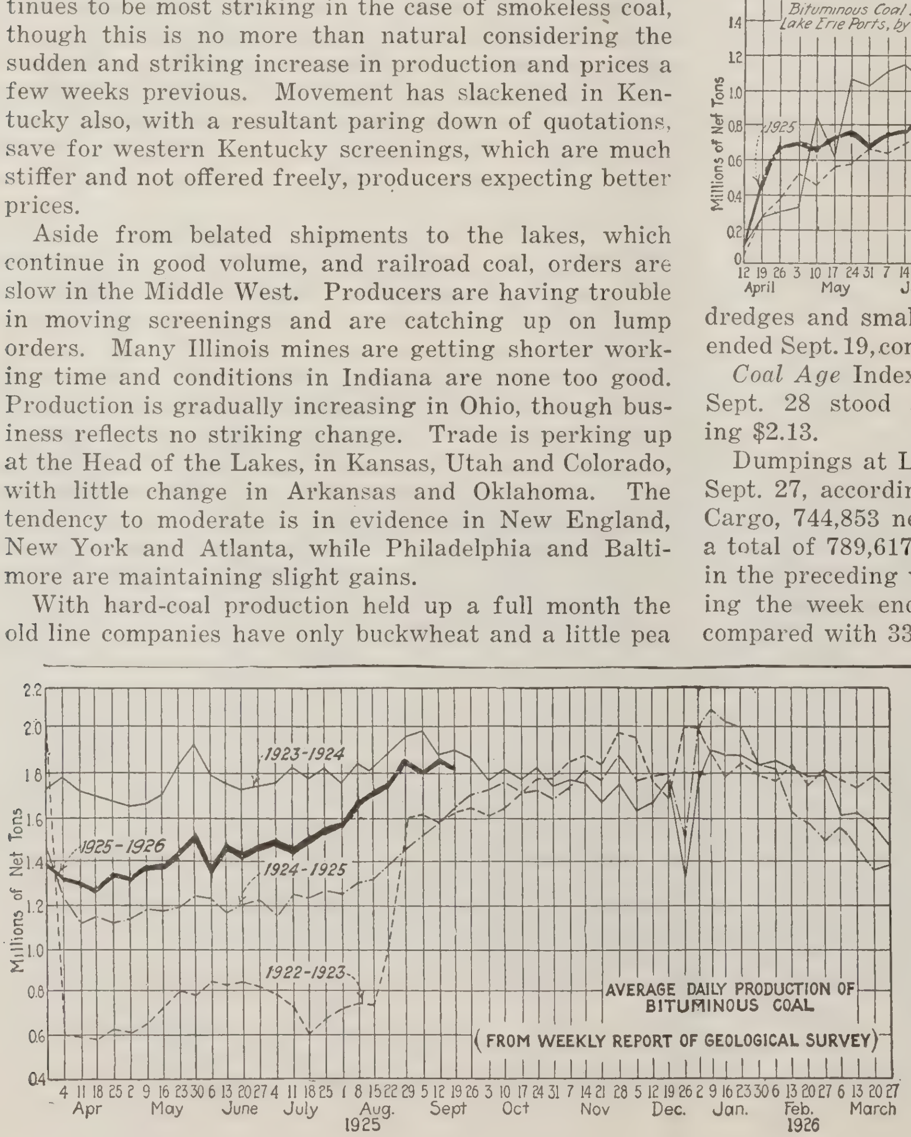
With hard-coal production held up a full month the old line companies have only buckwheat and a little pea to offer. In the wholesale trade only a few cargoes of independent coal are available, and these are being held for $15@$16 alongside for chestnut and $17@$18 for egg and stove. Most dealers are reluctant to pay such prices, however. Retailers are still well stocked with chestnut, pea and steam sizes, but stove and egg are getting scarcer.

Bituminous coal production during the week ended Sept. 19 is estimated by the Geological Survey at 10,867,000 net tons, compared with 9,983,000 tons in the holiday week, preceding, as shown by revised figures. Nine thousand tons of hard coal, presumably from dredges and small washeries, was shipped in the week ended Sept. 19, compared with 5,000 tons the week before.



*Coal Age* Index of spot prices of bituminous coal on Sept. 28 stood at 176, the corresponding price being $2.13.

Dumpings at Lake Erie ports during the week ended Sept. 27, according to the Ore & Coal Exchange, were: Cargo, 744,853 net tons; steamship fuel, 44,764 tons—a total of 789,617 net tons, compared with 754,122 tons in the preceding week. Hampton Roads dumpings during the week ended Sept. 24 totaled 427,363 net tons, compared with 332,097 tons in the previous week.



### Estimates of Production

(Net Tons)

| BITUMINOUS | 1924 | 1925 |
|---|---|---|
| Sept. 5 (*a*) | 8,208,000 | 10,827,000 |
| Sept. 12 (*a*) | 9,835,000 | 9,983,000 |
| Sept. 19 (*b*) | 10,156,000 | 10,867,000 |
| Daily average | 1,693,000 | 1,811,000 |
| Cal. yr. to date (*c*) | 328,569,000 | 349,100,000 |
| Daily av. to date | 1,486,000 | 1,575,000 |
| **ANTHRACITE** | | |
| Sept. 5 | 1,451,000 | 432,000 |
| Sept. 12 | 1,820,000 | 5,000 |
| Sept. 19 | 1,851,000 | 9,000 |
| Cal. yr. to date (*c*) | 65,429,000 | 61,653,000 |
| **COKE** | | |
| Sept. 12 (*a*) | 111,000 | 167,000 |
| Sept. 19 (*b*) | 122,000 | 172,000 |
| Cal. yr. to date (*c*) | 7,248,000 | 6,915,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Orders Slow in Middle West

During the past week in the Western markets orders have come in slowly, and the surplus accumulated in the past two weeks will be cleared up soon. From all appearances lump coal will be offered freely again within the next few days; while large lump sizes are still in fair demand, the operators have plenty of the smaller prepared sizes to offer. Operators still have considerable trouble in moving screenings because large buyers hold back. Though conditions in the Illinois fields have been fairly good for some time, the situation in the Indiana fields is rather poor. A large number of mines are still closed on account of no business in sight, but what hurt most right now are the strip operations where coal can be produced at such ridiculously low prices that the operator with union wages cannot compete.

West Virginia coal has been freely offered to the Chicago trade for what it would bring. On Pocahontas, which ten days or two weeks ago brought \$5@\$5.25 on some orders, the market has dropped to such an extent that coal is freely offered at \$4@\$4.25.

The cool weather of the last few days has not materially affected demand; dealers seem to have plenty of stock on hand to cover whatever orders they get, and from all indications they are not inclined to place new orders until surplus stocks are cleaned up. Demand for domestic coal has almost ceased, and if it were not for surplus orders on file, they would have to go out and scout for business.

Williamson, Franklin and Saline counties still show the effects of the warm spell and domestic sizes move slowly. The mines are catching up on lump orders, egg is slow and nut is worse. There has been little activity in steam sizes. Mines are getting shorter time by a day and some have knocked off two days in the last week. Railroad tonnage is quiet at the shaft mines and good from strip mines. The latter are working full time and are making a price in order to move their product, and preparations are going on throughout the field for other mines to open up about Oct. 1. There has been no change in prices in this field.

In the Duquoin and Jackson County field the movement of coal is light and working time has dropped off one day a week. There is no railroad tonnage out of this field to speak of excepting a little from strip operations. The Mt. Olive district has gone back almost to summer schedule. Business is unusually light and a large number of "no bills" await colder weather. Steam is about equal to demand and contracts. Working time is about three to four days a week. The Standard field is unusually quiet. Coal is still being sold at about cost of production and all mines have "no bills" of all sizes with the exception of screenings, which seem to move freely. Railroad tonnage is light and working time is practically back to summer schedule. Prices are unchanged.

Domestic deliveries at St. Louis are light although they

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Sept. 29 1924 | Sept. 14 1925 | Sept. 21 1925 | Sept. 28 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | \$4.10 | \$4.75 | \$4.75 | *\$4.50@\$4.75* |
| Smokeless mine run | Columbus | 2.10 | 2.55 | 2.55 | 2.40@ 2.75 |
| Smokeless screenings | Columbus | 1.20 | 1.50 | 1.50 | 1.40@ 1.60 |
| Smokeless lump | Chicago | 3.85 | 4.75 | 4.75 | *4.00@ 4.50* |
| Smokeless mine run | Chicago | 1.90 | 2.60 | 2.35 | *2.15@ 2.35* |
| Smokeless lump | Cincinnati | 4.00 | 5.00 | 4.75 | 4.50@ 5.00 |
| Smokeless mine run | Cincinnati | 2.00 | 2.60 | 2.60 | *2.25@ 2.50* |
| Smokeless screenings | Cincinnati | 1.20 | 2.00 | 1.85 | 1.75@ 2.00 |
| *Smokeless mine run | Boston | 4.25 | 5.50 | 5.20 | *5.15@ 5.25* |
| Clearfield mine run | Boston | 1.90 | 1.85 | 2.50 | *1.75@ 2.10* |
| Cambria mine run | Boston | 2.35 | 2.10 | 2.60 | *1.90@ 2.35* |
| Somerset mine run | Boston | 2.10 | 2.00 | 2.25 | *1.80@ 2.20* |
| Pool 1 (Navy Standard) | New York | 2.75 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pool 1 (Navy Standard) | Philadelphia | 2.70 | 2.65 | 2.65 | 2.50@ 2.85 |
| Pool 1 (Navy Standard) | Baltimore | 2.55 | 2.30 | 2.30 | 2.25@ 2.35 |
| Pool 9 (Super. Low Vol.) | New York | 2.05 | 2.15 | 2.15 | **2.10@ 2.30** |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 1.95 | 1.95 | 1.95@ 2.00 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.85 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.85 | 2.00 | 2.00 | 1.90@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.85 | 1.85 | 1.75@ 2.00 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.65 | 1.90 | 1.90 | 1.85@ 1.95 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.80 | 1.80 | **1.75@ 1.90** |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.70 | 1.70 | 1.60@ 1.80 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.70 | 1.70 | 1.70@ 1.75 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.55 | 1.55 | **1.50@ 1.65** |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.60 | 1.60 | 1.50@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.40 | 1.65 | 1.65 | 1.65@ 1.70 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.50 | 2.50 | 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.15 | 1.55 | 1.55 | 1.50@ 1.60 |
| Kanawha lump | Columbus | 2.10 | 2.60 | 2.60 | 2.45@ 2.80 |
| Kanawha mine run | Columbus | 1.40 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings | Columbus | 1.15 | 1.30 | 1.30 | 1.25@ 1.35 |
| W. Va. lump | Cincinnati | 2.60 | 2.75 | 2.75 | *2.50@ 2.75* |
| W. Va. gas mine run | Cincinnati | 1.60 | 1.65 | 1.65 | *1.50@ 1.75* |
| W. Va. steam mine run | Cincinnati | 1.45 | 1.50 | 1.55 | *1.50@ 1.60* |
| W. Va. screenings | Cincinnati | .95 | 1.15 | 1.15 | 1.10@ 1.25 |
| Hocking lump | Columbus | 2.50 | 2.75 | 2.75 | *2.50@ 2.90* |
| Hocking mine run | Columbus | 1.60 | 1.65 | 1.65 | 1.50@ 1.80 |
| Hocking screenings | Columbus | 1.05 | 1.40 | 1.30 | *1.25@ 1.35* |
| Pitts. No. 8 lump | Cleveland | 2.35 | 2.35 | 2.35 | 2.00@ 2.75 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.85 | 1.85 | 1.85@ 1.90 |
| Pitts. No. 8 screenings | Cleveland | 1.15 | 1.45 | 1.45 | *1.35@ 1.45* |

| Midwest | Market Quoted | Sept. 29 1924 | Sept. 14 1925 | Sept. 21 1925 | Sept. 28 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | \$3.35 | \$3.25 | \$3.25 | \$3.25 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Central, Ill. lump | Chicago | 2.85 | 2.85 | 2.85 | 2.75@ 3.00 |
| Central, Ill. mine run | Chicago | 2.20 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central, Ill. screenings | Chicago | 1.15 | 1.55 | 1.55 | 1.35@ 1.75 |
| Ind. 4th Vein lump | Chicago | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Ind. 5th Vein lump | Chicago | 2.60 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.25 | 1.20 | 1.20 | 1.15@ 1.30 |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.25 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.85 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | .80 | 1.15 | 1.15 | 1.15 |
| West Ky. block | Louisville | 2.85 | 2.10 | 2.00 | *1.85@ 2.00* |
| West Ky. mine run | Louisville | 1.65 | 1.35 | 1.35 | 1.25@ 1.50 |
| West Ky. screenings | Louisville | .90 | .75 | .80 | **.80@ 1.10** |
| West Ky. block | Chicago | 2.85 | 2.30 | 2.30 | *1.85@ 2.25* |
| West Ky. mine run | Chicago | 1.65 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 2.85 | 2.25 | 2.25 | 2.00@ 2.50 |
| Big Seam mine run | Birmingham | 1.60 | 1.75 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed) | Birmingham | 2.00 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block | Chicago | 2.85 | 3.00 | 3.00 | 2.75@ 3.25 |
| S. E. Ky. mine run | Chicago | 1.60 | 1.95 | 1.95 | 1.85@ 2.10 |
| S. E. Ky. block | Louisville | 3.00 | 3.00 | 2.75 | **2.75@ 3.00** |
| S. E. Ky. mine run | Louisville | 1.55 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Louisville | .90 | 1.25 | 1.25 | 1.10@ 1.40 |
| S. E. Ky. block | Cincinnati | 2.75 | 3.00 | 3.00 | *2.50@ 3.25* |
| S. E. Ky. mine run | Cincinnati | 1.55 | 1.55 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Cincinnati | 1.00 | 1.15 | 1.15 | 1.10@ 1.25 |
| Kansas lump | Kansas City | 4.50 | 4.35 | 4.35 | 4.25@ 4.50 |
| Kansas mine run | Kansas City | 3.25 | 3.10 | 3.10 | *2.75@ 3.25* |
| Kansas screenings | Kansas City | 2.35 | 2.50 | 2.50 | *2.35@ 2.50* |

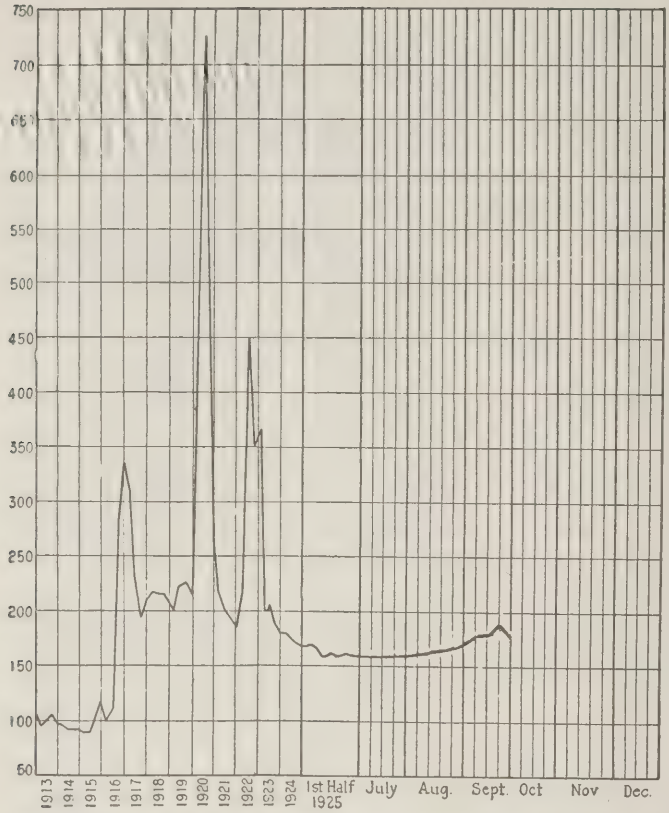
* Gross tons, f.o.b. vessel, Hampton Roads.

† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Sept. 29, 1924 | | Sept. 21, 1925 | | Sept. 28, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | \$2.34 | ............ | \$8.00@\$9.25 | ............ | \$8.20@\$8.95 | ............ | \$8.20@\$8.95 |
| Broken | Philadelphia | 2.39 | ............ | 9.15 | ............ | ............ | ............ | ............ |
| Egg | New York | 2.34 | \$9.25@\$9.75 | 8.75@ 9.25 | ............ | 8.65@ 8.90 | \$14.00@15.00 | 8.65@ 8.90 |
| Egg | Philadelphia | 2.39 | 9.00@ 9.70 | 8.80@ 9.25 | ............ | ............ | ............ | ............ |
| Egg | Chicago* | 5.06 | 8.17@ 8.27 | 8.14@ 8.20 | \$8.17@\$8.60 | 8.03@ 8.28 | 8.17@ 8.60 | 8.03@ 8.28 |
| Stove | New York | 2.34 | 9.50@10.25 | 8.75@ 9.50 | ............ | 9.15@ 9.40 | 14.00@15.00 | 9.15@ 9.40 |
| Stove | Philadelphia | 2.39 | 9.35@10.00 | 9.15@ 9.50 | ............ | ............ | ............ | ............ |
| Stove | Chicago* | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@11.00 | 8.48@ 8.80 | 10.00@11.00 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 9.25@ 9.75 | 8.75@ 9.25 | ............ | 8.65@ 8.95 | 14.00@15.00 | 8.65@ 8.95 |
| Chestnut | Philadelphia | 2.39 | 8.85@ 9.80 | 9.15@ 9.25 | ............ | ............ | ............ | ............ |
| Chestnut | Chicago* | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@11.00 | 8.28@ 8.50 | 10.00@11.00 | 8.28@ 8.50 |
| Pea | New York | 2.22 | 5.25@ 5.75 | 5.50@ 6.00 | ............ | 5.00@ 6.00 | 6.50@ 7.00 | 5.00@ 6.00 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | ............ | 5.00@ 6.00 | ............ | 5.00@ 6.00 |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.25@ 5.75 | 5.05@ 5.36 | 5.25@ 5.75 | 5.05@ 5.36 |
| Buckwheat No. 1 | New York | 2.22 | 2.50@ 3.00 | 3.00@ 3.15 | ............ | 2.50 | 2.60@ 3.00 | 2.50 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | ............ | 2.50 | ............ | 2.50 |
| Rice | New York | 2.22 | 1.75@ 2.25 | 2.00@ 2.25 | ............ | 2.00 | ............ | **2.25** |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | ............ | 2.25 | ............ | 2.25 |
| Barley | New York | 2.22 | 1.25@ 1.50 | 1.50 | ............ | 1.50 | ............ | 1.50 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | ............ | 1.50 | ............ | 1.50 |
| Birdseye | New York | 2.22 | ............ | 1.60 | ............ | 1.60 | ............ | 1.60 |

* Net tons, f. o. b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Sept. 28 | Sept. 21 | Sept. 14 | Sept. 29 |
| Index | 176 | 185 | 178 | 170 |
| Weighted average price | $2.13 | $2.24 | $2.16 | $2.06 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

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are better than they were a week ago, despite continued warm weather. Buying has been in smaller volume this year than in the past two years. Demand still continues principally for the middle grade coals although southern Illinois is holding its own. Standard is not moving and the demand for anthracite, smokeless and coke is easing. Wagonload steam is beginning to pick up. Local wagonload is fairly good and country steam is inclined to be quiet. Country domestic shows a little improvement on the cheaper coals and a noticeable tonnage is moving from the different refineries of petroleum coke.

## Kentucky Trade Easier

Demand for coal in Kentucky appears to have eased off a trifle. The anthracite situation has had very little general effect so far, and there appears to be no fear of non-union workers in West Virginia or Kentucky going on a sympathetic strike.

Domestic sizes are in slower movement and at weaker prices. Steam demand is largely for screenings, which are firm to stronger. Mine-run is not showing much demand and no improvement in price. Lake movement continues good, but a good many more mines are in operation and offering coal.

Generally speaking, industrial consumption is good and consumption by railroads is heavy.

In eastern Kentucky block coal is a shade weaker at $2.75@$3, with some off-grade coal as low as $2.50. Other prices are steady, with lump, egg and nut $2@$2.50; mine-run, $1.50@$1.75, and screenings, $1.10@$1.40.

Western Kentucky has received a setback due to inability to move block or prepared sizes along with more coal being offered. Block is $1.85@$2, lump and egg are $1.65@$1.85; nut, $1.40@$1.60; mine-run, $1.25@$1.50; and screenings, much stiffer, at 80c.@$1 for pea and slack, and 90c.@$1.10 for 2-in. nut and slack.

Western Kentucky screenings are not being offered freely, some operators holding on track for application against contracts or expecting stronger prices.

## Trade Speeds Up in Northwest

A material speeding up has been in evidence in the coal trade at the Head of the Lakes during the last few days. An impetus was furnished in the first touch of cool weather and for the first time this fall retailers were kept on the run in meeting the rush of buying by household consumers.

Twenty-nine cargoes of coal, including two of anthracite, were unloaded at the docks last week, and fifteen cargoes, including one of anthracite, were reported en route. It was regarded as interesting that hard coal should be still trickling up to this market three weeks after the miners' strike had begun. Approximately 3,800,000 tons of bituminous and 200,000 tons of anthracite are on the docks.

The market in prepared sizes of Pocahontas remains where it was placed a week ago, at $8.50, while mine-run and screenings are unchanged at $5.25 and $4.25 respectively.

While the anthracite market is distinctly firm, no advances in quotations have been announced lately, contrary to expectations in some quarters. Growing shortage of stocks of pea and stove sizes was noted. Demand for domestic coke is seasonably quiet at $8.50 but the trade is looking forward to a run in it later as an anthracite substitute. Briquets are unchanged at $9.

Demand at Milwaukee is light for the season, according to dock men, but some retailers report betterment, owing to cooler weather. The anthracite situation seems to cause little worry among consumers, although there is a shortage here. Receipts of hard coal by cargo this year up to Sept. 24 total 84,420 tons less than during the corresponding period of 1924. Receipts of bituminous coal by cargo up to the 24th aggregate 455,205 tons more than for the same period of last year. The total amount of coal received here this year to the date named is 2,531,649 tons, against 2,160,864 tons last year during the same period.

## Southwest Notably Improved

A marked improvement in the Southwestern market last week cleaned up all "no bills." Kansas screenings are a little easier, but there is no surplus. Kansas mines are disposing of all sizes as fast as brought to the surface. Screenings, on contract, are selling in some instances at $2.35, while the car lot quotation remains at $2.50.

The situation is little changed in Oklahoma from last week. Little coal is being produced around McAlester and at Henryetta output is about as it has been the last two months. In Arkansas, production is picking up in the Greenwood field and is unchanged in the other fields, with a wide spread of prices. Semi-anthracite lump is quoted all the way from $4.25 to $6.50, depending on the field and the demand.

In Colorado there has been a substantial increase in the demand for domestic lump coal, but it is disappointing with respect to the nut coal, that being a drug on the market at the present time. However, that situation will undoubtedly be relieved as soon as colder weather sets in. As a result of increased orders for lump and steam sizes the mines are working practically at capacity. Prices are unchanged.

Utah coal operators and dealers describe business as "good." Quite cold weather has set in for this season and orders for coal are larger and more numerous than they have been in many months. All grades are selling well. The car situation on the Rio Grande Western R.R. is still causing inconvenience, but the situation is far from critical so far. Prices are unchanged, and the labor situation was never better. The trade from every angle is in better shape than it has been for a long time.

## Cincinnati Trade Trims Sails

Strike talk and the shifting around of unionists in West Virginia have had little effect upon the Cincinnati market. Production took a slight drop, but apparently as long as there is enough tonnage to go around and no concentration of buying, there will be no tilt upward.

Smokeless business has been floundering a bit. The price was too high in comparison with high volatile and especially coals from the Elkhorn and other good domestic districts and too many producers have been on a week to week basis of sale. Even brokers have had to go fishing in the market with lump and egg around $4.50 and a trifle lower to move some of their tonnage. Shipments carrying a $5 price were still going forward but from that down to $4.25 "to the trade" was the spread. Automatically stove sizings slipped to $3@$3.25, mine-run to $2.25@$2.50 and screenings to $1.75@$2.

In the high-volatile list Elkhorn and Hazard prices were trimmed a little and while most Hazard shippers were holding out for $2.75 there was a shaving here and there down to $2.50 for block. The heavy Logan County (W. Va.) shippers, who have been holding at $2.50, stabilized these offerings. Mine-run was a trifle easier with the bulk of the steam movement around $1.50 and the gas still ranging up to $1.75 according to quality. Slack, too, was a bit easier with the heaviest part of the tonnage running around $1.10 and from that up to $1.25 for preferred stuff.

River business is tapering down because of low stage.

Softness in domestic grades is appearing in the Columbus market, due to rather warm weather and the fact that many mines were opened when the anthracite strike began. Dealers as a rule bought heavily at that time and have failed to move as much as they expected, as householders refused to be stampeded by strike news. A considerable retail business was done, however, and dealers are still busy delivering orders booked several weeks ago. Retail prices are rather steady at the higher levels which have prevailed for several weeks.

Steam business showed no particular change in the past week. Buying is mostly from hand to mouth as most of the larger consumers have fair sized reserves. Railroads are taking a pretty good tonnage and the same is true of public utilities. Manufacturing plants are not showing much activity in fuel buying, however. About 225,000 tons of coal is to be supplied to various public institutions under the Ohio government. Some free coal in steam sizes has been offered on the local market, due to the curtailment of the domestic demand, but the amount is not sufficient to have much effect on general market conditions.

Some of the lake shippers find their tonnage contracted for not sufficient and are picking up the excess of domestic sizes in this market, which has helped to keep the trade in good shape.

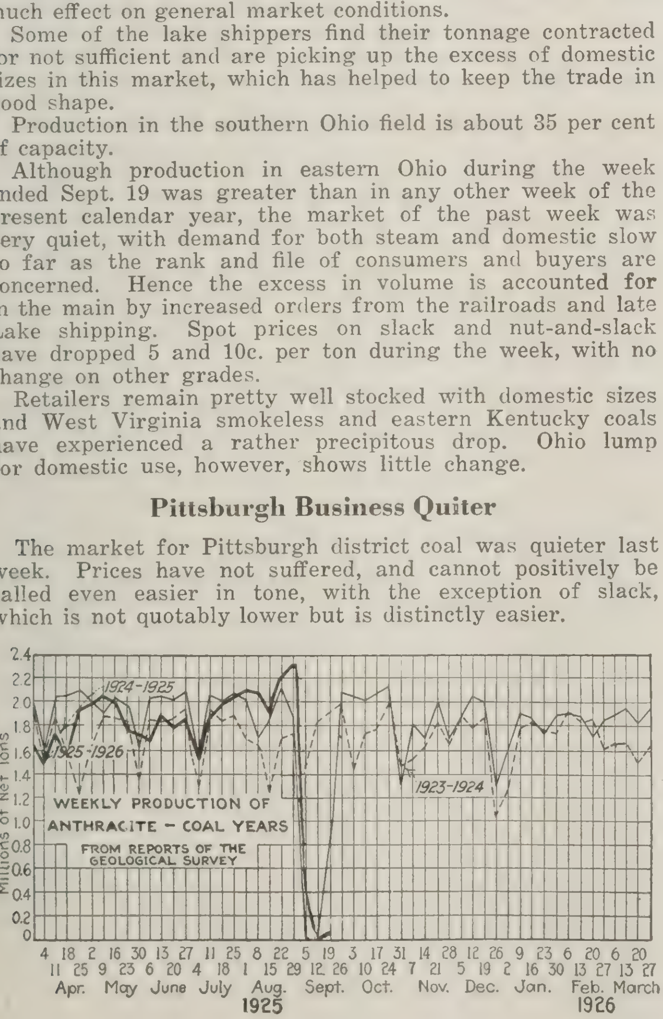
Production in the southern Ohio field is about 35 per cent of capacity.

Although production in eastern Ohio during the week ended Sept. 19 was greater than in any other week of the present calendar year, the market of the past week was very quiet, with demand for both steam and domestic slow so far as the rank and file of consumers and buyers are concerned. Hence the excess in volume is accounted for in the main by increased orders from the railroads and late Lake shipping. Spot prices on slack and nut-and-slack have dropped 5 and 10c. per ton during the week, with no change on other grades.

Retailers remain pretty well stocked with domestic sizes and West Virginia smokeless and eastern Kentucky coals have experienced a rather precipitous drop. Ohio lump for domestic use, however, shows little change.

## Pittsburgh Business Quiter

The market for Pittsburgh district coal was quieter last week. Prices have not suffered, and cannot positively be called even easier in tone, with the exception of slack, which is not quotably lower but is distinctly easier.



Industrial activity has reached as high a stage as can be expected. Steel buying and production have been in balance lately, with virtually no change in the past three or four weeks, since the recent speeding up. The labor outlook remains complicated and uncertain.

At Buffalo there has been no advance in soft coal outside of smokeless and that does not amount to much, for the demand is small and does not show much prospect of picking up right away. The supply is good and the output is equal to any sort of demand that can develop, even on a scare, for the consumers have most of their storage room occupied. Quotations remain at $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run and $1.25@$1.40 for slack; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, and $1.30@$1.60 for slack; $1.75@$2 for Allegheny Valley mine-run.

## Trade Rather Dull in New England

In general, the New England market is again rather dull, with buying interest developing more among retail dealers than among industrial users. Accumulations are again a characteristic of Pocahontas and New River at Hampton Roads, and in consequence prices let down further last week. Agencies again seek orders coastwise, and offers close to $5 as a flat price per gross ton f.o.b. vessel are rumored. No. 1 Navy standard has not yet declined to that extent, but practically no shipper today holds his coal for higher than $5.25. The Western market is not the sustaining influence that was expected, and some producers are eager to try their fortunes in New England all-rail when the new through rates go into effect.

Anthracite stocks here are beginning to show signs of depletion, especially in the larger cities. Already certain distributors are announcing their inability to accept orders for egg, stove and chestnut, and are restricting their sales energies to pea, buckwheat and bituminous. The gradually increased interest in anthracite substitutes will be interesting to watch as the season advances, but thus far the urgent warnings of the public authorities have not shown any appreciable result in the form of increased receipts of bituminous. There is, to be sure, a certain amount of buying by retail dealers, especially of screened coal from the central Pennsylvania districts, but the volume is not large.

On cars for shipment inland also the price level has receded; in some cases $6.75 has been shaded to $6.25, and $6.25@$6.40 for high-grade smokeless coal seems about the range. Both at Providence and at Boston there have been increased arrivals in the past week, owing to pressure at Hampton Roads, and factors apparently will be obliged once more to store coal in anticipation of a market.

A few of the Pennsylvania coals all-rail have brought better prices recently, but for the most part there has been no demand sufficient to influence quotations more than 15c.@25c., except for prepared coal.

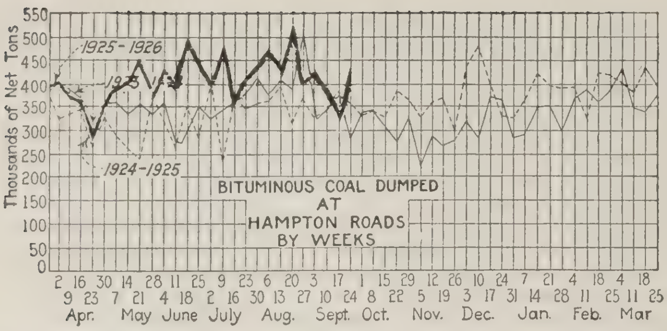
## Business Moderates at New York

New York bituminous shippers report only a moderate amount of new business, but the movement is holding up well because of shipments on orders previously placed. Deliveries on contracts also are heavy, as consumers who have arranged for their winter's requirements are anxious to get stocked up before the arrival of cold weather. Quite a few contracts running to April 1 have been closed during the past two months by consumers who failed to avail themselves of this protection during the regular contracting season. Others are contenting themselves with accumulating good-sized reserve supplies at current prices and taking a chance on the market going higher before they are in need of additional tonnage.

The price trend is not upward but rather the reverse, although no sharp slump has occurred except in West Virginia smokeless coal, which had a much greater advance than the Pennsylvania grades. The latter went up 10 or 15c. on an average, and are being fairly well maintained on the higher level, with here and there an operator willing to shade quotations slightly when necessary to keep his mines running steadily.

A little more free coal is reported at the local piers, but the surplus is not large enough to unsettle the local tidewater market.

The Philadelphia market is in good condition, inasmuch as consumer interest continues to be maintained. There have been no noticeable price increases and the market is



firm at last week's quotations. The railroads are not losing any opportunities to buy when they consider prices right.

There is increased screening of high volatiles, due to better domestic demand for sized coal, particularly for shipment westward. The increased tonnage of screenings is moved without a ripple and the buyers are still looking for more.

The pier business at tide continues to be discouraging and there is no indication that any improvement can be hoped for. Bunkering at least holds its own, with occasional small spurts.

The early part of last week saw a sudden upward trend in the Baltimore market. Stocks at tide became depleted under a rather urgent call for immediate delivery and prices moved up 10c. to 15c. in many cases for spot coal. Quotations on future deliveries remained about the same as for the past three weeks, and this confidence was quickly borne out by a rush of shipments. At present there is a surplus here and spot prices are at the average level that existed just before the flurry of two or three days. The export movement continues in some measure, three vessels having cleared the past week with a total of 8,168 tons cargo.

Buying of domestic coal is proceeding very slowly at Birmingham. There is no worth-while spot demand as yet and hold-ups on contracts are still in order, causing considerable effort by sales agents and brokers in moving current output. Dealers who have moderate stocks are taking coal from the mines about in proportion to the volume of retail sales, which are still abnormally small. Some yards are still without any reserves worth mentioning.

The spot steam market is fairly good, sufficient business being booked to prevent any serious accumulation. Demand for good grades of washed fuel is showing the greatest strength. The medium and lower grades of mine-run and washed product are being taken fairly well. The unbroken drought is still furnishing disposition for a large tonnage to steam power plants, while the extreme heat which has prevailed for some weeks is causing peak operations at ice plants. Other industrial activities are consuming about a normal tonnage. There is little stocking by industrial plants, railroads or other utilities, most of the carriers taking the minimum weekly quotas. Improvement in the bunker trade is slight, if any.

Steam prices are without change. Present quotations on domestic sizes will remain in force in October to a great extent, though some producers will make slight advances in mine prices next month.

Production is on a basis of around 400,000 tons per week. Car supply is adequate and labor is plentiful.

## Healthy Hard-Coal Stock at New York

Retail dealers in Greater New York still have good-sized stocks of chestnut and pea coal, as well as of the steam sizes of anthracite. Their supplies of stove and egg are becoming depleted, but will not be totally exhausted at most yards for some little time to come. The filling of large orders has been discontinued, but consumers have no difficulty in obtaining all the coal they need for current use.

The tonnage available for replenishing retail stocks is limited. Storage plants of all the large producing companies are bare of everything except pea and buckwheat coal, according to local sales agents, and the amount of pea in reserve is small.

Only a few cargoes of independent anthracite in the domestic sizes remain in the hands of wholesalers. These are being held for $15 to $16 alongside in the case of chestnut, while the asking prices on stove and egg range from $17 to $18 in most cases. Wholesalers also have a comparatively small tonnage of pea, buckwheat and rice. Their quotations on pea are $6.50@$8, mine basis; buckwheat, $2.50@$3; rice, $2.25@$2.75.

Odd cars of independent domestic sizes are being offered dealers in all-rail territory on the basis of $14@$16 at the mines. This tonnage is being absorbed slowly, as most dealers are unwilling to pay the prices asked.

There is no semblance of a rush by Philadelphia consumers to get coal, but those who are coming find that they are unable to get the most wanted sizes. Dealers with connections on the P. & R. Coal & Iron Co. are filling up with storage pea. As yet there is little call for pea, but when the cold days come to stay consumers will be glad to get it. A light tonnage of coke and sized soft coal was sold during the week.

Buckwheat continues easy with the companies. Some independents able to sell this coal are asking $2.75, or about 25c. above company price. The companies have a fair stock of rice and are shipping it to regular customers. Barley is out of the market.

A cool spell last week at Baltimore brought an increased demand from householders for delivery of fuel. Dealers for the most part were able to quickly supply this demand, which has again fallen off. It looks as if most of the retailers can continue an average fall supply for three or four weeks longer from stocks on hand. Some independents are asking premiums of $1 to $1.50 over August prices, but local dealers are ordering little of this premium coal. Retail prices for September are the same as in August.

The anthracite trade at Buffalo is confined to a limited movement of the small sizes. Some of the companies have not even that. The actual demand is light, though some consumers are hard to convince that there is not some conspiracy against them to hold the coal back for higher prices. The assurance that there is enough coal to last till there is more seems to be accepted.

There is a small trade in coke, but the handlers of it seem to be anxious to spoil it by trying to get more for it than has been asked up to this time. Instead of waiting for the demand to set in they are asking all the way from 50c. to $2 advance, though some are modestly asking only $9.50 for it at the curb. The slow handling of it is the worst thing against it.

## Connellsville Coke Market Easier

Eastern buying in the Connellsville coke market has been light of late. The Jones & Laughlin Steel Corporation, noted last week as inquiring for 20,000 tons of coke a month over the fourth quarter, bought more than that and at prices lower than expected. There were operators who insisted they would not sell for October under $4 and not beyond October unless at an advance, but no reports on prices for Jones & Laughlin are over $3.75 and in some quarters it is said the average was nearer $3.50. The purchases were made with a wage clause. The sales in part represent the starting of additional ovens, despite talk of labor supply being poor and of the possibility of additional strikes. One plant, just reopened, is already offering its first drawings, which generally go as heating coke.

The spot and prompt furnace coke market probably remains quotable at $3.75@$4, but there are rumors of some coke being offered at down to $3.50.

The starting of so many Frick ovens in August aroused fears as to labor, but the Frick company lately has been reducing production slightly. The independent scale is about 30 per cent under the Frick scale and operators are strong against making any advance, as the iron industry could not stand an advance. There are chances of small operators, not counting on operating afterwards, advancing wages so as to make some money during the anthracite suspension.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Sept. 12, 1925 | 975,434 | 157,357 |
| Previous week | 1,102,946 | 178,218 |
| Week ended Sept. 13, 1924 | 1,061,781 | 182,800 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Sept. 14, 1925 | 160,368 | 59,929 | ........ | ...... |
| Sept. 7, 1925 | 146,998 | 43,289 | ........ | ...... |
| Sept. 14, 1924 | 167,157 | 84,197 | ........ | ...... |

# Foreign Market And Export News

## Demand Quiet and Prices Weak In British Market

Dullness and idleness are the predominant features of the Welsh steam coal trade. Though inquiries have increased during the past week they are still insufficient to absorb output and keep the pits working regularly. Though stoppages are frequent, output is much in excess of demand. Prices have reached their lowest point for two years, though this does not attract business.

The Swedish State Railways are in the market for 40,000 tons of coal to be delivered this year, but it is feared that this business will all go either to Germany or to the north of England. The French Navy, which was inquiring for 45,000 tons of Welsh coal or patent fuel, is reported to have placed the order with French briquet manufacturers.

The idle loading berths at the South Wales docks average 30 to 35 a day, while the vessels in process of loading are delayed by intermittent colliery working. Thousands of trucks are held up under load because of the scarcity of business.

The Newcastle market shows some signs of improvement, which has led some operators to think that the depression has passed its worst stage. It is possible that the situation here is affected by the depression in the German coal industry, which has led importers to believe that prices have reached their lowest level and that further "bearing" tactics are useless. Though inquiries have improved, due no doubt to the approach of winter, actual business is slow in materializing.

Production by British coal mines during the week ended Sept. 12, according to a special cable to *Coal Age*, totaled 4,110,000 tons, compared with 4,255,000 tons in the preceding week.

### Coal Demand Revives Slightly In French Market

A slight revival in demand has taken place in the French coal market since the beginning of the month, judging by shipments from the North and Pas-de-Calais. Expiring contracts are being renewed in most instances.

Interest is largely centered on home fuels, on which summer prices will cease to be applicable at the end of this month. Among the French collieries and Belgian producers for the French market some are inclined to maintain present quotations while others favor an increase, as sized dries and anthracite descriptions are in lively demand from consumers. Semi-bituminous sized grades also are much sought. With regard to industrial fuels electric and gas works are expediting the putting in of winter supplies; but the sugar industry is acting more slowly.

The French wage agreement having expired on Sept. 15 the men seek an increase to 40 per cent in the allowance for the high cost of living, which, a few months ago was reduced to 20 per cent.

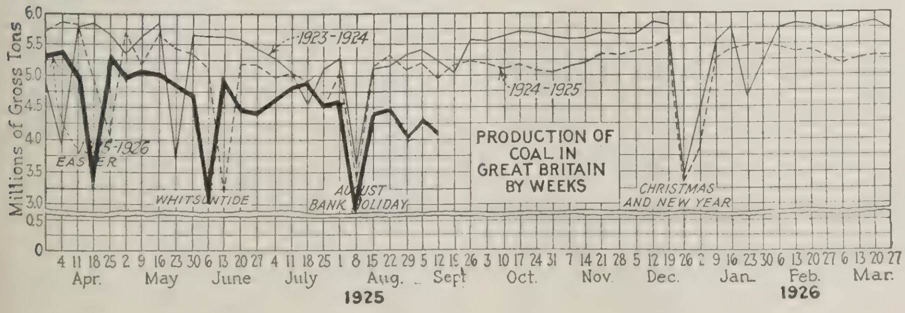
Certain Lorraine mines, those of the Sarre-and-Moselle and of Petite Roselle raised their prices 3 fr. per ton on Sept. 1.

During the first nine days of September the O.R.C.A. received from the Ruhr 65,568 tons of coke, a daily average of 7,330 tons. Indemnity coke has been advanced 0.25 fr. per ton to 145.95 fr. due to an increase in management expenses of the O.R.C.A.

### Market Develops Weakness at Hampton Roads

The market at Hampton Roads was weaker last week with supplies at the terminals increasing and demand falling off slightly. Foreign business was on the decrease, largely due to settlement of labor difficulties in the British mines.

Inquiries at tidewater were practically normal and many mines were reporting full-time operation. Some were cutting down their forces, which had been increased when the anthracite strike began. Domestic business has been retarded to some extent by unusually warm weather. Many concerns formerly using anthracite were preparing to use soft coal this year, dealers reported.



### U. S. Domestic Fuel Exports in August

| | 1924 | 1925 |
|---|---|---|
| Anthracite, gross tons...... | 254,086 | 476,046 |
| Value.................. | $2,820,498 | $5,390,844 |
| Bituminous, gross tons..... | 1,395,866 | 1,797,603 |
| Value.................. | $6,200,495 | $7,847,715 |
| Coke, gross tons........... | 42,308 | 63,714 |
| Value.................. | $360,316 | $482,-03 |

EIGHT MONTHS ENDED IN AUGUST

| | 1924 | 1925 |
|---|---|---|
| Anthracite, gross tons...... | 2,295,782 | 2,592,924 |
| Value.................. | $25,397,035 | $29,139,453 |
| Bituminous, gross tons..... | 10,159,638 | 9,844,417 |
| Value.................. | $47,956,873 | $43,842,329 |
| Coke, gross tons........... | 377,608 | 479,158 |
| Value.................. | $3,271,396 | $3,720,275 |

### Export Clearances, Week Ended Sept. 26, 1925

FROM HAMPTON ROADS

| For Italy: | Tons |
|---|---|
| Ital. Str. Aurania, for Porto Ferrajo. | 6,913 |
| Ital. Str. Humilitas, for Bagnoli.... | 6,014 |
| Ital. Str. Valsavoia, for Gibraltar.... | 7,746 |
| For Danish West Indies: | |
| Br. Str. Navarino, for Curacao...... | 7,402 |
| Nor. Str. Visna, for Curacao........ | 2,445 |
| For France: | |
| Ital. Str. Emanuele Accame, for Marseilles ..................... | 11,626 |
| Nor. Str. Hektor, for Marseilles...... | 5,890 |
| For Brazil: | |
| Braz. Str. Taubate, for Rio de Janeiro | 5,732 |
| Br. Str. Paris City, for Rio de Janeiro | 8,030 |
| For Canada: | |
| Nor. Str. Ruth, for Three Rivers.... | 5,233 |

FROM BALTIMORE

| For Porto Rico: | |
|---|---|
| Am. Str. Millinocket, for Guanica.... | 373 |
| Am. Schr. Nancy Hanks, for Port Jobos and Guayanilla .......... | 1,562 |
| For Canada: | |
| Ital. Str. Dalmazia, for Quebec...... | 6,233 |

FROM PHILADELPHIA

| For Cuba: | |
|---|---|
| Nor. Str. Vindeggen, for Havana.... | —— |
| Nor. Str. Bloamyra, for Antilla...... | —— |

### Hampton Roads Pier Situation

| N. & W. Piers, Lamberts Pt.: | Sept. 17 | Sept. 24 |
|---|---|---|
| Cars on hand.................. | 1,756 | 2,105 |
| Tons on hand.................. | 108,736 | 129,385 |
| Tons dumped for week.......... | 145,119 | 161,313 |
| Tonnage waiting............... | 20,000 | 20,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand.................. | 967 | 1,274 |
| Tons on hand.................. | 76,200 | 98,100 |
| Tons dumped for week.......... | 57,612 | 71,862 |
| Tonnage waiting............... | 7,656 | 192 |
| C. & O. Piers, Newport News: | | |
| Cars on hand.................. | 2,607 | 2,430 |
| Tons on hand.................. | 132,430 | 149,800 |
| Tons dumped for week.......... | 83,785 | 139,471 |
| Tonnage waiting............... | 115 | 9,895 |

### Pier and Bunker Prices, Gross Tons

PIERS

| | Sept. 19 | Sept. 26* |
|---|---|---|
| Pool 1, New York.... | $5.35@$5.60 | $5.35@$5.60 |
| Pool 9, New York.... | 4.80@ 5.00 | **5.00@ 5.25** |
| Pool 10, New York.... | 4.50@ 4.70 | **4.80@ 5.00** |
| Pool 11, New York.... | 4.30@ 4.55 | **4.50@ 4.75** |
| Pool 9, Philadelphia.. | 4.85@ 5.05 | 4.85@ 5.05 |
| Pool 10, Philadelphia.. | 4.55@ 4.75 | 4.55@ 4.75 |
| Pool 11, Philadelphia.. | 5.35@ 4.55 | 4.35@ 4.55 |
| Pool 1, Hamp. Roads. | 5.35 | *5.25* |
| Pool 2, Hamp. Roads. | 5.30 | *5.10* |
| Pools 5-6-7, Hamp. Rds. | 5.00 | *4.85* |

BUNKERS

| | Sept. 19 | Sept. 26* |
|---|---|---|
| Pool 1, New York.... | $5.60@$5.85 | $5.60@$5.85 |
| Pool 9, New York.... | 5.05@ 5.25 | **5.25@ 5.50** |
| Pool 10, New York.... | 4.75@ 4.95 | **5.05@ 5.25** |
| Pool 11, New York.... | 4.55@ 4.80 | **4.75@ 5.00** |
| Pool 9, Philadelphia.. | 5.05@ 5.25 | 5.05@ 5.25 |
| Pool 10, Philadelphia.. | 4.75@ 4.85 | 4.75@ 4.85 |
| Pool 11, Philadelphia.. | 4.60@ 4.75 | 4.60@ 4.75 |
| Pool 1, Hamp. Roads. | 5.50 | *5.35* |
| Pool 2, Hamp. Roads. | 5.40 | *5.15* |
| Pools 5-6-7, Hamp. Rds | 5.10 | *4.95* |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Sept. 19 | Sept. 26* |
|---|---|---|
| Admiralty, large........... | 24s. | 24s. |
| Steam smalls............. | 11s.3d. | 11s.3d. |
| Newcastle: | | |
| Best steams............... | 15s. | *14s.9d.@15s.* |
| Best gas................. | 17s.6d. | *16s.6d.* |
| Best bunkers............. | 15s. | *14s.6d.* |

* Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

The Atlanta, Birmingham & Atlantic R.R. has sold to the Woodward Iron Co. for $200,000 a branch line approximately 13 miles long which leaves the main line near Bessemer and extends to the Mulga coal mines of the Woodward company. This spur will be used in connection with the Woodward company's own railroad, which is used in transporting coal from the Mulga and Dolomite mines to the furnaces and byproduct ovens of the company at Woodward. A portion of it has been operated under a lease for some time. The railroad company has not used this branch since about 1912.

A number of the most important commercial mines in the Walker County field are now operating on much better schedules than obtained a few weeks back. The Galloway Coal Co. mines at Carbon Hill are on a six-day schedule, those of the Brookside-Pratt Co., near the same point also working full time. Other operations working five and six days per week are the Calumet mines of the Brilliant Coal Co., and the Parrish mine of the Railway Fuel Co. Schedules have been increased also at operations of the DeBardeleben Coal Co., some of its mines now operating full time; the Pratt Fuel Corporation and the stripping operations of the Manchester Coal Co. at Manchester and Saragossa and those of the I. O. Drewery Contracting Co. at Sunlight. All the larger companies still have mines on the idle list, but these will be started up as soon as market conditions warrant.

## COLORADO

Sale of the International Fuel Co. to Arthur Ponsford, Denver attorney, said to be acting for P. J. Quealy, wealthy Wyoming coal operator, for $71,297, was approved Sept. 16 by Frank McLaughlin, federal referee in bankruptcy, after a hearing in the federal building, Denver. The International Fuel Co. went to the wall with the crash of the Italian-American bank. The International owns a mine and 400 acres of coal land in Routt County.

Roy E. Mann and H. W. McLauthlin, stockholders of the National Fuel Co., filed a petition in the District Court at Denver, Sept. 16, asking the removal of H. Van Mater as receiver of the company, contending that his continued retention as receiver is highly prejudicial to the interests of the petitioners and others similarly situated. Van Mater, president of the company, was appointed receiver July 16 last, following the institution of an action in the District Court by the International Trust Co. The petitioners charge that Van Mater, while acting as president, in several transactions took advantage of his position to reap profit to himself and his friends, relatives and associates at the expense of the company.

The copper industry in Arizona is about to turn to the use of Colorado steam size coal, and will take about 150,000 tons per year.

The state coal mine inspector's report, just issued, shows an increase of 60,000 tons in output for August contrasted with the same period a year ago. The lignite fields in northern Colorado show an increase of 32,000 tons, Fremont and El Paso counties 2,000 tons, Gunnison County (anthracite district), 7,000 tons; Huerfano County, in southern Colorado, 40,000 tons; Las Animas coking coal shows a decrease of 55,000 tons and Routt County bituminous shows an increase of 25,000 tons. A total of 11,419 men worked in and about the mines compared with 12,109 in the same period a year ago.

## ILLINOIS

August earnings of the Chicago & Eastern Illinois R.R., which draws much of its traffic from union soft-coal fields, will show an increase over August of last year, T. C. Powell, the president of the road announces. "Although the movement of coal in our territory," added Mr. Powell, "is 50 per cent below normal, the movement of freight is showing a steady increase. I am trying to work out a policy which will help diversify the nature of our traffic, which is now mostly mine products."

Mining operations have been resumed at Franco No. 3 mine, at Marion, giving employment to 300 men.

The Illinois Central R.R. handled out of the Herrin district 5,000 cars of coal during August, 1925, and 2,000 cars out of the Benton district. The Herrin district showed an increase of 40.3 per cent over the business done during August, 1924. The increase at Benton was 20 per cent and at Christopher it was 141.1 per cent.

C. C. Pervier, deputy internal revenue collector of Sheffield, while on a vacation recently put in his time supervising the sinking of a new coal shaft on the Pervier estate at Indian Hill. Lamb & Pollock did the work and a fine bed of coal was reached at a depth of 48 ft. there being a strip of rock 38 ft. deep to be blasted which will provide a good roof. Hoisting equipment is being placed and coal is to be hoisted within two weeks. Mr. Pervier's time is completely filled with his work as a deputy internal revenue collector and he plans to lease the mine when everything is set for operation.

## INDIANA

The Pike County Coal Co., which owns and operates the Atlas No. 1 and No. 3 mines, in Petersburg, has issued orders that No. 3 mine, which has been idle since April 1, will start Oct. 1 with a full force of men. Work of cleaning the mine preparatory to resuming operations has been started. The No. 1 mine has operated almost every day since Aug. 1. It is the largest mine in Indiana south of the Baltimore & Ohio R.R.

A threatened strike of miners in the Terre Haute field using the Big Four R.R. miners' train to mines west of that city, was averted Sept. 22 when it was agreed that the railroad thereafter would permit miners to board and leave the train at the customary points. About 340 miners were idle Sept. 21 when the train failed to stop at two points where previously it had been customary to pick up men. A strike had seemed imminent when the railroad announced that in the future miners would have to board and leave the train at the Terre Haute station, discontinuing two stops used about fifteen years. The miners in a mass meeting Sept. 20 decided to meet the train at the usual places. The miners' train committee made immediate efforts to bring about an agreement with the railroad company and a written agreement will be in effect soon.

## KANSAS

Val Mendichi, Mulberry merchant, who recently leased mine No. 14 of the Sheridan Coal Co., near Gross, signed an agreement with District 14, United Mine Workers, on Sept. 22, and work of cleaning up the mine preparatory to operating began immediately. Previously the district board of the union had published a warning to members to stay away from the mine, alleging that the lessee was seeking to employ men at less than contract scale.

Walter B. Greek, of Croweburg, charged with burglary and larceny for the alleged theft of dynamite from the magazine of Sheridan Coal Co. mine No. 12, was discharged at his preliminary hearing in the Pittsburg City

Court Sept. 23, when Andrew Allen, a representative of the Sheridan Company, the complaining witness, could not testify that any dynamite had been stolen, as other employees did the checking which showed a case of the explosive missing. Greek is under bond to appear for trial at the October term of the Crawford County District Court on a charge of attempting to dynamite the steam shovel of the Dunkirk Coal Co. near Croweburg several weeks ago. Bloodhounds trailed from the shovel to Greek's home and fingerprints on one of the sticks of dynamite correspond with Greek's the authorities assert. Fuses to the dynamite under the steam shovel had been lighted but went out before reaching the explosive.

Mark Knott and Frank Cumiskey, who have been independent operators of smaller properties, have leased No. 49 mine of the Central Coal & Coke Co., northeast of Frontenac. This mine, which employs 300 men, has been idle for three years and will have to undergo extensive repairs before production is resumed.

Chapon & Westerlin will reopen their mine near Chicopee early this month. It employs 125 men. The tipple at this mine burned a few years ago while the fight between the Howat followers and the international union was at its height. The cause of the fire was never determined. The tipple is being rebuilt preparatory to operating.

The Central Coal & Coke Co.'s mine No. 51, in the southeastern Kansas field, began loading coal Sept. 16, after having been closed down since last spring. The mine employs 350 men, when working at normal capacity. The company expects to have a full crew working within two or three weeks. The Central has one other shovel now operating in the field.

Mine No. 14 of the Sheridan Coal Co., in the southeastern Kansas field, which has been idle two years, will be reopened under lease before the end of September. Val Mendicki, of Mulberry, has leased the mine, and it is understood that three other miners of the district may take shares in the lease before production begins. The mine will employ between 150 and 200 men.

## KENTUCKY

The Dawson Daylight Coal Co., near Dawson Springs, has virtually completed its new tipple, burned some weeks ago, and is now installing motors, screens, conveyors, etc., and will soon be able to go ahead with full preparation. During the interval a temporary loading arrangement has been in use.

The White Star Coal Co., White Star, has been sold by the American Light & Traction Co., of New York, to John L. Phillips, Ray B. Moss and W. L. Hammond at a cash price in excess of $100,000. The property, which has been closed for a year, will be reopened immediately, affording employment to about 200 miners. The coal property embraces about 1,300 acres of fine quality coal in the Mason-Harlan and Wallins Creek seams. The offices of the company will be moved from New York to Pineville immediately and the management of the company will be decided on at the first meeting of the new owners.

**D. E. A. Charlton**

Appointed manager of mining sales for the Goheen Corporation, of New Jersey, paint engineers, he assumed his new duties on Sept. 21. After several years of mining experience Mr. Charlton joined the editorial staff of *Engineering and Mining Journal-Press* in 1917, and assumed the post of managing editor in 1919. In August, 1922, he was transferred to the business department, becoming business manager in 1923. Charlton is a member of the A. I. M. E. and has been active in the affairs of the Institute. He also enjoys a reputation as a raconteur, his "Cousin Jack" stories being familiar to a wide circle of friends and acquaintances. Mr. Charlton makes his new headquarters at the New York office of the Goheen Corporation, at 331 Madison Avenue.

The Madison Coal Co., Central City, suffered the loss of three dwellings by fire early this month.

## MINNESOTA

The Berwind Fuel Co. is completing the installation of additional equipment at its briquetting plant at Superior that will nearly double its capacity. The management of the company is looking forward to marked expansion in demand for briquets from over the Northwest this fall and winter.

Thomas B. Harlan, representing the Fifth and Ninth district coal-mine owners of Illinois, is to hold a conference in St. Paul soon regarding the establishment of a coal barge line on the Upper Mississippi River. Major General Harry Taylor, head of the engineering corps of the army; Major Williams, district engineer, of St. Paul, and representatives of St. Paul interests will be in the conference. It is hoped to make some real progress in the matter. A coal barge line from the Twin Cities to a point about 75 miles south of St. Louis is proposed. The Minneapolis River Terminal Commission has made a report for a proposed harbor pool on the Mississippi to lock past St. Anthony Falls to a point some 12 miles north, giving a channel from the city to lower river points. It would be available for any boat that could use the 6-ft. channel now available to the government dam. Coal could be brought up the river from Ohio River points at a saving of $2, it is asserted.

## NEW YORK

S. A. Wertheim, vice-president of Burns Bros., New York City, recently announced that directors are working on a plan for employee, ownership of Burns Bros. stock.

## OHIO

Two mines of the Massillon, Belmont & Rosemary Coal Co. in the eastern Ohio field resumed operations Sept. 22 after several months of idleness. The plants employ about 500 miners. The mines are in the Flushing district. The Meister mine at Lafferty, is reported as being prepared for resumption.

While the Southern Ohio Coal Exchange has passed out of existence as a functioning organization, Walter D. McKinney, the former secretary, with a small office force, is still on the job gathering statistics and sending out information to operators in the southern Ohio field. Liquidation of the affairs of the association has been going on by W. W. Metcalfe, who was named receiver several months ago. Figures collected by Mr. McKinney show that the output in the entire southern Ohio field during May was 15 per cent; in June 14 per cent; in July 15 per cent and in August 19 per cent of capacity. During August the Hocking Valley R.R. hauled 12 per cent of the capacity of mines on its line while the New York Central hauled 31 per cent of the capacity of mines on that road.

In the past six months there has been a large thinning down in the ranks of coal jobbers and brokers in Cincinnati. At the beginning of the year there were about 110 offices doing business on this side of the river and the other—in Covington, Ky., in particular. These have been reduced by about 25. Including members of firms and office employees about thirty have joined the Florida "gold" rush.

Mine No. 281 of the Ohio Collieries Co., located near Madoo, has been opened following an idleness of months. About 300 men have been given employment as a result. The mine is loading railroad fuel exclusively.

## OKLAHOMA

Officials of District 21 (Oklahoma) United Mine Workers, wired officials of District 14 at Pittsburg, Kan., on Sept. 22 that Oklahoma operators had sent agents to Columbus and Scammon, Kan., to recruit men to work in Oklahoma mines on the open-shop plan. The District 14 executive board replied that Kansas will not work in other than union mines. It then sent a circular to all locals warning against accepting employment in Oklahoma.

Fire of undetermined origin on Sept. 17 destroyed the wash house and engine room of the Thomas Coal Co.'s mine near Blanco, 13 miles south of McAlester. Three men in the mine at the time of the fire escaped through the manway after they had detected the odor of smoke while inspecting the workings. The damage has been estimated at approximately $4,000. Company officials decided to start repair work immediately and expected to have the mine working again within a week. About 50 men have been employed at this mine lately, though it is capable of employing 100 men.

The office of the Milton Coal Co., Milton, was destroyed by fire the first week in September.

## PENNSYLVANIA

Garwood mine of the Etna Connellsville Coal Co., along the Monongahela Ry., near Allison, resumed operation on Sept. 25.

Tony Pezzi and Michele Bassi, convicted in the Cambria County Court of the murder of James Garman in a hold-up near Colver on Oct. 11, 1924, were electrocuted in the Rockview penitentiary, Sept. 21. The two men, members of a gang of notorious robbers, held up a Cambria and Indiana train at Concrete Bridge, shot Garman, who was acting as an express messenger, and carried off the payroll of the Ebensburg Coal Co., amounting to $33,000. Neither Pezzi nor Bassi made a confession. Both were said to be implicated in the robbery of the West End Coal Co. in Lackawanna County, July 20, 1923, when a messenger was killed and $75,000 taken. Tony Burchanti and John Torti were electrocuted at Rockview for this offense on June 1, this year. Others of the gang are still at large.

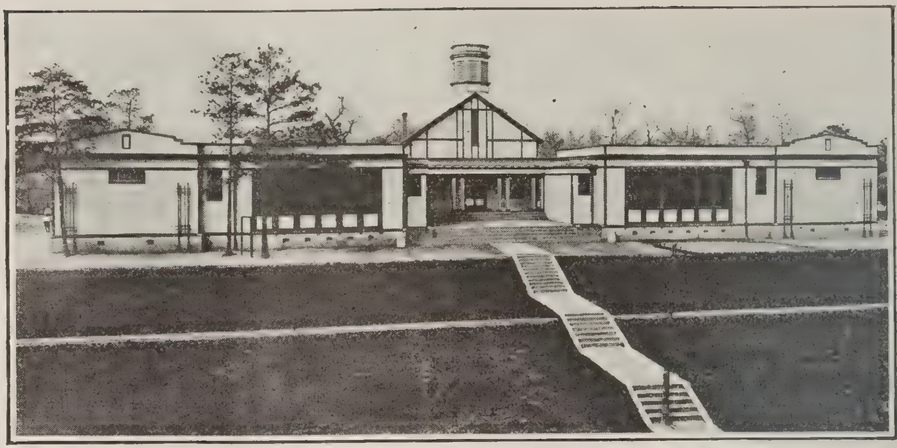
In the Connellsville coke region there seems to be a growing unrest among mine laborers due to an impression that the price of coal has advanced $6 or $7 a ton, on account of the anthracite strike. This impression is created by propaganda spread by agitators from the United Mine Workers of America and from the I. W. W. The two miners of the Jamison Coal & Coke Co. near Perryopolis, that struck last week for restoration of the high peak wage scale, are still out and were joined Sept. 17 by most of the men at the Washington Coal & Coke Co. No. 1 plant at Star Junction, near Dawson.

The Eleanor mine of the Stern Coal & Coke Co., at Fairbanks, resumed operation last week, according to reports. The mine is located along the Monongahela Ry.

The Ontario Gas & Coal Co. has closed its mine in the Pigeon Creek Valley, near Bentleyville. Production through all this district, a strongly unionized section, is now down to practically nothing.

William Diamond, superintendent of the Davis Coal & Coke Co., of Boswell, has severed his connection with that concern and is now superintendent of Shaft No. 2, Buffalo Susquehanna Coal & Coke Co., of Du Bois.

The Penn-Lackawanna Coal Corporation has just closed leases taking over the Watt & Scurry mines adjoining its Simpson breaker, at Carbondale, on the New York, Ontario & Western R.R. Extensive inside developments have been undertaken and these mines have been fully equipped with the latest standard mining machinery. Upon resumption of mining operations at the Watt & Scurry mines the company will materially increase the output of its breaker at Carbondale.



**School for Colored Children at Edgewater, Ala.**

This picture was taken before the grass was planted in the yard or on the terraces. It is a good example of the neat, clean, orderly, businesslike way in which industrial companies in the "New South" are solving the problem of educating future citizens.

## UTAH

Industrial conditions in Utah are declared by conservative leaders—bankers and others—to be better now than they have been in many years. Some say they are better than they have ever been since Utah became a state. The crops are the heaviest in years with excellent markets and strong prices.

## VIRGINIA

Directors of the Clinchfield Coal Corporation declared a dividend of $1 a share on the common stock on Sept. 17. The last dividend paid was $1.50 a share.

A Chicago syndicate is said to have leased for an indefinite period the properties of the Empire Anthracite Coal Corporation, located eight miles northwest of Pulaski, in southwest Virginia, and will take charge in October. It is understood that the output of about 400 tons daily will be doubled, necessitating the employment of more men in all departments. This is one of the few anthracite mining operations in south west Virginia, having been opened several years ago. The mines are connected with the Norfolk & Western Ry. by a narrow-gage road, the loading tipple being located in town. In connection with the tipple, a briquet plant is under construction and it is expected to be ready for operation soon.

The Chesapeake & Ohio R.R. is now engaged in locating the proposed branch line between Gilbert in Logan County and the Stonecoal branch of the same road in Raleigh County, the location having reached a point on the Guyandotte River three miles above Pineville. The C. & O. has appropriated $20,000,000 for expansion and development.

Judge A. Barley, of Alexandria, represents a Pennsylvania syndicate, the name of which is being withheld for the present, which is said to be prepared to spend $300,000 or more in tests to determine the amount of semi-anthracite coal in the immediate region of Pulaski. In the event coal is found in sufficient quantities to justify the expenditure, the syndicate, Judge Barley says, will spend several millions of dollars in the development of this industry. Judge Barley has obtained options on property adjacent to Peppers Ferry and Blacksburg and is having a map made of the territory from the crest of Cloyds Mountain to Peppers tunnel, an area embracing about forty square miles.

M. C. Bartholomew, residuary receiver of the L. R. Steel Company, is preparing to put on a night shift at the Merrimac mines, Montgomery County, and to take them out of bankruptcy, as they are doing exceedingly well. When the first receivers of the Steel company finished their work the coal mines and some Florida property were left in bankruptcy and most of the stores were put into a solvent company.

## WASHINGTON

Development of the Hi-Carbon Coal Co.'s mine, a mile and a half east of Morton is under way, A. L. Patterson, chief owner and general manager of the company having made arrangements to rush work on the property. Operations at the mine are in charge of D. W. Watkins, superintendent of the Everett-Fisher Coal mine, two miles north of Morton. A double shift is installing machinery and completing a road for trucks to bring the output of the mine to the railroad. Preliminary development has gone to the extent of driving several shafts to prove the extent of the bed and the quality at different points. A tunnel 9 ft. wide at the bottom, 7 ft. at the top and 6½ ft. high is being driven.

## WEST VIRGINIA

A slight mine fire occurred Sept. 24 in mine No. 2 of the Cleveland-Morgantown Coal Co., in Scotts Run, but it was promptly extinguished by state mining men and others. Little lull in working time was experienced. A fall of coal broke an electric wire and caused a short-circuit.

In a deal closed in Buckhannon on Sept. 17 William N. Satterfield, of Green Spring, sold to A. W. Bigler of Clearfield, Pa.; W. M. Burns, of Houtzdale, Pa., and Ben Ellis, of Houtzdale, Pa., and associates 7,500 acres of coal land, including five seams. A tract of 1,500 acres consists of low-sulphur coal, it is reported. The tract fronts on the Pickens branch of the Baltimore & Ohio R.R. A mining town, tipples and other improvements, it is said, will be built within a short time. It was rumored that $75,000 cash was the purchase price.

M. Benton Mitchell, manager of the Marion Division of the Bethlehem Mines Corporation, resigned that position recently, according to newspaper reports. A general shake-up has been made in the general office force, according to reports.

It is reported that E. S. McCullough, labor commissioner of the Pittsburgh (Pa.) Chamber of Commerce recently declined to accept his former position as labor commissioner for the Consolidation Coal Co. in connection with the new miners' organization. Mr. McCullough went to Pittsburgh about a month ago.

With an output of 561,000 tons of coal in August, mines of the Island Creek Coal Co. operating in the Logan field exceeded any month's production in the history of the company, the July output amounting to 535,000 tons. There was one day in August when the company loaded 23,700 tons of coal, likewise a record tonnage.

J. M. Turner, of Huntington, has leased the mine recently purchased by the Eastern Coal & Export Corporation, of Richmond, the lessee planning to reopen the mine and start production. The mine formerly was known as the V. S. Veasy mine and is on the Glen Jean & Eastern Ry., which connects with the Virginian at Paz.

In order to take care of the heavy coal movement through Williamson the Norfolk & Western Ry. has started a two-year construction program in the local yards at Williamson, which when completed will have cost two million dollars. The company plans to build a new round house, filtering plant and to make extensive trackage improvements.

New companies organized in West Virginia in August had an aggregate capitalization of $1,150,000, there being five resident and one non-resident companies so organized. The new concerns are the Coalburg Colliery Corporation, of Charleston, capitalized at $25,000; Betty Ann Block Coal Co., with 500 shares of no par value; War Ridge Smokeless Coal Co., of Clarksburg, with an authorized capital of $100,000; Elk Garden Big Vein Coal Co., of Elk Garden with an authorized capital of $15,000; Guardian Coal Co., of Webster Springs, with an authorized capital of $1,000,000; Sheridan Coal Co., of Columbus, Ohio, with an authorized capital of $10,000.

The Wise Pocahontas Coal Co., has increased its capital stock from $50,000 to $100,000 and the Coal Run Coal Co. from $300,000 to $500,000.

The following West Virginia coal concerns have surrendered their charters to the Secretary of State: Camp Block Coal Co., Hager Coal Co., Slack's Branch Coal Co., Rivesville Coal Co. and the D. K. R. Coal Co.

Development of the Pond Creek Coal Co., with a plant on the Waters of Dry Fork, McDowell County, in the Tug River District, has been practically completed, and the company has been steadily increasing its output. Production in August was 47,000 tons, an annual rate of something over half a million tons, which is about one-half of the planned capacity. This company was organized in February, 1923, following the sale to the Ford Motor Co. of the Original Pond Creek Coal Co. The new company began to produce coal in July, 1923, and in that year produced 69,000 tons and the next year 190,000 tons. It is stated that by the early part of 1926 the company should be up to its planned capacity of one million tons per year.

State Tax Commissioner Hall's tabulation on the sales tax returns for the last fiscal year shows that the coal industry paid a total tax of $735,418.61, while the manufacturing industry paid $727,842.82. In 1924 coal paid $1,093,782.87 and manufacturing $780,013.03. While the revenue from the coal industry decreased 32.76 per cent the manufacturing returns showed a loss of 6.69 per cent. The taxes collected for the last fiscal year were on the old rates. The Legislature of 1925 having revised the schedule of rates, heavier revenue is expected during the current fiscal year, with coal paying a slightly higher rate.

Production at the fifteen mines of the New River company in Fayette and Raleigh counties amounted to 208,000 tons in August, as compared with barely 200,000 tons in July, the August output being the largest monthly production of the company in the last two years. The company in August made a moderate profit. Since early in the year it had been operating at a loss. There is every indication that September will prove to be even a better month for production and returns.

It is reported that A. J. O'Neal, of Beckley, has leased the Neal Coal Co. at Lester, and will soon start operations. This mine has been closed for two years on account of the depression in the industry. Mr. O'Neal formerly was superintendent for the Ingram Branch Coal Co.

July saw another substantial increase in the shipments of smokeless coal, bringing the total for the first seven months of the year up to 24,530,118 tons, or an increase of 3,608,017 tons over the corresponding months of 1924. The increase in July of this year alone over July, 1924, amounted to 804,062 tons, all smokeless fields showing a substantial gain but with the Pocahontas district leading, the net gain in that field amounting to 359,135 tons.

## WYOMING

Kemmerer Coal Co. mines Nos. 1, at Frontier, and 5, at Sublet, have adopted rock dusting to reduce danger of explosion to a minimum. Several cars of the dust arrived recently from Devil's Slide, Utah, where it is pulverized. No. 6 mine, which opened Sept. 16, also is rock dusted. Recently the company experimented with a dust made locally, but it proved unsuccessful.

## CANADA

The coal output of the Province of British Columbia for the first seven months of this year was 1,373,923 gross tons, as compared with 1,193,848 tons in the corresponding period of last year. The increase was due to greater activity in the Crow's Nest Pass field, which yielded 511,050 tons, as compared with 190,041 for the first seven months of last year, during four of which the mines were closed by a strike. The Vancouver Island mines produced 772,056 tons, as compared with 847,586 tons, and the Nicola-Princeton field 129,221 tons, as compared with 90,817 tons for the first seven months of 1924. The coke production of the province up to the end of July of this year was 200,843 tons, as compared with 146,217 tons during the corresponding period of last year.

Sigurd H. Burnstad, coal operator, of Round Hill, Alta., has assigned and the Canadian Credit Men's Trust Association is appointed custodian.

# Traffic

### Attack Rates to Bluefield

The Appalachian Power Co. and a number of other coal consumers and retail coal dealers in Bluefield, W. Va., and Glyn Lyn, Va., have joined in a complaint before the Interstate Commerce Commission attacking rates from the Pocahontas, Tug River, Thacker and Clinch Valley districts on the Norfolk & Western Ry. The petitioners ask for the establishment of commodity rates which shall not exceed certain distance tariff charges now published by the defendant carrier. The distance rates in question range from 23 to 73c. per ton less than the commodity rates assailed.

Members of the coal committee of the Indiana Chamber of Commerce met recently in Indianapolis with officials of the traffic department to prepare counter-proposals in the case to be presented to the carriers in the Indiana freight rate case. The carriers and the committee have each presented proposals, but no agreement has been reached. In case no decision is reached, the matter soon will be turned over to the Interstate Commerce Commission.

## Coming Meetings

**Illinois Coal Operators' Association.** Annual meeting Oct. 6, at Chicago, Ill. Secretary, C. E. McLaughlin, Fisher Bldg., Chicago, Ill.

**Alabama Mining Institute.** Annual meeting, Oct. 6, Birmingham, Ala. Secretary, J. L. Davidson, Birmingham, Ala. The Seventh Annual First-Aid Field Meet also will be held on this date.

**American Gas Association.** Annual meeting, Oct. 12-16, at Atlantic City (Steel Pier), N. J. Secretary-manager, Alexander Forward, 342 Madison Ave., New York City.

**National Conference of Business Paper Editors.** Annual meeting, Oct. 14 and 15, at Congress Hotel, Chicago, Ill. Secretary, D. G. Woolf, 334 Fourth Ave., New York City.

**Kanawha Coal Operators' Association.** Annual meeting, Oct. 15, at Kanawha Hotel, Charleston, W. Va. Secretary, D. C. Kennedy, Charleston, W. Va.

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**American Welding Society.** Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting, Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal. Que., Can.

**Illinois Mining Institute.** Fall meeting, Nov. 6 and 7 at West Frankfort, Ill. Secretary, Frank F. Tirre, St. Louis, Mo.

**Harlan County Coal Operators' Association.** Annual meeting, Nov. 18, at Harlan, Ky. Secretary, E. R. Clayton, Harlan, Ky.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering.** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

## Obituary

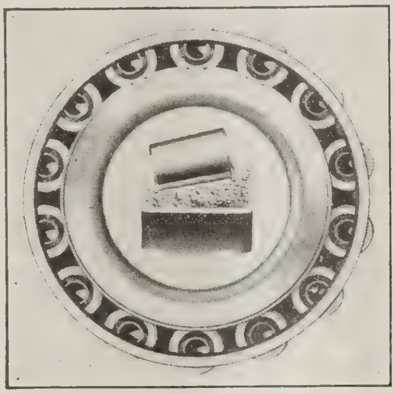
**Jabez B. Hanford,** 61, for more than twenty years a leader in the coal industry in the Monongahela Valley, died at his home in Morgantown, W. Va., Sept. 22, of sarcoma. Mr. Hanford, who was born at King's Chapel, Staffordshire, England, had held nearly every sort of position in and about the mines. He took charge of the Elkins interests in 1905 in Monongalia and Preston counties and when those properties were disposed of in 1919 he became one of the organizers of the National Fuel Co. He served as executive officer of the concern until illness prevented further activity on his part. He served as a member of the executive board of the Coal Mining Institute of America, was one of the organizers of the Coal Mining Institute of West Virginia and was for three years its first president. He was also a member of the American Institute of Mining and Metallurgical Engineers.

**Lewis A. Hayden**, president of the Hayden Brothers Coal Corporation and for forty-one years a resident of Colorado, died suddenly of a heart attack at the company's office, 708 Tramway Building, Denver, Colo., Sept. 22. He leaves a wife, three sons and a daughter.

# New Equipment

## Continuous Axial Alignment In New Roller Bearing

Improvements are often possible even in equipment of well established merit. The improved type of anti-friction bearing shown in the accompanying illustration has recently been introduced by the Timken Roller Bearing Co., of Canton, Ohio. This differs from the well known design of bearing of this kind in certain major details, yet retains all the advantages that characterized its predecessors.



**Self-Aligning Bearing**

The rear flange of the cone is slightly undercut and the large end of the roller is made perpendicular to the roller center line. This renders the rollers self-aligning and admits of higher rotational speeds than were before possible.

In the new designs the roll is so formed that the surface of the larger end is at right angles to the center of the roll. The contact between the roll end and the rib of the cone which is slightly undercut thus lies in two areas, assuring continuous perfect axial alignment between bearing and roller. Similarly perfect line contact is maintained between the roller and both cone and cup.

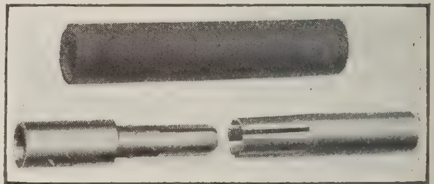
Together with the cone and roller the cage has likewise been improved. Instead of the roll pockets being punched out one at a time resulting in slight misalignment due to metal stretching, all openings in the new cage are punched simultaneously. An inwardly turned flange at the small end of the cage further guards against distortion. The lateral edges of the cage are swedged inward so that the contour of the pocket sides conform to the contour of the roll. This process, known as winging, assures a perfect fit and smooth operation of the rollers.

Although the predecessor of this bearing built along the same general lines, had low frictional resistance, the improved type has still less. The self-aligning properties of the roll and cone admit of much higher running speeds and the hardness and excellent wearing qualities of the parts in contact reduce wear to such an extent that it is seldom necessary to disturb the original adjustment. These refinements render the new bearing particularly adaptable to all industrial applications especially those involving high speeds.

## Protected Connector Assists In Making Changes

An insulated plug and socket type of phosphor bronze connector supplied with a protecting sleeve of tight-fitting rubber tubing was recently placed on the market by the Ohio Brass Co., of Mansfield, Ohio. The connector is made so that cable ends can be soldered into the two parts. When the connector is thus arranged, the insulation on the cable is back-cut so that the rubber tubing which is slipped over the connector forms a continuous protecting surface. A ring on the plug end of the connector slips into a corresponding groove in the socket. In this manner the connector forms a tight contact that cannot easily be pulled apart in service.

This connector is expected to be a labor-saver for connecting cable ends which must occasionally be separated. Greater utility will be found for it, however, on the terminals of motors, switch leads, headlights and circuit appliances which must be removed from time to time for repairs or inspection.



**Cable Connector Makes Quick Changes Easy**

A strong spring contact and a holding ring make this connector a serviceable device on cables and electrical devices.

## New Companies

**The Le Flore Coal Co.,** Kansas City, Mo., capitalized at $12,000, has been incorporated. The company is to mine, buy, sell and deal in coal. The incorporators are: W. L. Johnson, L. W. Johnson, and L. M. Johnson.

**The Chelsea Coal Co.,** Pittsburg, Kan., capitalization $25,000, was granted a charter Sept. 22 by the Kansas Charter Board. The company has purchased the coal rights on 600 acres near Chelsea, Okla., and has ordered a steam shovel to place on the tract. The incorporators are: L. E. Compton, W. O. Myers, and J. F. Dowis, of Pittsburgh, and J. A. Holland, of Mulberry, Kan. Sale of the coal will be handled by the Security Coal Co., with which Mr. Holland is connected, and which has sales offices in Kansas City, Mo.

**The Royalty Coal Co.** has been incorporated in Madisonville, Ky., with a capital stock of $20,000, by Jesse Diamond, Jack Dozier and others.

**The Carman Coal Co.,** 123 Sixth Street, East Liverpool, Ohio, has been chartered with an authorized capital of $50,000 to deal in coal and coal mining equipment and machinery. Incorporators are Terry O. Carman, Alice G. Carman, La Pash Carman, James M. Haun and Charles W. Ferguson.

A charter has been granted to the **John-Ames Coal Co.** of Wilkes-Barre, Pa. The incorporators are E. D. Ames, Ralph Rymer and Paul G. Collins.

**The Bernard Coal Co.,** Cambridge, Ohio, has been chartered, with a capital of $5,000, by Thomas R. Bernard, Ernest Larrick, R. R. Noble, Hewey Bailey and Arthur A. Olden.

COAL AGE

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## Passing It Up to the Boss

IN MANY CORPORATIONS, the company president does not leave the solution of disputes between the manager and his subordinates to be determined between them, but takes a hand himself and frequently overrules the former to the advantage of the latter. After a while the manager realizes he is a mere figurehead and leaves all matters which are in dispute to the president.

The manager feels he is not the court of last resort, that the employees can always appeal against his judgment and he conforms to the condition thus presented to him. The president, who thus interferes, is no longer able to delegate matters, even though he protests vigorously against being drawn in. The manager is never satisfied that his judgment will not be overruled, and the subordinates are always hopeful that they can obtain a decision in their favor.

Ever since Theodore Roosevelt shook his big stick and settled an anthracite strike, both parties in anthracite labor disputes have left the decisions largely in the President's hands. Even if he refuses to undertake a settlement, both sides anticipate that the time will eventually come that he will compel one, and the appeals, as the public has noted, are not so much from operators to mine workers and mine workers to operators as from both operators and mine workers to the president and the public.

If the mine workers realized that the operators had the final power of decision, if they felt that the public would not interfere, they would be less disposed to wait patiently for such action. But they have learned that the public intervenes, that settlements are made on the basis of giving the least the mine workers are willing to accept, so they waste no time on the operator.

The administration declares, it is said, that this practice of passing the dispute up to the boss has to stop and really seems disposed to insist on that attitude; but if, in the end, the President is going to act, and we hope he will not, it would be better that he do it by an arbitral decision made in the absence of immediate peril rather than by a settlement dictated by the mine workers and based merely on opportunist considerations. Shall the difference be decided on its merits or shall the party most ready to submit itself to the exigence of public need be asked to make a patriotic sacrifice? The mine workers are hoping for the latter, being assured that if that is the final settlement they will receive at least a part of their demands. Let up hope that the resolution of the administration will be upheld, so that the union will be convinced that, not political exigence, but the economics of the anthracite industry will be the final basis of decision.

"Soft-Coal Interests are heartened by the possibilities of consolidations," says Archer Wall Douglas, eminent business observer. "There should be no difficulty in procuring the necessary funds. It must be clearly shown, of course, that the general public will not suffer either in service or in unduly high prices." With the country full to overflowing with developed coal properties, a recurrence of prolonged high prices is the one thing that does not make us insomnious.

## Keeping Up-to-Date

NO ONE COULD JUSTLY suggest that mine officials, especially purchasing agents, should treat too politely a salesman who approaches with an irritatingly presumptuous air; but certainly many mine officials—purchasing agents, and engineers—would do well to listen awhile when a good salesman calls.

Much of the equipment installed at mining properties today has been designed and introduced to the industry by salesmen and due to this fact it is the manufacturer's representative who knows most about it. Even coal-company records of service of machines are usually incomplete and when the operator wants to know anything about his equipment he frequently turns to the manufacturer.

The salesman has a specific job. He generally sells but a few lines and thus has greater opportunity to learn more about them than anyone else. His experiences with his equipment and the modifications which can be made to it are sometimes of great value to a coal company.

Few mining men have the time or opportunity to visit the other properties in their field but often the salesman does. And thus he obtains ideas regarding his product which will be helpful to his prospective customer. After all, if each of us had to depend upon his own ideas this would be a small world.

## Where Fires Are Anticipated

IN SOME PARTS of the world, spontaneous combustion of the coal bed after partial extraction or during the process of mining is provokingly common. Two general causes are given for this ignition—ventilation and the presence of water. Where the water comes from the surface and where the area is stopped off and thus not ventilated through other parts of the mine, a partial cure for the water and a complete cure for the ventilation is furnished by filling or at least closing all holes where water or air may enter.

This should be done before any fire occurs. As fires eat away pillars and breed falls and falls breed fires wherever the coal has been incompletely extracted, it is better to fill up the holes that caving causes before a fire occurs, for otherwise new holes will be formed later, and the work will be only increased by delay. However, in some cases, where the crops have fires dating back perhaps to prehistoric time, the workings may enter such burning outcrops and so cause the extension of the ancient fires, which have been known to extend for a distance of more than a mile from the outcrop.

In some cases the driving of a tunnel in the rock to meet the dip of the seam far beyond the point where the coal is burning may prevent much fire trouble, but just where the fire area ends is a large question. Unfortunately, that is rarely known, and so this expedient is difficult of accomplishment; but if the engineer cannot avoid entering fire areas he can do something at least to prevent their creation, for the closing of surface holes is not difficult. If done persistently it is calculated to prevent any bed, prone to ignite spontaneously, from indulging in that habit, and of reducing the difficulty in supressing the fire in a seam if the ancient fires should, perchance, be disturbed.

## Finish the Job

WITH A BLIND FAITH in the savings which will result from proposed changes, many mining companies have made large investments in improvements. To the man or men directly responsible for these changes there is rarely a doubt regarding the wisdom of such expenditures. The results obtained and the savings effected are so apparent to them that they often forget the necessity for collecting such data as will convince the other fellow.

As a result, modernization plans often go slowly because definite and positive information is not available to prove that work already done has brought about the desired results. Sooner or later some one denies the fact that certain changes have proved successful or asks for proof. Then, unless the evidence is presented, new developments are retarded or stopped.

Thus only half the job is done when an appropriation is obtained for new work; and only two-thirds of it when the improvement is completed. Performance data must not be forgotten. Many a coal company today is backward and unprogressive, not because it wishes to be so, but, because it fails to sell itself on its own improvements. Every coal mine operating man and engineer ought to do his level best to keep his company out of that classification.

## One Job—Three Jobholders

IT IS USUALLY CONCEDED that the electrification of coal mines is economical. However, union labor can sometimes upset the nicest calculations. When the last general suspension in the anthracite region took place a certain operating company used steam pumps to drain one of its operations, two pumpmen being employed, each working 12 hours per day. Since then, not only has this pumping station been enlarged in capacity and electrified but all pumpmen have been put on 8-hour shifts. Under present conditions it is only necessary to operate this pumping station eight out of each 24 hours in order to drain the mine.

Now, here comes the rub. The agreement with the miners provides that maintenance conditions are to be the same as during the last suspension. The miners have, therefore, insisted that *three* pumpmen be employed to keep the water out of this operation during the present strike, although only one shift is pumped and only one pumpman is employed during normal operation. In order to avoid all argument, unpleasantness and friction the company now pays three men to do one man's work, those employed on two of the three shifts having practically nothing to do—except, possibly, to look wise. Such is the reasonableness of the United Mine Workers.

## Haphazard Methods

EVERY MINE has its peculiarities. The coal, the floor and the roof and the depth of cover vary, but comparatively little effort is made to ascertain exactly what are the characteristics of each and how they should modify mining methods. In many mines almost every item is left to the judgment of the miners. Ask what the system is and after you have heard how wide are the rooms and how thick the pillars you learn no more.

You are unable, quite often, to learn how the shots are placed, just how much coal is left in the roof or in the floor and other important details. These matters are quite generally left to the miners, and with the large turnover so customary in the mining regions, it is not possible to believe that every miner is a fit person to decide how the work shall be done as usually he has not been long enough on the job to develop a system. Long, painstaking study and experience is needed to find the best methods. Not only does the miner not give the matter careful consideration but usually he is not employed long enough to gain any proficiency.

The Phelps Dodge Co., Copper Queen Branch, has carefully formulated its standards of drilling and shooting, and it trains all its new men in these plans. It is careful not to give its instructions arbitrarily. It explains that the miner's own methods may be all right as applied to conditions in the Cœur d'Alenes, Butte, Globe or any other region from which he has come, but these are the methods the management has determined are best for the Copper Queen mines and for the conditions the miners at these mines have to face. When he is new to the job and so open to suggestion and not prejudiced by any experience in those workings they require him to perform every operation once under supervision.

Cannot coal mines do as much? At one mine with heavy cap pieces two feet long the props forced their way into the roof. What preparation for working in such mines would a man have who came from mines with a hard roof or with a floor where the weight had to be distributed over the "pavement" instead of over the roof? At another mine the shots were fired by electricity. Was any care given to show a man who entered the mine for the first time that the magneto must be actuated with a quick stroke and whether the shots should be in parallel or series and which shots should be fired by ordinary fuse and which by first-delay fuses, where such are used? Did the men know a parallel arrangement from one in series? Did they understand the method of connection? Did their shots fail from a lack of such knowledge and were they secretly relying on current from the trolley because they failed to use magneto and fuses correctly? Was the percentage of slack excessive because they went to their work without training? Worse yet, in some mines a few of the men have had so little instruction that it has been found that they do not even know how to "sound the roof."

WELL-KNOWN ECONOMISTS are prophesying that a settlement more permanent than usual will come out of the anthracite strike if outsiders will leave the situation alone. These experts do not know coal as does John Lewis. Without outside influence—skillfully and politically directed by John—how could the miners be assured of victory 100 per cent of the time regardless of the justice of their case? We pause for answer.

# Three-Ton Scraper Pulls Coal from Face Swiftly

## Moves Two Carloads Each Trip—Roof Control Greatest Difficulty but Triple Shifting Will Speed Up Extraction—Nine Rows of Props Maintained

**By R. Dawson Hall**
Engineering Editor, *Coal Age*,
New York City

LARGE SCRAPERS, like large cars, apparently have come to stay. Certainly, it is probable that the small scrapers that must come and go two or three times to take away a single ton of coal are about to be superseded by those which move more than a ton every time they travel from the face to the road or to the conveyor-way.

At the No. 4 mine of the Union Pacific Coal Co., Rock Springs, Wyo., a scraper is being operated that has an actual and regularly attained capacity of 2.7 tons. It brings that quantity of coal every trip to the chute, whence it is loaded into two cars, each of 1.35 tons capacity, the scraper pushing the coal along the chute and stopping while the cars are being shifted, so that part of one scraper load goes into one car and part into another.

It should be explained that the work so far done is purely experimental. This applies not so much to the scraper itself as to the action of the roof in the scraper workings. This constitutes the real unknown factor in the operation of mechanical loaders where long-face methods are practiced, yet George B. Pryde, vice-president and general manager and A. W. Dickinson, general superintendent, are certain that, as this experiment has succeeded, even greater success will be attained hereafter, for two important wherewithals were lacking in the trials. These were speed in extraction and a proper disposition of the break line in relation to the slips of the roof.

Good practice would require that the work be rushed not only daily but day and night, the cutting and shooting being performed during one shift, the spotting and erection of props during another and the scraping and loading during a third. It may be contrived to place the props during the cutting and shooting shift, and if that can be managed only two shifts will be necessary, but at least that number should be provided in order that rapid progress may be made.

Speed in operation also would demand either that each car be large enough to hold one whole scraper load or that a conveyor be placed below the chute, so that it will not be necessary to keep the scraper waiting for the filling of cars as is now the practice. These two methods, in which great speed might be attained —increasing the number of shifts and shortening the time the scraper remains at the chute—would so decrease the time of extraction that there would be far greater assurance that all the coal would be saved and that the face would not be closed in.

Another helpful factor in attaining complete and safe extraction would be afforded if the face of the working was arranged to parallel the natural break lines or slips of the roof. In this long-face operation the face line has reached a direction immediately at right-angles to the slips. Were the face parallel to the natural cleavage the breaks would be less likely to over-run the timbers. Another difficulty that future development will not have to face is that the work has been started without the advantage of any initial break.

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The headpiece shows No. 8 mine of the Union Pacific Coal Co., at Rock Springs, Wyo., which is really part of No. 4 of the same company, where the other scraper experiments described in this article are being made. The big rock on the right with large holes eaten into it testifies to the sand-blasting powers of Wyoming winds. This is the rock over the coal. It has to be broken in the longwall work.

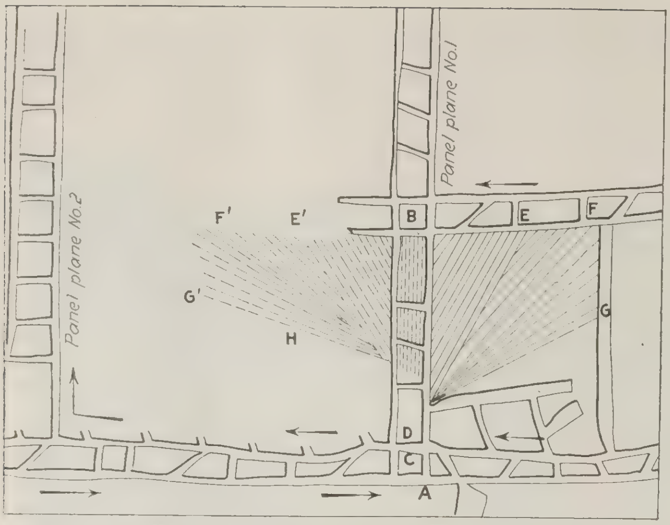


**Fig. 1—Plan of Scraper Workings**

On the right-hand side a slant face was developed between parallel headings making available a large tonnage of coal for each undercut made. On the opposite side of the scraperway similar long falls (*G'*. *F'*. *E'*.) will be produced by taking successive slant cuts from the corner of the solid pillar *H*. The chief difficulty encountered in this process was the control of the roof.

The roof had to be fractured and caused to fall for the first time, if possible along the edge of the timbered area with props 8 ft. long and of not over 12 in. in diameter. This somewhat difficult operation of fracturing the roof was performed, not without losing timbers and some of the coal face but it was eventually accomplished and that gives assurance.

Because the conditions in the experiment have been so adverse Mr. Dickinson is more than hopeful that, when favoring conditions are arranged, no coal will be lost and no men or equipment imperiled. Even if the market should cause irregular working, it will not prevent the entire removal of the coal which will be achieved without any adverse circumstances.

The scraping and return hoists, one of 75 hp. and the other of 45 hp., were placed at *A* in Fig. 1. A double hoist was not available or it would have been used. Such a machine will be provided in future development. The scraper commenced operations by nibbling at the undercut corner *B* and was pulled by the scraping hoist down to *C* for unloading. Here a chute was placed about a foot above mine-car height, and the coal was dumped into cars as described, each taking 1.35 tons without any topping or careful arrangement of the car's contents.

### METHOD OF CUTTING

The line *AB* is on the full pitch of the bed and is inclined at about 8 deg. After the corner had been removed cuts were made consecutively along lines such as are shown in Fig. 1, until the line *DE* was reached, the coal being removed by the scraper as soon as it had been shot down.

As fast as progress made it possible, posts from 8 in. to 12 in. in diameter were erected 10 to 12 ft. in the clear from the face, these posts being set on 3-ft. centers and in nine rows spaced 3 ft. apart.

After the line *DE* was reached the direction of cutting was deflected until the line *DF* was attained. It was about this time that a good break was effected which reached in places to the face, occupying about the area shown in Fig. 1. For this reason a thin rib had to be left, after which scraping was resumed. It will be continued until the line *DG* is reached. The small pillar has been shot, and every evidence favors the idea that it will succumb under the roof weight, and any further breaks will not destroy timber. The greater part of the posts are recovered and used over again making the costs for this item by no means as great as it would otherwise be.

### SCRAPER HELPS REMOVE CHAIN PILLAR

The intention is to remove the chain pillar between *B* and *C* with the aid of the scraper and then to proceed to undermine, shoot and scrape away the large unbroken pillar to the left of the area now occupied by the chain pillar, making cuts in the manner indicated and proceeding with the cutting upon lines bearing to the left of the chain pillar at an angle equal to that used in cutting to the right, but in the opposite direction.

In that manner it will be possible to remove a large portion of the coal without moving the hoist to another position and without making it necessary to change the position of the chute or of the sidetrack by which it is served.

With all the work, of undercutting, of spotting the props and placing them and of scraping away the dislodged coal, being done in a single shift, it has been possible to maintain an output of 150 to 200 cars a day or 200 to 270 tons in each 8 hr. except when the roof fall occurred and distributed the regularity of the operation. A greater tonnage will be attained, doubtless, when a conveyor is installed and a heavier hoist provided. A still larger output is assured when both cutting and shooting are done on the night shift.

### SIX MEN ON SINGLE SHIFT

At present two men are employed at the chute and three at the face. A sixth man handles the two hoists alternately. Of course, a double- or triple-shift operation will make it necessary to employ four or five more men—a cutter, a bugdust shoveler, two timbermen and perhaps a man to run the scraper, not to drag coal from the face, for that will be done only during the day, but to move posts from the heading to the point where they are to be set.

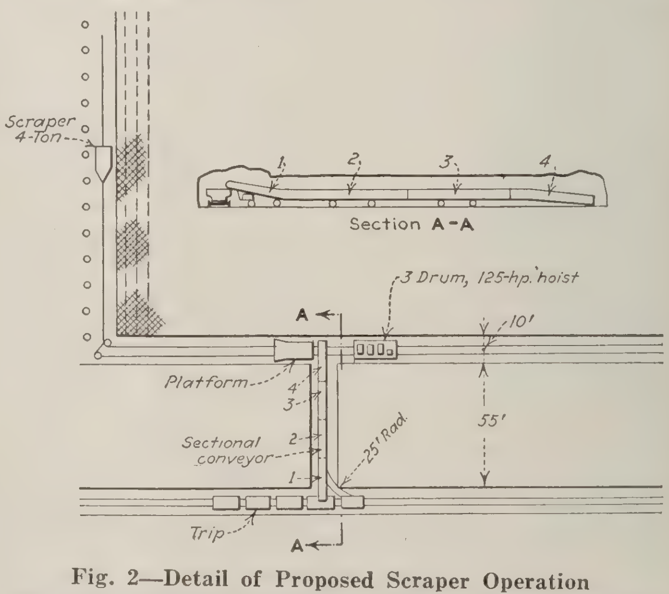


**Fig. 2—Detail of Proposed Scraper Operation**

Use of a big scaper in conjunction with small cars necessitates the employment of a conveyor. This will permit cars to be loaded during the time that the scraper is traveling to and from the face.

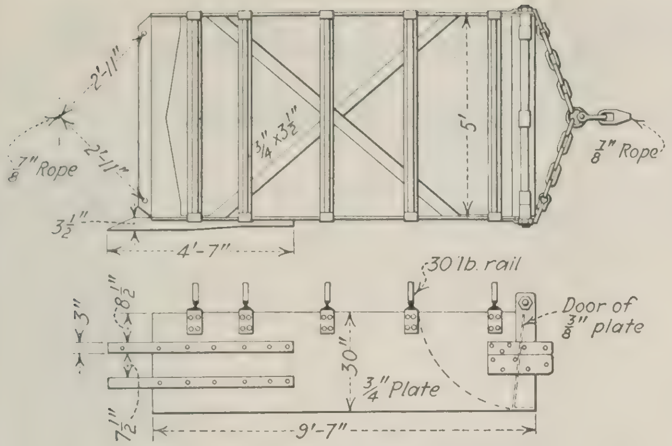


Fig. 3—Detail of New Scraper

This scraper is built heavy and strong, intended not only to move a large tonnage, but also to withstand for a long time the rough usage to which underground equipment is invariably subjected.

The depth of the cover where the scraper is working is about 500 ft. and from a drill hole sunk at a nearby point the roof immediately over the coal appears to be, either of mingled or of interstratified shale and sandstone presumably of no great strength. At a point about 82 ft. above the coal occurs a stratum of solid sandrock 81 ft. thick. This seems to be the measure from which the roof gains much of its strength. Above it the material is interstratified and free from beds of any such thickness. It is probably weak, therefore, from the massive sandstone bed upward. Whether this sandstone has broken in the recent falls cannot, of course, be ascertained and on its fracturing doubtless success greatly depends.

The mine cars, it is conceded, are altogether too small. They have only a 36-in. track gage and are but 50 in. wide. The side and end boards reach up to a point 44½ in. above the rail. The bottom is not set down around the wheels but is flared out to overhang them. In order to make loading convenient, the track for loaded cars is raised at the chute about 18 in. above the main track in the entry, and the hump is so arranged that the cars tend to run past the chute being retarded or stopped at pleasure by the application of sprags.

### Coal Is Not Disturbed

The scraper is provided with runners curved at both ends so that it passes over the coal without disturbing it unduly, entire dependence being placed on the gate for the transference of the coal to the roadway. This gate is pushed into place when the coal presses against it. Little coal is carried back by the scraper in returning to get a load, and what is thus disturbed is thrown back into place by the men working at the face.

It is the intention to place a Goodman scraper of from 4 to 5 tons working capacity in mine No. 8, which is really a part of No. 4, though the coal is taken to another tipple. This will be operated straight up and down the pitch, which is the direction of the slips, the double-drum hoist being moved forward with the face. This corresponds with the method of operation which Glenn Knox has adopted at the Gunn-Quealy Coal Co.'s Sweetwater Mine. A large or "Type B" scraper has recently been ordered and is now being constructed. It will be used in the No. 8 mine where the coal is from 6 to 9½ ft. thick.

In this mine the entries are from 9 to 12 ft. wide and from 5 ft. 8 in. to 7 ft. 6 in. high. Fig. 2 shows the proposed plan of adapting this loader to the conditions encountered Parallel entries about 55 ft. apart will afford faces approximately 300 ft. long.

The new winding engine or hoist will have three drums and be fitted with a 125-hp. motor. It will be mounted on a truck and so arranged that it may be held in any desired position by means of jacks. The drums will spool 800 ft. of ⅞-in., 1,200 ft. of ¾-in. and 1,700 ft. of ¾-in. rope, respectively.

The loading chute or platform will be mounted on detachable wheels so that it can be either dragged along the bottom or transported on the mine track. The scraper itself is approximately 10 ft. long, 5 ft. wide and 2½ ft. high. By means of the "automatic rope" this scraper can be made to negotiate the corner and deliver its load onto the loading platform. It is estimated that it will not be necessary to move the winding engine oftener than about once every ten days.

### Design Special Sectional Conveyor

In order to transport the coal from the loading platform to the cars a special sectional conveyor has been designed. This is of the standard drag type and consists of four sections all of which are mounted on mine car wheels except the last one or No. 4. Section No. 1 will be the power unit driving the conveyor. For this purpose it will be fitted with a 30-hp. motor which should be amply strong to move all the coal with which the conveyor will ever be loaded during normal operation.

In order to allow of switching the four segments into position it was necessary to so arrange the machine that the fourth section can be jacked up and slid onto section No. 3. Sections Nos. 1, 2 and 3 may be disconnected and are so arranged that they can be moved from place to place by a locomotive by means of radial drawbar couplings. On section No. 1 the conveyor is so pivoted that its end, which normally extends over the car, can be lowered to clear the roof when moving.

In most cases where a 125-hp. hoist is used a conveyor such as this will be unnecessary. It is essential in the instance above outlined, however, because of the system of parallel entries employed.

**Safety Headquarters at a New Mexico Mine**

This home-like little cottage houses the safety station at Mine No. 5 of the Gallup American Coal Co. at Gamerco, N. M. L. M. Kuhn is the safety engineer in charge of this important part of the coal mining operation in Gamerco.

# Synchronous Motors with Magnetic Clutches Are Successfully Applied to Breaker Machinery

### They Start Heavy Loads Without Shock or Strain—Power Factor Is Improved and Peak Demands Reduced so That Penalty Charges on the Bill Are Avoided

**By Edgar J. Gealy**
Associate Editor, *Coal Age*
New York City

When the Chauncey Breaker of the George F. Lee Coal Co., near Avondale, Pa., burned down a few years ago it presented a good opportunity to build upon the old site a new breaker which would contain some of the most modern equipment available. From the way other companies have sent their representatives to visit and carry on tests at this plant, one is certainly assured that the aim of the management has been attained.

Even though the time allotted to build and equip the new structure was limited, Paul Sterling and A. J. Kutchera, who worked out the engineering features of the breaker with the management of the company, decided to install synchronous motors for the main drives.

An anthracite breaker, because of the enormous quantities of machinery employed in the process of preparing its product, usually requires a great deal of power. Whether this power is purchased or generated at the mines the power factor of the load becomes an important item. Consequently, the synchronous motors were used in the new breaker.

In spite of the fact that the installation of these motors necessitated some novel ideas in breaker construction and arrangement of machinery, the new $124,000 breaker was put in operation 54 days after the building was started.

All the breaker motors are supplied with energy distributed from a fire-proofed, inclosed, switchboard room located approximately in the middle section of the breaker. The largest motors are two 75-hp., 150-r.p.m., 440-volt, synchronous units, connected to their loads by belts. From the main switchboard room, circuits also extend to one 50-hp., two 30-hp., and two 25-hp. motors which drive small groups of equipment or individual machines.

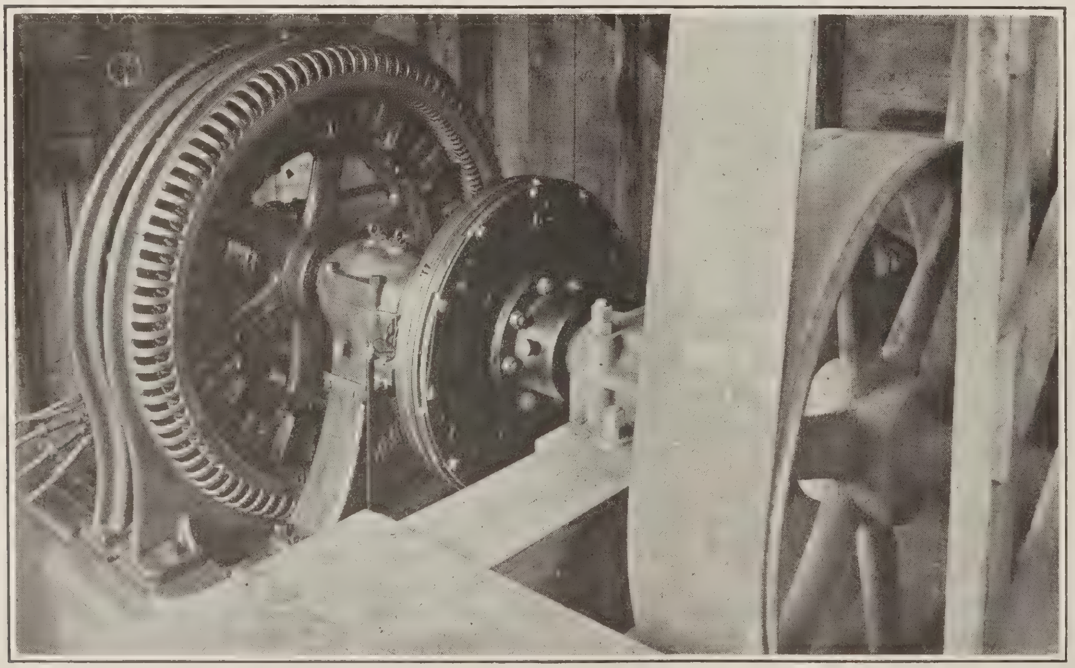
Each of the synchronous motors is equipped with a magnetic clutch. By means of this device the load can be accelerated smoothly and easily whenever the machinery is started. Control buttons are conveniently located near the motors or where a workman can see the equipment being driven. For slow-speed work, such as is required to unload a screen or clear a chute, a separate control lever is provided. Whenever new belts or ropes are installed inching is also easily accomplished.

Direct-current energy for the fields of the synchronous motors and also for the magnetic clutches connected to them is supplied from a 10-kw. motor-generator set located in the switchboard room.

## Automatic Control of Motors

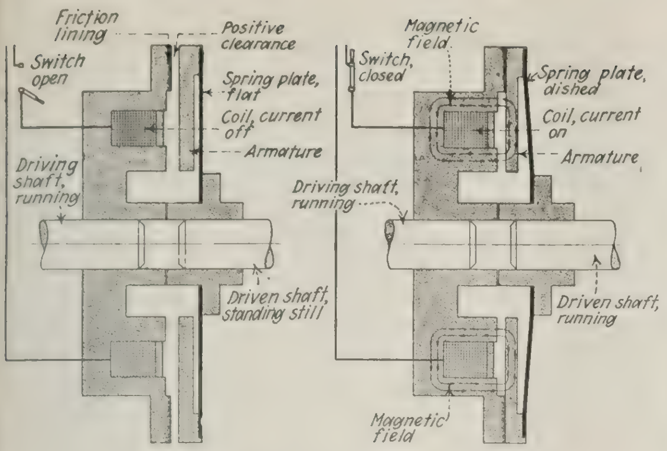
Automatic speed control and acceleration of the other motors is accomplished by means of operating panels having contactors connected to suitable resistance grids mounted behind them. These motors are also started or stopped by means of push buttons located near the machinery.

The application of synchronous motors to breaker



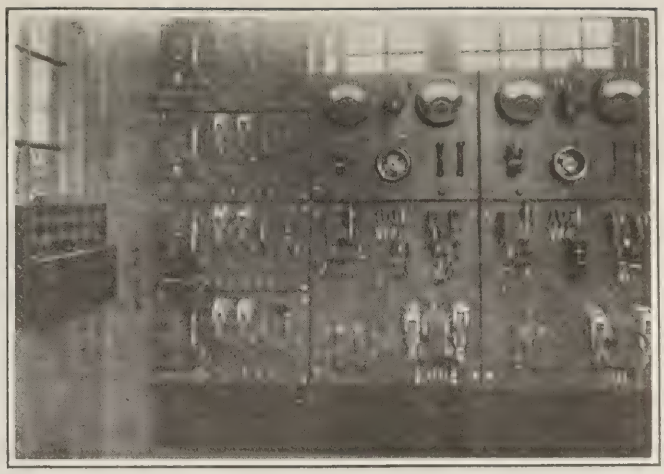
**Motor and Clutch**

Each synchronous motor is equipped with a magnetic clutch which makes it easy for the motor to start its load. This motor drives nine shakers through two belt and two rope drives.



**How the Magnetic Clutch Functions**

The successful application of synchronous motors to machinery used at the mines almost invariably necessitates the use of a clutch. A magnetic clutch, such as shown here, not only permits the motor to start easily but also makes possible slow-speed operation and inching.



**Control Board Regulates All Motors**

This is part of the switchboard located in the breaker. Timed accelerating contactors control the starting operations of the motors. On the extreme left the push-buttons, with covers removed, are shown.

machinery is unusual, but, in keeping with the increasing necessity for more efficient operation of mining properties, they were selected and have since proved successful in this service. Electric power is purchased upon a schedule which contains a penalty for poor power factor. This was another reason for selecting synchronous motors for the largest power units.

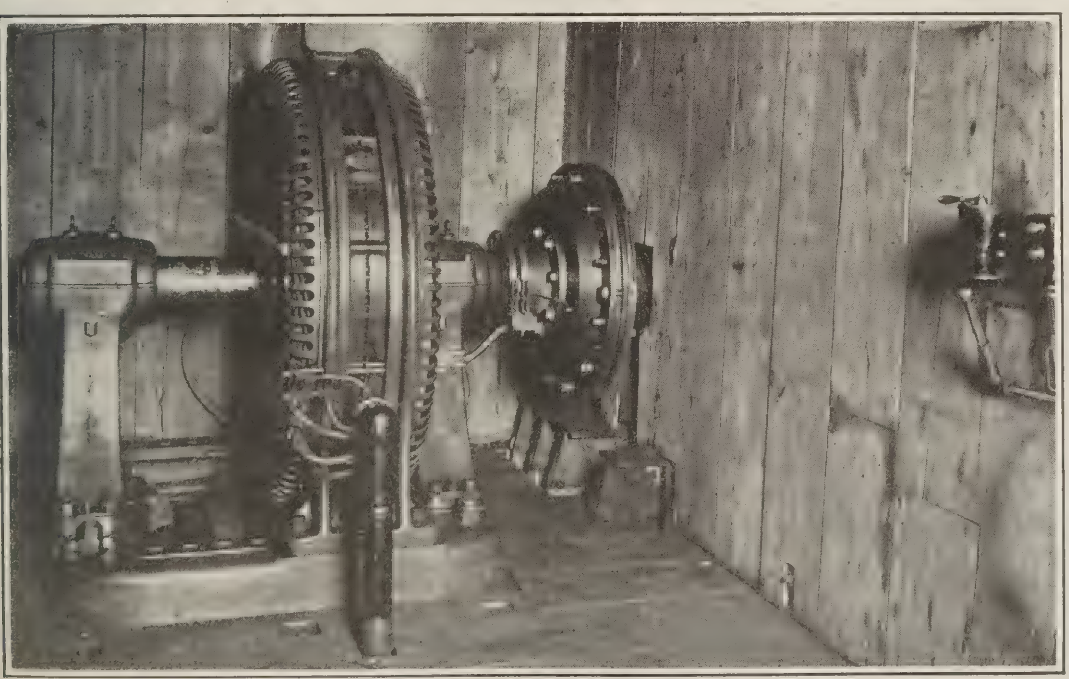
When a breaker is electrically driven the difficulty of operating at a good power factor always presents a serious problem. Heretofore induction type motors have been most generally used and often little or nothing has been done to counterbalance the high reactive currents which they necessitate. Relatively high efficiency at slow speeds is another advantage obtained by synchronous motors. Induction motors frequently require double-reduction gearing so as to permit the use of slow-speed apparatus.

No other device has contributed more to the successful application of synchronous motors than the mechanical or magnetic clutch. At this breaker magnetic clutches are used with the synchronous motors. They were selected because of their ruggedness, ease of control and safety. This type of clutch consists of two parts, one contains a magnet coil and the other a spring plate. When electric power is applied to the coil the second member is pulled into contact with the first. Thereafter, the friction between the two surfaces, which are held in contact with each other by the magnetic pull of the energized coil, grips the two parts together and prevents slippage.

### Low Full-Load Speed

It will be noted from the data of the motors that their full-load speed is unusually low. This fact, together with the smooth operation of the clutch, enables the loads to be started without jerk or sudden strain. By limiting the current supplied to the magnet coil of the clutch slow speeds and short movements of pulleys can be obtained at any time, especially when replacing ropes or belts. Dash-pot and magnetic timing devices govern the acceleration of the induction motors used to drive the coal-cleaning system, conveyors, pumps, etc., located in the breaker.

Another advantage obtained by the use of electric



**Inching Is Easy**

On the wall near each of the synchronous motors, a control switch is located to vary the magnetic field of the clutch and thus enable the workmen to turn the machinery short distances at slow speeds.

drives in this breaker is the safety with which the equipment can be operated. All machinery can be started from points where the workmen have full view of the apparatus. By merely pushing a control button any group of machines can be started or stopped without delay. Emergency stops can be made from several conveniently located stations.

High efficiency, good speed control, safety and satisfactory power factor have contributed in a large measure to the success of this breaker. The usual stresses and strains which most machinery is subjected to are almost entirely eliminated and breakage of parts is below normal.

Apparatus at this breaker rarely, if ever, creates high peak loads on the power company's lines because the synchronous motors, which are the largest units employed, start their loads slowly. Incidentally, the power company serving this mine has a clause in its schedule which penalizes consumers for highly fluctuating loads. Instantaneous peak demands, under this schedule are expensive because they constitute a factor which raises the 15-min. maximum demand upon which a part of the power bill is based.

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# Does Scour Explain Why Gunite Clings Tight to Rock?

### That Blast Removes Oxidized Surface and Enables the Cementing Material to React with the Raw Rock Face, Is Theory Advanced

**By J. Drummond Paton**
Consulting Engineer, Manchester, England

THE EXCEPTIONAL strength of gunite concrete and the unusual results obtained with a cement projector has forced me to look for reasons, other than density, to explain these effects.

Doubtless the particles of material in flight from the nozzle to the surface at which they are directed take up the usual "tadpole" formation and impinge with an "arrow-head" directness and action that causes the gaseous material to leave in a "tadpole tail" at the surface under treatment. This determines the assembly and growth of the structure formed. There is, however, still another action to be considered.

If we consider first principles even in the simplest of metal-joining operations—soldering—the first requirement for success is a clean surface on which the "flux" used to produce the amalgamation effect can operate directly. Such a surface may be described as a "nascent" surface with which flux not only can come in contact but with which it can even react. Just as an elemental atom when liberated appears to have ability to combine with other atoms, that atoms long free do not have, so these surfaces freshly made appear to be more ready to react with other materials than surfaces that have been long exposed.

## Passage Causes Cleaning

In the passage of the sand through the "gun" chambers there is much surface attrition or what one might term cleaning. It is probable therefore, that in passing from the storage hoppers to the nozzle the particles become burnished—i.e., nascent. If such particles were again submitted to air reactions alone their oxidation would commence, and the result would be an oxide film forming probably a highly insulating covering which would prevent a speedy reaction of the particles with others with which they might later come in contact.

Certain classes of rock are much more liable to this oxidation effect, and it would be interesting to establish results based on the time between the initial crushing of large stone to ⅛-in.-to-0-dust and its use by a cement projector at the point of deposition. This change in rock with time is well known to mining men who have to maintain tunnels and roads in coal mines.

In many instances after a tunnel has been driven, air penetrates the interstices in the laminae of carboniferous rocks with a rapidity that is discouraging and the effect it has of "slaking" the roof and causing large portions of it to fall is only too well known.

## Gunite Protects Rock

In other cases a form of efflorescence coats the face of a tunnel a few days after it is driven, with what is almost a protective dust, and the service which this dust gives to the rock suggests the value of gunite protection, the gunite acting in the same way as nature in coating, and thus defending the rock from the ravages of disintegration.

In a somewhat limited experience of concrete and its particular properties, I have found that it showed evidences of special strength under conditions throught by the unobservant to be entirely normal, for example: (a) At a granite quarry an excellent concrete is obtained on an 11:1 ratio. This material a few weeks later when used on a public contract work with the standard 4:2:1 conditions did not give any such evidences of unusual strength. (b) In a process for the manufacture of slabs, blocks, etc. the molds are pressed till the final volume is one-half of the bulk of the mold when first filled and before pressure is applied. The exceptionally high tensile strength attained, would be attributed possibly to the absence of voids. (c) In cases where cements are blended, where lime and silicate of soda are added or similar means of obtaining a strong concrete are adopted an unusually strong cementing material is obtained due to special cementitious properties attributed to the admixture.

## Observer Sets Forth Theory

I hold that the results are due: (a) To "nascent" surfaces characteristic of freshly crushed rock, which have not been allowed to oxidize sufficiently to insulate the surface from desirable cement reaction; (b) to the disruption of the rock and the production of "nascent surfaces" as much as to the density of the resultant concrete; (c) to the reactions that destroy the oxide insulation, merge the oxides in the eutectic and leave the nascent surface for adhesive reactions.

I can conceive a condition of aggregate where the surfaces are not integral to the core and where the coating adheres to the mass of material much as a walnut shell adheres to the core.

To test my theory, a rock of known characteristics may be taken that has been crushed to suitable aggregate size and exposed for one, two, three or four weeks to six months, and from that sample concrete test pieces may be prepared. Put the same parent rock fresh mined into a large crusher, then with the correct cement and water, crush the aggregate in the absence of air or under water, and eject into molds for comparative tests. The result will show whether the theory as to the value of nascent surfaces should be regarded as established or worthy only of rejection.

*Banning No. 2 mine of the Pittsburgh Coal Co. operating on 1917 wage basis*

# Efforts to Break Mine Union's Grip on Central Competitive Field Make Slow Progress

**By Sydney A. Hale**

Special Contributor, *Coal Age*,
New York City

THREE SEPARATE MOVEMENTS to break the grip of the United Mine Workers of America in the Central Competitive Field have been started within the past few months. Indiana; southern Ohio, particularly in the Pomeroy Bend district; and most recently, the Pittsburgh Coal Co. in western Pennsylvania have led the revolt. Indiana's attempt to avoid the penalties of the Jacksonville agreement has been through the medium of co-operative mines. Genuine co-operative mining, of course, has been tried off and on for years—generally on a very small scale. Many of the country banks are ventures of this type. The Indiana experiment which provoked the wrath of the union involved larger operating units. One mine which came under the ban was producing 1,100 tons a day.

The Indiana system began to attract attention early in the year when several mines in Knox County were "leased" to groups of miners and former subordinate officials of the operating companies that had been in control. The terms of one of these leases provided that the former operators (the lessors) sell sufficient coal to enable the lessees (the miners' group) to operate four days a week and to hoist at least 900 tons of coal a day. The sales agent of the lessors was to receive 10c. a ton for handling the coal. This particular lease is not cited as typical. Possibly no one lease could fulfill the specifications of a typical case as the arrangements offered full scope for the display of ingenuity. The core of the situation was that the arrangement, whatever, its terms, relieved the lessor operating company from the obligation to pay the union scale. That obligation presumably was passed on to the co-operative lessee organization or group. The lessor or his agent handled the coal, usually at whatever price he could obtain in the open market, and was compensated in sales commissions, royalties or depletion payments.

Although these co-operative mines ostensibly paid the union scale, in reality, so the United Mine Workers insisted, such was not the case. "An exhaustive examination of the financial and operating problems of each leased mine," declared an official circular to officers and members of District No. 11 (Indiana), warranted "the most severe condemnation of this system of mining. It appears that in many instances the owners of certain mining properties were unable to operate their mines in accordance with the agreed scale in District 11 and induced their employees to jointly take over the operating of the properties. The original owners thus are freed from any financial hazards and derive substantial revenue from the payment of royalties and commissions

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Third of a series of articles describing the changes in the labor status of the different bituminous coal producting districts of the United States in recent years. Preceding articles appeared in *Coal Age*, Sept. 24 and Oct. 1, 1925. Another article will appear in an early issue.

on the sale of coal by the lessees. In order to produce the coal at the low price required by the owners of the property, the lessees are obliged to pay their monthly deficits in production costs with money derived from the sale of stock or through assessments levied against the earnings of each employee."

The more common methods of keeping costs within the limits of selling prices, however, were increased efficiency and the contribution of free labor for deadwork. The specialization under which the process of coal extraction has become a multiplication of segregated tasks performed by different individuals was supplanted by an era of despecialization in which each man would labor full time at the work which came to his hand. Something approaching the system credited to Henry Ford when he took possession of the Detroit, Toledo & Ironton R.R. came into vogue. Mr. Ford, it was said, could see nothing incongruous in having a locomotive engineer who had completed his run finish out the eight hours for which he was paid by hustling baggage or sweeping off the station platform if necessary. The new mine lessees were apparently of the same mind.

### Less Day Labor Required

Under the co-operative system the fine distinctions so jealously guarded by union precept and practice were no longer recognized. As a result, in some cases one man was able to do the work for which previously two men had drawn pay. In others, the functions of certain of the maintenance men were absorbed by the coal diggers. An efficiency committee at one operation dispensed with the services of three of the five blacksmiths employed and warned the two who remained that the same fate awaited them if they proved unequal to the smithing needs of the mine.

The union followed up its condemnation of co-operative mining in Indiana with a threat to revoke the charters of local unions whose members persisted in co-operative activities. A temporary injunction against the enforcement of this order was dissolved, largely on jurisdictional grounds, and the movement collapsed. For the most part, the men who were willing—eager in many instances—to work under the co-operative arrangement before it was banned by the United Mine Workers and who did not decry protection by injunction refused to jeopardize their union standing when the organization was in a position to make discipline an issue. Nor did the operators as a whole show any great desire to pursue the experiment further in the face of the determined opposition of the union.

### Indiana Sticks to Union

As a matter of fact, the operating association that has been the direct contact between the individual producers and the union declined to countenance the co-operative idea. According to an official of that organization, the producer who wished to try out the co-operative scheme had to withdraw from membership in the operators' association. At no time has it been suggested that Indiana as a whole expressed any desire to throw over the union. Indeed, only a few weeks ago Phil H. Penna, secretary of the Indiana Bituminous Coal Operators' Association, in an address before the Rotary Club of Terre Haute, declared that his organization would stick to the Jacksonville agreement to the end.

Nevertheless, the action of the union in threatening the revocation of local charters makes it plain that the movement was not regarded lightly by the labor leaders. At its height about a dozen mines were involved, some of which had been reopened after long shutdowns. Their daily capacity aggregated several thousand tons, and they were loading coal at a time when only a few of the strongest shaft mines and the low-cost strip pits were operating—and the shaft-mine tonnage was being produced at a loss. Union spokesmen asked how it was possible for these co-operative mines to work and pay the Jacksonville scale if the lessors of such operations, with all their experience, could not do it. The implication, of course, was that the scale was not paid. But it is not impossible that the revelation of what could be accomplished in cost-cutting by speeding up and lopping off was equally distasteful to the labor organization.

### Co-operative Idea Spreads

The co-operative idea, however, was not confined to Indiana, although the injunction proceedings referred to threw such a spotlight on the situation in that state that it is easy to overlook the fact that the same problem has presented itself in other parts of the Central Competitive Field. The 1925 district convention of the United Mine Workers in Ohio held the growth of co-operative mining in that state so menacing to the existence of the union that it adopted a resolution providing that workers employed in co-operative mines would be barred from union membership unless union officials were permitted to check the leases under which such mines were operated, examine the books of the companies "and take such other steps as might be deemed necessary to maintain union working conditions."

Doubtless this pronouncement of the union attitude has had some restraining influence upon the growth of the co-operative movement in the Buckeye state. Nevertheless, there has been a number of smaller operations which have continued despite the unfriendly stand of the miners' organization. Individual tonnages and the number of men employed at individual operations are small, but the mines in question are tipple, or commercial, collieries and not the local country banks the product of which, except in seasons of unusual demand, cannot enter into the general stream of coal traffic.

### Ohio Miners' Organization Active

In southern Ohio, a canvass made several weeks ago showed about twenty-five of these four- to five-car capacity tipple mines working on the Hocking Valley Ry. and loading an average of 75 tons per mine daily and almost as many operations on the Toledo & Ohio Central and Zanesville & Western railroads combined, with a slightly lower daily average loading. Since that time, however, the state miners' organization has been more aggressive in its campaign against the co-operatives. It has succeeded in forcing the suspension of a number of smaller operations in the Nelsonville district by threatening the expulsion of members working at less than the Jacksonville scale.

Another reason, perhaps, why the fight on co-operative mining in Ohio has been less spectacular than in Indiana has been the open flaunting of the union by a few operators in the Pomeroy Bend district. These companies, except at one mine, have not resorted to any co-operative arrangement to resume operations, but have boldly reopened on the November, 1917, scale.

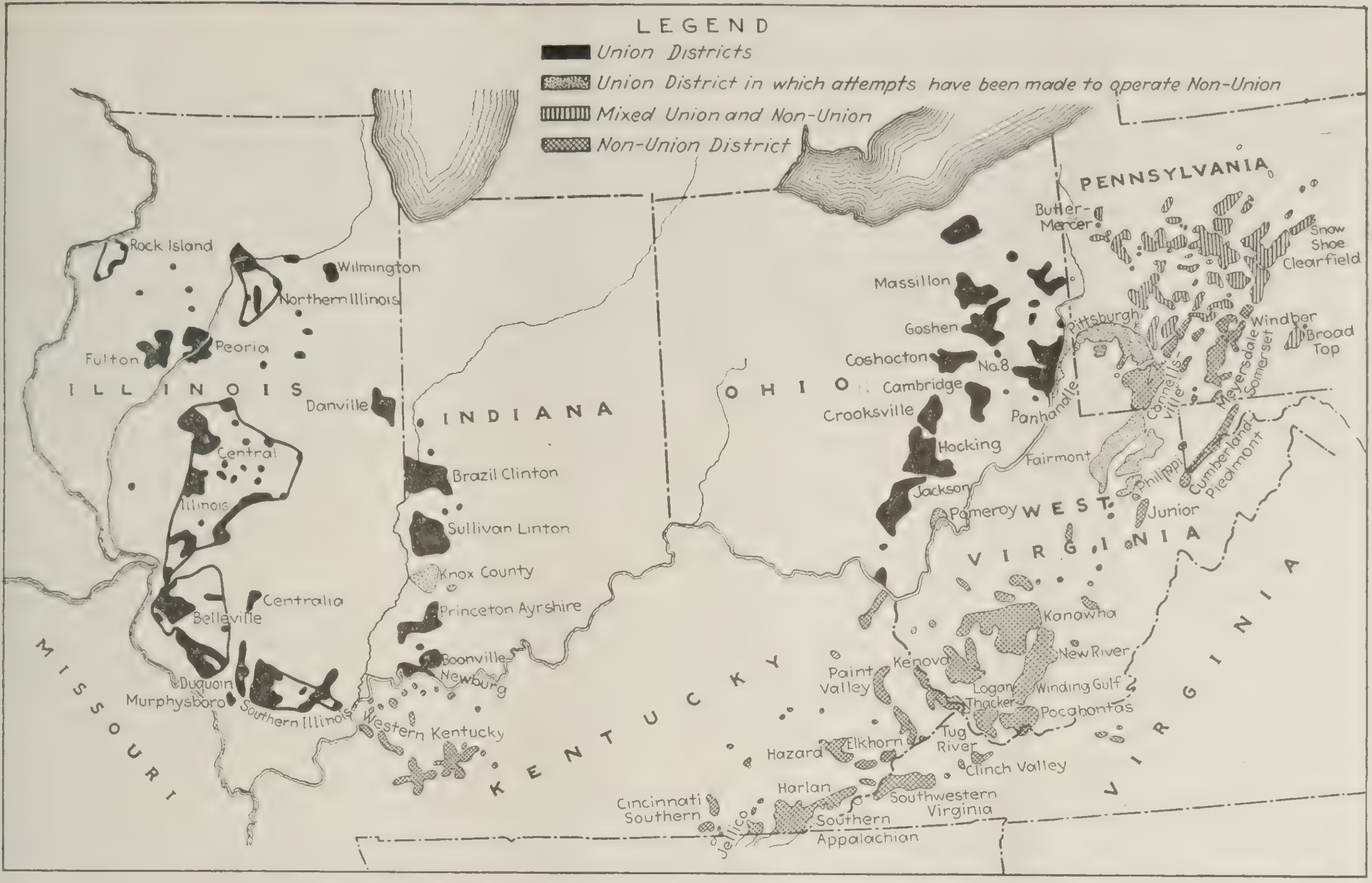


Fig. 7—The Central Competitive Field and Its Non-Union Rivals

The Central Competitive Field covers all of the coal producing area of Illinois, Indiana and Ohio. It also includes District No. 5 (western Pennsylvania), embracing not only the Pittsburgh, but the Butler-Mercer district. As related in the text, the solidity of union control was challenged in the Indiana co-operative movement and has been broken in the Pomeroy Bend district of Ohio and in western Pennsylvania. The economic reasons back of the struggle of Ohio and western Pennsylvania to shake off the union yoke can be visualized in the ring of semi-organized and openly non-union districts surrounding them.

This scale carries a basic day rate of $5, as compared with $7.50 under the Jacksonville contract, and knocks 24c. off the pick-mining rate. The posting of this scale, say the operators, was done after the miners had petitioned the companies to start up again.

### LEWIS CALLED TO CHECK REVOLT

The union considers this revolt so serious that John L. Lewis went into the Ohio fields to hold the workers to their union allegience by the power of a flood of defiant oratory. In this appeal, he reiterated his firm determination to insist that the Jacksonville agreement be recognized until the last minute of its term. How successful he was in checking the spread of the revolt cannot be told because nobody knows how many other members of the United Mine Workers in that part of Ohio were ready to accept the 1917 scale as the price of work.

Neither Mr. Lewis' vocal art nor the series of "accidents" which have befallen the Pomeroy Bend mines working on the 1917 scale, however, have been strong enough to force those particular operations back into the Jacksonville camp. Tipples have been burned, transportation facilities dynamited, power houses put out of commission, and the determined operators have rebuilt. Workers cut off from their connection with the United Mine Workers formed the Independent Mine Workers' Association, but have shown little interest in the substitute. The most recent reports available show for operations of the Pittsburgh Coal Co. at Dark Hollow, Forest Run, Syracuse and Thomas hoisting over 900 tons per day. The tipple of the Blackstone mine at Rutland—formerly known as Maynard No. 4—was burned on June 17, but reopened Aug. 20. The Stalter-Essex Co. also continued operations despite fires.

So fast had the movement spread that by the middle of August about 900 out of 1,800 men normally employed in the Pomeroy Bend district were working. More than half of this number (approximately 520) were working at the 1917 scale. A number of others were working on a co-operative basis. To say, therefore, that over 75 per cent of the men employed had abandoned the Jacksonville agreement is conservative. Since that time the quickening demand attributable to the disturbances in the anthracite region has enabled some mines which had been down for several months to make another attempt to run on the full union scale.

A record of the Pittsburgh Coal Co. operations in the Pomeroy field since the movement to operate at less than the Jacksonville scale started is shown in Table III.

### PITTSBURGH FALLS INTO LINE

The western Pennsylvania movement to operate on a cost-basis more nearly in line with that of directly competing fields is on all fours with the Pomeroy Bend experiment. It started on Aug. 20, when the Pittsburgh Coal Co., which on May 19 had closed down the last of its 54 mines which had been operating on the Jacksonville scale, reopened its Banning No. 2 mine, located 43 miles from Pittsburgh. On Aug. 24, the Boggs mine

### Table III—Record of Pittsburgh Coal Co. Operations

| Week Ended | Dark Hollow Men* | Dark Hollow Tons | Forest Run Men* | Forest Run Tons | Syracuse Men* | Syracuse Tons | Thomas Men* | Thomas Tons |
|---|---|---|---|---|---|---|---|---|
| May 9 | 73 | ..... | ... | ..... | ... | ..... | ... | ..... |
| 16 | 97 | 1,211 | ... | ..... | ... | ..... | ... | ..... |
| 23 | 118 | 1,987 | ... | ..... | ... | ..... | ... | ..... |
| 30 | 131 | 639 | 57 | ..... | ... | ..... | ... | ..... |
| June 6 | 144 | 2,652 | 75 | 685 | ... | ..... | ... | ..... |
| 13 | 153 | 3,237 | 85 | 1,062 | ... | ..... | ... | ..... |
| 20 | 156 | 3,428 | 95 | 1,115 | ... | ..... | 32 | ..... |
| 27 | 150 | 3,150 | 111 | 1,276 | ... | ..... | Fire | |
| July 4 | 134 | 2,212 | 117 | 1,436 | 47 | 464 | ... | ..... |
| 11 | 140 | 2,925 | 117 | 1,572 | 62 | 983 | ... | ..... |
| 18 | 146 | 3,163 | 119 | 1,588 | 80 | 1,182 | ... | ..... |
| 25 | 150 | 3,500 | 131 | 1,889 | 88 | 1,392 | ... | ..... |
| Aug. 1 | 149 | 2,814 | 129 | 1,960 | 103 | 1,701 | ... | ..... |
| 8 | 151 | 3,779 | 128 | 1,996 | 116 | 2,124 | ... | ..... |
| 15 | 149 | 3,437 | 129 | 2,004 | 119 | 2,127 | ... | ..... |
| 22 | 156 | 3,377 | 126 | 2,103 | 110 | 2,345 | 27 | 157 |
| 29 | 160 | 3,396 | 127 | 2,117 | 109 | 2,257 | 49 | 1,082 |
| Sept. 5 | 156 | 2,906 | 125 | 1,763 | 100 | 2,295 | 54 | 1,072 |
| 12 | 158 | 2,255 | 123 | 1,126 | 97 | 1,544 | 61 | 836 |

* Average number of workers per day.

of the Montour & Lake Erie Coal Co., near Imperial, started up, but a few days later operations were again suspended. The district organization of the United Mine Workers of America threw scores of pickets into the Banning area in an attempt to stop the resumption of work under the 1917 scale. Notwithstanding this effort, production rose from 75 tons on Aug. 22, the first day coal was loaded, to 715 tons on Sept. 18, and the number of employees increased from 24 the day the mine reopened to 210 on Sept. 18. The normal working force is 400.

### Movement Makes Slow Headway

On Sept. 15 the company reopened Banning No. 1 with 31 men at work. The next day the number increased to 37; on Sept. 17 it was 105 and on Sept. 18, the first day coal was loaded, it had gone to 141. The quantity of coal loaded was 143 tons.

The record for Banning No. 2 to Sept. 19 is set forth in Table IV.

### Table IV—Record for Banning No. 2 to Sept. 19

Output and Number of Men Working at Banning No. 2

| Date | Men | Tons | Date | Men | Tons |
|---|---|---|---|---|---|
| Aug. 20 | 24 | ... | Sept. 4 | 197 | 558 |
| 21 | 39 | ... | 5 | 202 | 547 |
| 22 | 66 | 75 | 8 | 204 | 502 |
| 24 | 89 | 137 | 9 | 222 | 647 |
| 25 | 110 | 139 | 10 | 214 | 679 |
| 26 | 128 | 219 | 11 | 222 | 653 |
| 27 | 129 | 297 | 12 | 215 | 723 |
| 28 | 168 | 427 | 14 | 210 | 623 |
| 29 | 155 | 493 | 15 | 211 | 651 |
| 31 | 155 | 408 | 16 | 209 | 577 |
| Sept. 1 | 152 | 484 | 17 | 205 | 715 |
| 2 | 168 | 565 | 18 | 210 | 715 |
| 3 | 173 | 516 | 19 | ... | 800 |

In addition to these open departures from the Jacksonville scale, it is freely charged that many operators ostensibly running union are not living up to the letter of the agreement. That deadwork is performed without proper compensation is a common accusation. In one case it was said that mines worked 8 hr. for 6-hr. pay; in another, that no fines or bugdust was loaded out; in still another, that an average reduction of 6c. per ton was effected through failure to charge extra for narrow work. These charges are denied in toto by the union representatives in the district. The charges are denied in some cases, evaded in others by the operators. Some producers, however, frankly confess that it is the inability to get these advantages, rather than any keen desire to keep the strict letter of the contract which holds them to the straight and narrow path of unqualified adherence to the terms of the Jacksonville agreement.

### Union Far from Licked

The United Mine Workers, according to the latest information available, has been completely successful in stamping out the rebellion against its power in Indiana. The labor organization has been able to hamper and check the co-operative movement in Ohio. Illinois, which was accused of supporting Pittsburgh and southern Ohio in the 1921-22 fight against the preservation of the Central Competitive Field as a wage-making unit, has been quiescent. There, as elsewhere, operators have been hoping against hope that the international officers of the mine workers' union would consent to a downward revision in the Jacksonville scale, but they have made no attempt to break with the organization for its refusal to entertain such a change. Illinois has felt the pincers of non-union competition less than the other three districts in the Central Competitive Field, but even in that state the pressure has been growing.

It is only in the Pomeroy Bend and the western Pennsylvania districts that the rebellion against union domination remains uncrushed. True, neither the tonnage nor the number of men so far involved is large enough to leave any impress on the market. District No. 5 of the United Mine Workers of America—the western Pennsylvania area—has a membership of approximately 45,000, of whom, according to union figures, 23,000 are now employed in the mines of the district—

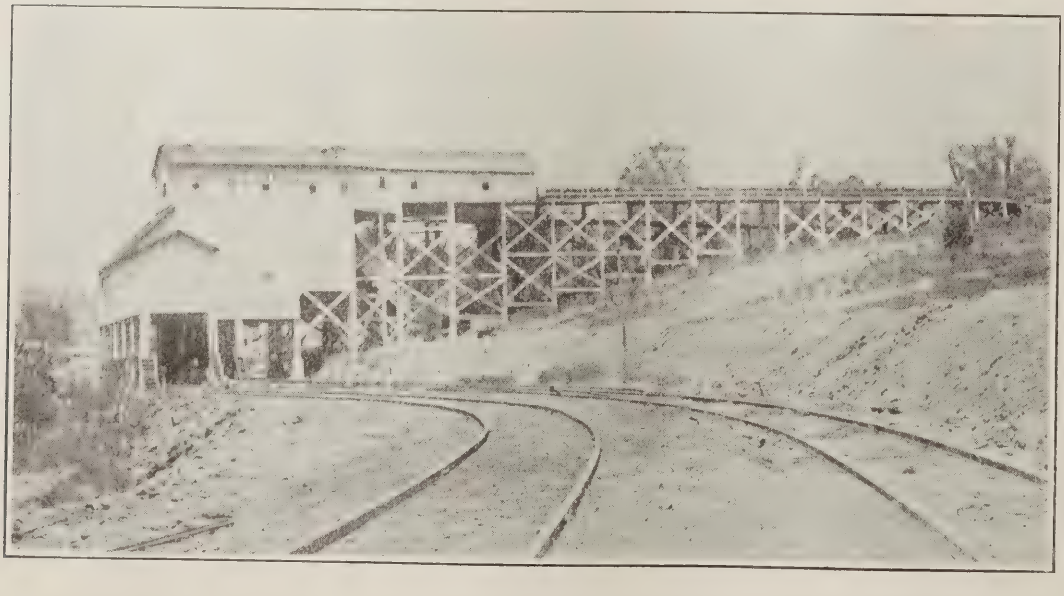


FIG. 8

**Holds the Line for 1917**

Mine No. 7 of the Stalter & Essex Coal Co. in the Pomeroy Bend district has been operating on the November, 1917, scale since May 27. It now employs over 200 men and loads approximately 1,200 tons a day. This is the largest average daily tonnage yet reached by any mine breaking away from the union in the Central Competitive Field.

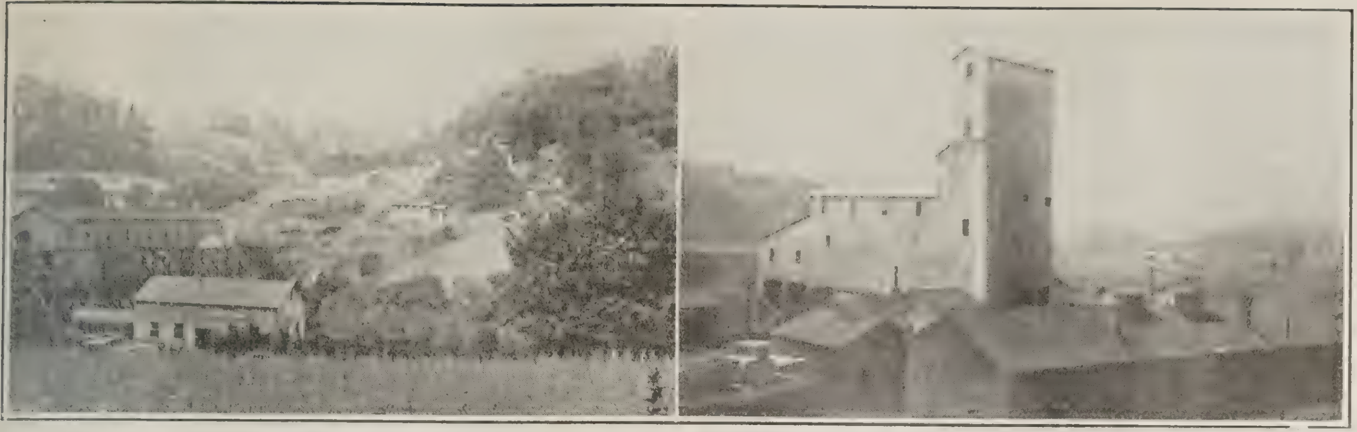


Fig. 9—Victims in the Struggle to Re-establish the 1917 Scale?

The warfare against the maintenance of the Jacksonville scale in the Central Competitive Field has not been without its casualties. Some of these have been recorded in the bankrupt courts, some in the files of insurance companies. The Stalter & Essex Coal Co. was a pioneer in reopening under the 1917 scale in the Pomeroy Bend district. Mine No. 5, shown on the left, was burned down before daylight on the morning of May 31. The tipple of mine No. 1, shown on the right, met a similar fate on Aug. 1. The tipple of No. 5 has since been rebuilt and the mine was reopened about two weeks ago with approximately 80 men at work and an initial tonnage of 300 tons. It has been working steadily since that time.

for the most part, on broken time. Less than 400 men have accepted the conditions of employment at the two Banning operations of the Pittsburgh Coal Co. The Pomeroy Bend group of mines are included in District No. 6. This district had a union membership of 48,000 at the peak of power in 1920; the most claimed for the 1917 scale and co-operative operations in the Pomeroy Bend area is less than 700. The combined totals in the two fields, when compared with union membership of over 220,000 in the Central Competitive Field as a whole, is pitiably insignificant.

If the number of men and the tonnages mined at the 1917 scale could be held at approximately their present figures, the union might close its eyes completely to the secession. Of course, both operators and miners recognize the impossibility of maintaining such a static condition. While today only one company has challenged the union in the Pittsburgh district, that company is one of the largest producers in the country. Back of it now stands the Pittsburgh Chamber of Commerce, convinced that the maintenance of the Jacksonville scale is spelling the doom of the coal industry in western Pennsylvania.

### PITTSBURGH COMPANY TAKES LEADERSHIP

The break with the union has been clear-cut, definite. Reliance is not placed on any boring-from-within process such as was tried by Myerscough and his fellows on the "International Progressive Mine Workers' Committee" in 1921, but in the frank recruiting of mine labor willing to abandon the shadow as well as the substance of United Mine Workers' control. To this end, the Chamber of Commerce has established a special department in charge of E. S. McCullough, former vice-president of the United Mine Workers and more recently labor commissioner for the Northern West Virginia Coal Operators' Association. His employment naturally has widened the breach. Neither the Pittsburgh Coal Co. nor the Pittsburgh Chamber of Commerce can now retire without a heavy loss of prestige.

The miners know this. The Addisonian sweetness with which labor leaders in Pittsburgh comment upon the venture is a pose which need deceive no one. If the movement gains further headway, it is most unlikely that the union will content itself with peaceful picketing and the sending of telegrams to Washington denouncing the Pittsburgh Coal Co. as a contract-breaker. The history of the recent past in the struggle of the union to hold what it has and to further enlarge its sphere of influence is against such a comfortable conclusion.

Up to the present time, the Pittsburgh Coal Co. has made its fight alone. But the other operators in the field are watching day to day developments closely. Some of the commercial mines still running realize that their ability to continue work under the Jacksonville scale is due to the fact that so many of their competitors in the district have suspended operations. Many of the latter group are growing restive. If it appears to them that the Pittsburgh Coal Co. stands a reasonable chance of making a financial and an operating success of its venture, they will attempt to follow its lead and cut loose from the United Mine Workers.

The success of the movement initiated by the Pittsburgh Coal Co. would mean the end of the United Mine Workers in western Pennsylvania—and the disruption would not stop there.

**Where Ford Coal Comes Out**

Drift mouth of the main haulage way, No. 4 mine, Fordson Coal Co., Stone, Ky. The Stone division is producing over 170,000 tons per month with but six of the nine mines in operation. Although the Fordson company is experimenting with loading machines, none are in use in the mines of this division. Of the total output of the Fordson Coal Co., only about half is consumed by the Ford industries.

# Southern Mining Co. Men Go Over Their Problems

## Discuss Mine Operating Questions in Third Annual Meeting with Manufacturers' Engineers at Williamsburg, Ky., Headquarters

By J. H. EDWARDS
Associate Editor of *Coal Age*

FEW, INDEED, were the Kentucky coal-producing companies able to "make their depreciation" during the past two years. The Southern Mining Co., with headquarters at Williamsburg, Ky., was one of the few. Some of the reasons for this were apparent during the third annual convention of the mining and electrical men of this company and its affiliations held at Williamsburg, Sept. 25 and 26. The four technical sessions and the get-together dinner brought out the facts that efficient personnel, up-to-date machinery and intelligent handling and maintenance of equipment combine in Southern service. But above them all is wide-awake interest.

Typifying the *esprit de corps* of his associates, F. A. Signer, electrical engineer, presided in a wheel chair over every session even though one leg was in a plaster cast and the other useless because of a sprained ankle. He had been hurt in a mine two weeks before.

More than sixty were in attendance. The coal company men were seated at tables and visiting engineers and salesmen along the "side lines" parallel to the tables. Chief electricians, mining engineers, and superintendents took part in the discussion, which, although it centered chiefly about problems of equipment maintenance and power cost, also included mining methods. On a wall blackboard near the chairman there was printed in large letters, "Our Slogan—Better Coal, Lower Cost."

The first subject, that of electrical department expenses, soon led to a discussion of the economical handling of supplies. L. A. Safriet, superintendent of the Gatliff Coal Co., which produces 1,200 tons per day, stated that by hiring a supply man to dispense material as needed, the supply expense was reduced 33 per cent. At the smaller mines where it hardly pays to keep a supply man, this work can be handled to advantage by the chief electrician. At one of the largest mines, that of the Southern Mining Co. at Balkan, Ky., G. L. Birch, chief electrician, buys and also distributes mechanical and electrical supplies.

Dirty tracks were cited as a likely cause for high power costs. At one of the mines the consumption dropped from 3.3 kw.-hr. per ton to 2.25 kw.-hr. per ton after the tracks were thoroughly cleaned. The importance of keeping one eye on the demand meter was indicated by an incident by which W. W. Troutman, chief electrician at the Golden Ash Coal Co., saved $120 on a power bill by getting into communication by phone with the power company, explaining that an accident in the mine a few minutes before had caused a high overload on the substation, running the demand meter to a figure far above normal maximum for that month.

As with most other subjects discussed, Mr. Signer, when taking up that of lubrication, called for a report from each chief electrician of his troubles and successes during the last year. These reports showed the general tendency to use higher quality lubricants, and to cut out the use of black oil entirely. The total cost of lubricants at the new operation of the Southern Mining Co. at Insull, Ky., during the period from October, 1924, to July, 1925, was 8 mills per ton.

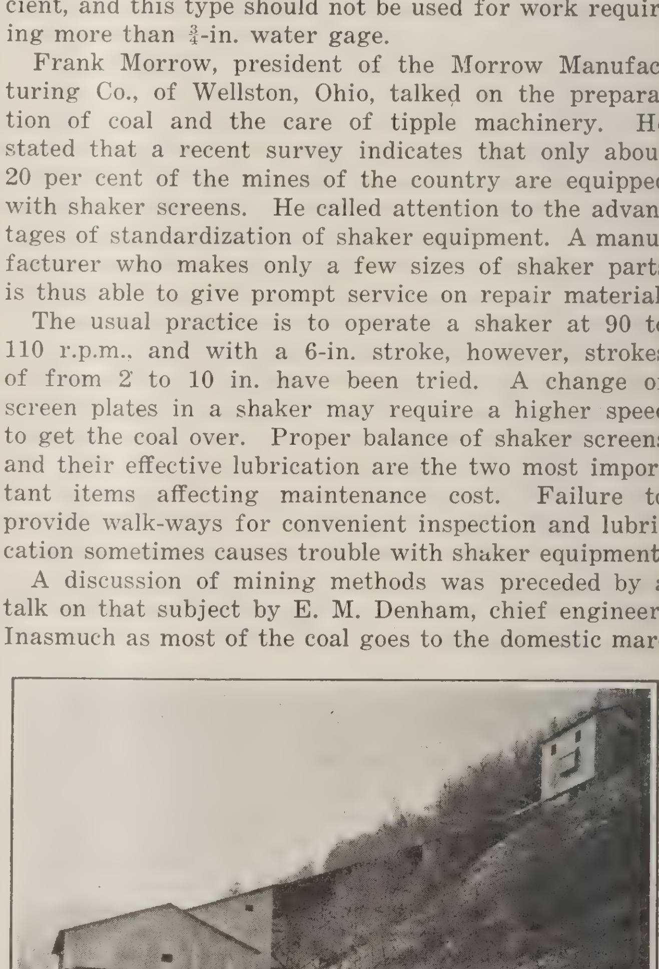
An excellent paper by T. W. Armstrong, general manager of the Fiskes Bros. Refining Co., on the production and "whys and wherefores" of good and poor lubricants was presented. The chief electricians then discussed their troubles with waste-packed bearings. It was brought out that the tendency for wool yarn to wrap around the journal can be overcome by using 15 to 20 per cent by weight of horse hair mixed with the yarn, instead of the usual 10 per cent. More time should be taken in packing a box. The yarn should be twisted into a loose rope and this worked back and forth in the box as it is put in.

Mine ventilation next came up for discussion. C. H. Trik, of the Jeffrey Manufacturing Co., read a convincing paper urging better airways in the mines and making plain the penalty in operating cost inflicted by cluttered air courses and by the use of inefficient fans. He explained the fallacy of depending on a water gage reading at the fan to indicate the condition of the airways. The anemometer is the only instrument which tells the true story. According to Mr. Trik, the best disk fans are not over 45 per cent efficient, and this type should not be used for work requiring more than ¾-in. water gage.

Frank Morrow, president of the Morrow Manufacturing Co., of Wellston, Ohio, talked on the preparation of coal and the care of tipple machinery. He stated that a recent survey indicates that only about 20 per cent of the mines of the country are equipped with shaker screens. He called attention to the advantages of standardization of shaker equipment. A manufacturer who makes only a few sizes of shaker parts is thus able to give prompt service on repair material.

The usual practice is to operate a shaker at 90 to 110 r.p.m., and with a 6-in. stroke, however, strokes of from 2 to 10 in. have been tried. A change of screen plates in a shaker may require a higher speed to get the coal over. Proper balance of shaker screens and their effective lubrication are the two most important items affecting maintenance cost. Failure to provide walk-ways for convenient inspection and lubrication sometimes causes trouble with shaker equipment.

A discussion of mining methods was preceded by a talk on that subject by E. M. Denham, chief engineer. Inasmuch as most of the coal goes to the domestic mar-



**One of the Southern Company's Tipples**

This is at the Perkins-Harlan Coal Co. mine, Ligett, Ky. The present daily producing capacity of this property is 800 tons.

**N. B. Perkins**

He is vice-president and general manager of the Southern Mining Co. and a chief official of several of the affiliated companies.

ket, percentage of lump dictates in many instances the method of mining. No loading machines are used, and most of the mines employ the room-and-pillar system. In one mine a modified longwall system which was being tried had to be abandoned because of the decrease in the percentage of lump.

Next in order Mr. Signer brought up the question of ordering repair parts. He emphasized the necessity of a small but well-selected and properly maintained repair stock, and called attention to the delays, mistakes, and high cost of ordering supplies by telephone or telegraph and shipping by express. E. L. Thomas, of the Sullivan Machinery Co., urged the chief electricians to use more care in specifying parts, giving the name, part number, catalog number, and the machine serial number. Mr. Davis, of the General Electric Co., described his company's new method of cataloging mine locomotive repair parts by photographs.

Steel terminal electric-welded bonds are standard at all mines of the companies represented at the meeting. Reports of tests on bonding at the various mines showed a marked improvement during the past year. In one mine every bond was found in perfect condition. In several others the showing was close to 100 per cent. Mr. Palmer, of the General Electric Co., described a four-weld bond which utilizes the angle bar as a part of the bond. A number of this type are now on trial at a Pennsylvania mine. The chief electricians reported excellent results with the new "A" and "B" electrode metals for welding cast iron and thin steel.

The discussion of mining machine troubles soon narrowed to the relative merits of the five- and seven-position chains for cutting coal which tends to "set down" and bind the cutterbar. W. J. Henry, of the Sullivan Machinery Co., explained that the ability to cut coal under such circumstances does not depend so much on the number of positions in the chain as it does upon the lacing. The seven-position chain with the old staggered lacing, which puts more bits in the top and bottom positions than does the V lacing, is best for the work because it will cut its way free. He recommended the use of sprags to hold up coal back of the machine, saying that one or two sprags to a place are sufficient.

Locomotive troubles proved to be an interesting subject. The loudest demand of the chief electricians was for a satisfactory puller for armature bearings. One man suggested the use of a looser fit of the inner race on the shaft, and a light key to hold this race from turning. Considerable trouble with broken pinions was reported on those locomotives equipped with electric braking, and operating on severe duty. Tool steel pinions are now getting a trial on this service. Many other electrical and mechanical matters also were discussed at the two-day meeting.

The companies represented at the conference have a total daily output of approximately 8,000 tons in Whitely, Bell and Harlan counties of Kentucky, working coal from 28 in. to 44 in. thick. In addition to the Southern Mining Co., which has mines at Balkan, Insull and Colmar, Ky., the affiliated group includes, the High Splint Coal Co., High Splint; Gatliff Coal Co., Gatliff; Perkins-Harlan Coal Co., Ligett; Perkins-Bowling Coal Corp., Anco; Golden Ash Coal Co., Kitts; Mahan-Ellison Coal Corp., Ligett, all of Kentucky, and the New Carryville Coal Co., Carryville, Tenn.

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# Roberts Tells Engineers Why Mechanical Cleaning Pays

### Declares Sizing Alone Has Limited Value—Ash Content of Small Coal Is Excessive Unless Mechanical Cleaning Is Employed

THE CLEANING of nut coal on picking tables is a useless process which should be eliminated under any condition at any mine. Hand picking should be confined to larger sizes; nut and slack should be cleaned mechanically. These points were among the many brought out by Col. Warren R. Roberts, president of the Roberts & Schaefer Co., of Chicago, in a talk on "The Value of Improved Preparation of Pittsburgh Coal," at the bi-monthly meeting of the Engineers' Society of Western Pennsylvania (Mining Section), in Pittsburgh on Sept. 29. N. F. Hopkins, consulting civil engineer, of Pittsburgh, presided.

Colonel Roberts did not confine his talk to the Pittsburgh coal seam alone. He intimated that the value of coal from practically all seams can be greatly increased by improved preparation. Without going into details as to how such preparation can be effected, he told his audience why such practice pays, substantiating his statements by some cost figures.

Delayed progress in better preparation of bituminous coal is natural, Colonel Roberts believes. The vastness of our coal resources and general distribution methods have made us wasteful. Progress has been slowed by the general indifference toward quality coal on the part of the consumer who, in the past, bought coal on price alone. A change in this respect is taking place. Large consumers are now beginning to buy on analysis.

Unfortunately, it is often the sales department rather than the operating department which has to force the issue for better preparation. The operating department is slow in getting into action and recommendations from the sales department for changes in methods of preparation are pigeonholed until the sales manager convinces the other officials that the company is losing its markets. Then action is taken in which the operating department assumes the lead. Thus, it is the attitude of the engineer which decides, in large measure, the degree to which preparation is to be carried out. The old-time operators could not see the advantage of new preparation methods as do their younger successors.

Aside from any premium which might be commanded from coals by reason of advanced preparation methods, the mine owner retains his old markets and gains new ones, according to Colonel Roberts. His coal properly prepared draws a premium over coal from an identical seam which gets only haphazard preparation. He saves rebates on rejected coal. As he corrects facilities for preparation other improvements throughout the plant become more obvious and many faults are remedied with the outlay of little additional capital.

In speaking of the value of clean coal to the nation, Colonel Roberts showed the country-wide saving in freight which the bituminous industry could effect by reducing the average ash content by 3 per cent. This saving based on a yearly consumption of half a billion tons at an average freight rate of two dollars would aggregate $30,000,000.

Sizing without cleaning, as so generally practiced in Illinois, has limited value, he said. An operating company in northern West Virginia, wanting to find out whether this is so, carefully sized a carload of 1x2-in. coal which was passed over a table and picked by ten men. This coal was shipped to a testing plant where it was dry-cleaned. Analyses before and after showed that the dry-cleaning process lowered the ash content by more than 9 per cent.

Another West Virginia operator shipped to this testing plant a car load of 2-in. screenings which was sized, sampled, dry-cleaned and again sampled, displaying the following results: Ash content in 2x1-in. size reduced from 18 per cent to 8 per cent by dry cleaning; 1x½-in. size reduced from 15 per cent to 7 per cent; ¼x$\frac{1}{16}$-in. size reduced from 9 per cent to 5 per cent. The fines analyzed 6 per cent ash and, therefore, were not cleaned. A sample of the car before cleaning analyzed 12 per cent ash. The cleaned sizes when remixed had an average ash content of 7 per cent. This test showed that sizing alone would not help this operator to sell his coal and that it was the low ash content of the fines which helped him to sell the smaller sizes mixed.

This operator is working the Pocahontas No. 3 seam. The roof in his mine breaks into fairly small sizes but does not crumble, accounting for the freedom of refuse in the fine coal and the high percentage of refuse in nut and pea sizes. He contemplated a dry cleaning plant and on inquiry learned that a plant handling 206 tons per hour, or 400,000 tons in a 200-day year, could be erected for $120,000. The cost per ton of cleaning was estimated at 9c., figuring $7,200 for annual interest, $16,800 for operating and maintenance per year and $12,000 depreciation per year (plant written off in 10 years). In the cleaning 5 per cent of the coal or 20c. per ton (slack at $2) would be lost. The total charge to cleaning, therefore, would be 29c.

His coal as smokeless mine run was selling in Cincinnati on Sept. 24 at $2.50 per ton. If this same coal had been cleaned to permit its respective sizes to stand on their own merit, the sizes would have yielded the following prices: Lump (20 per cent), $5; egg (15 per cent), $4.50; nut (40 per cent), $3; and slack (25 per cent), $2. The average realization per ton from this coal, when sized and cleaned, would have been $3.37. Deducting the 29c. charge per ton for cleaning, his realization per ton of cleaned and sized coal would have been $3.08 as compared with the mine-run price of $2.50, a margin of 58c., Colonel Roberts figures.

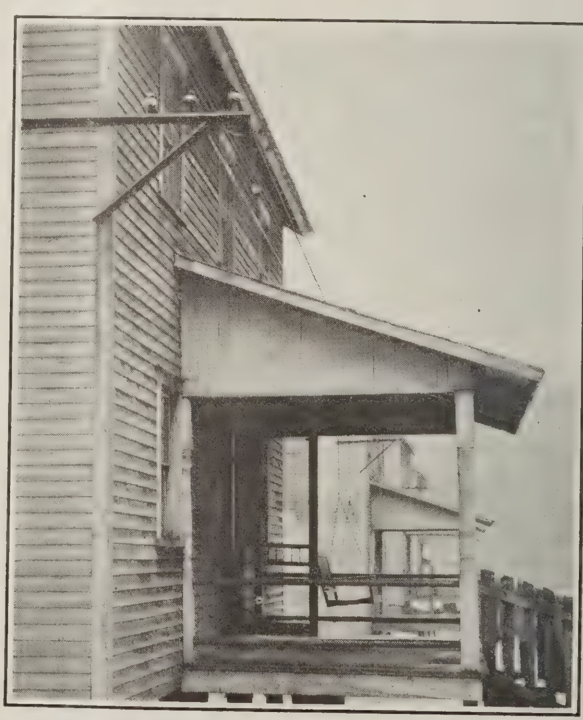
A brief discussion followed Colonel Roberts' talk. Graham Bright, consulting engineer, of Pittsburgh, emphasized the need of a uniform ash analysis of coal shipped from a plant. A uniform product will give a steady run to a mine and will, in most cases, enlarge its markets, giving lower production costs if not higher realization per ton. A uniform product cannot be obtained very well except by mechanical cleaning he thinks.

## House Brackets Displace Poles

After five to fifteen years of service wood cross-arms and wood poles begin to show signs of decay and unless they are given constant attention will present a rather unsightly appearance. Moreover, it is always difficult to keep small wood poles in proper alignment.

In certain streets of the town of Raleigh, W. Va., the Raleigh Coal & Coke Co. has taken out the original wood poles and placed the 110-volt secondary lighting circuits on steel brackets fastened to the houses. At first thought it might appear that this would hurt the appearance of the street. However, this construction is much neater than a line of poles in front of the houses with the necessary service lines to each house.

Conditions which make this method applicable on certain of the streets of Raleigh are that the houses are two-story, are of uniform design, and are built with the fronts on a straight line. It will be recognized that supporting the wires on brackets is much cheaper than supporting them on poles. Besides the saving in poles shorter service leads are used and maintenance is lowered.



**House Corner Serves as a Pole**

Formerly there was a pole line in the street in front of these houses. When the poles got into bad condition they were taken out and the line supported as shown for economy's sake.

# Coal Mining Men from Many States Talk at National Safety Council Meeting

By a Staff Correspondent

COAL MINE SAFETY received attention at the fourteenth annual congress of the National Safety Council held in four Cleveland, Ohio, hotels, Sept. 28 to Oct. 2. Mining men from a number of coal mining regions, and safety men from everywhere were in attendance discussing safety in industry and in the ordinary daily life of America. It was the Council's largest congress, indicating a growing importance of the organization. John Barton Payne, chairman of the central committee of the American Red Cross, at one of the meetings, said the Council's work is a bigger job than even that of the Red Cross. Rear Admiral Sims was one of the principal speakers at a general session. The Council elected as its new president, Charles B. Scott, of the Chicago Bureau of Safety. W. H. Cameron was re-elected managing director. B. C. Yates, general superintendent of the Homestake Mining Co., of Lead, S. D., was made chairman of the mining section for the coming year.

At the mining session of Tuesday under the chairmanship of R. Dawson Hall, two subjects, falls of roof and coal and "fear psychology," occupied attention, the debate being unusually active. E. A. Holbrook, dean of the School of Mines and Metallurgy, Pennsylvania State College, stated that much greater safety from falls of roof and coal might be attained if more shift bosses were employed. One engineer, he declared, had assured him that his own inquiries had led him to believe that if his company would appoint one shift boss to every twenty-five men the accident rate in his mines would so greatly decrease that greater economy in operation would result than was attained by having only one shift boss to about sixty men.

T. T. Read, safety service director of the U. S. Bureau of Mines, exhibited a chart showing that accident rates from all causes did not rise and fall with the rates for falls of roof and coal and that the latter rates did not correspond in any way with the production of coal per man per day.

### IS MORE TIMBERING THE CURE?

He stated that in Great Britain it had been found that the accidents from falls of roof and coal were more frequent where the roof was good than where it was bad, showing that the care under bad roof more than overcame its inherent danger. He deduced from that the idea that more timbering would be no cure—a statement which, strange to say, was neither approved nor challenged.

Rush N. Hosler, supervisor of compensation rating for coal mines, Harrisburg, Pa., declared that closer supervision would do much to correct the evils arising from bad roof, and R. V. Ageton, safety engineer, Tri-State Lead and Zinc Ore Producers' Association, declared that in the lead and zinc mines of the Joplin district it had been found that only 20 per cent of the accidents from roof falls occurred during the seven summer months, the rest happening during the winter.

To Francis Feehan, U. S. Bureau of Mines, it seemed a small matter to obtain greater safety. If the manager of a mine would declare that accidents must be stopped, stopped they would be. If the order were firmly expressed it would be obeyed and it would not be necessary to "fire" many foremen or discharge many workmen. The will to safety, said Mr. Feehan, has not been sufficiently exhibited at many mines, and accidents continue.

**Charles B. Scott**

New president of the National Safety Council who has served as vice-president and treasurer. He is a pioneer safety man and is now director of the Bureau of Safety in Chicago.

The chairman took exception to the inferences likely to be drawn from E. A. Holbrook's statement that falls of roof and coal formed much the same percentage of the total accident rate in the United States and Great Britain. Seeing that the rate for all accidents in Great Britain per thousand men employed is far less than in the United States, the similarity in the percentage rate of all accidents in the two countries for accidents due to falls of roof and coal, exhibits the fact that the falls accident frequency is less in Great Britain than in the United States. Anyone, said the chairman, who knows the immobility of labor in Europe, the tendency of laboring men to live and to die in one single village, will be convinced that it is a great adventure that brings a man to America, often, in the past, without a dollar to sustain him during his search for work.

### AGGRESSIVE AND CHANCE TAKING

Such an immigrant is a chance taker. It must seem, to those who remain in Europe, that he takes a long chance. Such a man is likely to take big risks and to regard family ties more lightly than those who stay at home. That being so, by this process of selection the people of America, all of whom have come from Europe, have ever been of adventurous type and in the same manner the chance takers of Europe have been eliminated. All sorts of fatalities—as from drowning and even from suicide—have been more frequent in the United States than in European countries.

F. C. Gregory, resident engineer, U. S. Bureau of Mines, Duluth, Minn., said that every man engaged by the Phelps Dodge Corporation was always obliged at the time of his hiring to perform every mining operation under supervision once and was required to do the work according to the "Copper Queen methods" which were explained to him carefully. As a result the company believes it has greatly reduced its accidents while increasing the effectiveness of operation.

The manager of the industrial relations department of the Davis Coal & Coke Co., Thomas, W. Va., C. A. MacDowell, declared that his company had established the rule that every man in its employ should have training in first aid from the U. S. Bureau of Mines, thus reducing the severity of accident and any man who violates safety rules gets a little note in his pay envelope—a hazard card—calling attention to his dereliction of duty. It is noted that the men are quite anxious not to find any such cards in their pay envelopes.

At the Wednesday session J. J. Forbes gave a brief outline of Daniel Harrington's paper on "The First Year of Utah's Drastic Coal Mine Regulation" regarding which the discussion was quite brief. Mr. Read remarked, however, that some question had arisen as to the constitutionality of attempts to delegate the legislature's powers to commissions. However, he added, no one had seen fit to test the legality of the Utah Industrial Commission's order, and, moreover, should it be tested it would probably be found within the fundamental law of the state and nation, the Industrial Commission having been given powers similar to those entrusted and used by state health boards. The latter have been found constitutional. Mr. Read declared that he believed that the legislature was not fitted to pass on a bill full of technical details such as a mining bill must be, nor was it advisable to leave such matters to a legislature which by its very nature must proceed slowly and might be out of session when action was greatly needed.

The conduct and value of mine rescue stations was the subject of a paper by K. T. Sparks, safety engineer, Central Mine Rescue Station, Wallace, Idaho.

### SEARCHLIGHT IS INDISPENSABLE

Responding to Mr. Read's query as to the value of searchlights in rescue work, Mr. Boardman declared that, in working in low places or amid fallen rock and in the presence of smoke from a fire, the searchlight was indispensable, as cap lamps are utterly unequal to the work, their light being adequate only in reasonably fresh air.

"An advanced course in fire fighting and rescue work" was Mr. Gregory's characterization of mine-rescue maneuvers. He believed that fresh-air methods of training the men using apparatus failed to beget confidence. Even with gas-chamber training the men are "not under the nervous strain that accompanies a trip of greater distance in gas," but that is better than outdoor practice, at least.

"Ordinary training methods," said Mr. Gregory, "do not teach discipline, develop leadership or train the men to do unaccustomed work under normal conditions with a minimum of supervision."

To Mr. Gregory it seemed that the work of a rescueman was one not to be entrusted to any man just because he was someone who could be most readily spared. The fact that he was not an essential part of the mine personnel, or could be readily replaced, was usually a poor recommendation for him. Careful and thoughtful selection should be expended on the men for the job or the money spent on training will be wasted. The men should be given a thorough medical examination by a physician, and their nervous reactions while wearing the apparatus should be carefully watched.

**C. L. Close**

A National Safety Council director. He heads the U. S. Steel Corporation's department of safety, sanitation and welfare.

The maneuvers described by Mr. Gregory were made in smoky but not irrespirable air. Much of the way the smoke was so thick that travel was by touch rather than by sight. In building canvas stoppings, however, nine teams traveled an average of 43 ft. vertically and 2,490 ft. horizontally in the smoke, carrying tools, canvas and light slats, but no heavy timber, built their stopping and were out in one hour and seven minutes. Hunting and bringing out a dummy took four teams an average of one hour and six minutes, during which the distances were 150 ft. vertical and 2,470 ft. horizontal. The rescue of a live man took an hour, and the team traveled 130 ft. vertically and 3,200 ft. horizontally.

The distances to be covered were purposely made long. In an irrespirable atmosphere the bureau recommends, said Mr. Gregory, that explorations under apparatus should not exceed 2,000 ft. for the round trip on a nearly level, unobstructed course with a height of 5 ft. or more and air clear enough that the vision of the rescue crews is not materially obscured. Exploration should never be undertaken on pitches exceeding 30 deg. unless there is reasonable assurance of saving life. These rules were not followed in this instance as the risks were eliminated and the purpose was to give confidence in the apparatus.

Mr. Forbes said that at one mine it was found that out of fourteen sets of apparatus only two were in condition and yet the apparatus was relatively new. Careful inspection was at all times necessary. The safety service of the U. S. Bureau of Mines was introducing an advanced course in mine rescue and fire fighting, the curriculum extending over five days and occupying 37 hours. At the Orient Central Rescue Station, Orient, Pa., fifty-eight men took this course.

It was expected that many men would drop out disheartened by the thoroughness with which the subject was covered, but fifty-seven men passed the examination.

The course deals with new equipment and practices. Instruction is given on gas analysis, pyrotannic methods of ascertaining the presence of carbon monoxide, self rescuers, all-service gas masks, barricades, their value and use, stoppings, lifelines, signals and surface-organization plans. Mr. Forbes said that long, dangerous trips in apparatus were not necessary and should be prevented. The fresh-air base can be moved forward so as to minimize the risk. He said that the Bureau had found that some canaries would outlast a man in carbon monoxide. He, therefore advised that three be carried by a rescue party in actual service instead of only one.

The two final days of the course were spent in actual maneuvers underground, the instructions to the men being marked on the stoppings in the mine, so that they found the work they had to do clearly indicated. The men entered into the sport of the occasion and relinquished the maneuvers only with regret.

### Fresh Air in Rescue Work

J. W. Reed said that not enough had been said as to the fresh-air end of rescue work, a matter that was most important. The bringing up of supplies, the furnishing of suitable headquarters, the inspection of rescue apparatus, the maintenance of communications, all these have much to do with successful rescue work. F. M. Correll declared, however, that there were too many men who preferred fresh-air work and some apparatus men when an emergency came were unwilling to make use of the training they had received.

At the close of Wednesday's session of the Council the following officials for the mining section were elected: B. C. Yates, general superintendent, Homestake Mining Co., Lead, S. D., chairman; B. F. Tillson, assistant superintendent, New Jersey Zinc Co., Franklin Furnace, N. J.; first vice-chairman, C. A. McDowell, Davis Coal & Coke Co., Thomas, W. Va., second vice-chairman; Robert E. Talley general manager, United Verde Copper Co., Jerome, Ariz., third vice-chairman; A. W. Dickinson, general superintendent, Union Pacific Coal Co., Rock Springs, Wyo., fourth vice-chairman; T. T. Read, safety service director, U. S. Bureau of Mines, Washington, D. C., secretary.

**W. H. Cameron**

Re-elected managing director of the National Safety Council at the Cleveland meeting.

**B. F. Tillson**

Chosen first vice-chairman of the National Safety Council's mining section for 1925-26. He is general superintendent of the New Jersey Zinc Co.

At the Thursday session A. W. Dickinson, general superintendent, Union Pacific Coal Co., not being present, Mr. Read briefly introduced his paper which detailed not only the ventilation practices but also the safety methods of the company. As the chairman pointed out, little was said in the paper as to the new fans which the Union Pacific is introducing wherever thereby the distance the air has to traverse can be greatly decreased.

For the most part the coal around Rock Springs is not of great depth and by taking advantage of the valleys it has been possible to construct shafts, not of excessive depth, that will do much to economize power, to increase ventilation and to shorten the distance which the germ-laden return air has to travel. In the old mines where the timber is highly infected with fungus, a shortening of its travel means a large saving in timber infection and a great reduction in the number of roof falls that have to be loaded out and timber sets that have to be removed. The new shafts also may be expected to aid in rescue work if any should have to be done.

Later the safety practices of the Cleveland-Cliffs Co. were described by William Conibear, safety engineer of that company. Mr. Conibear stated that his company intended to have the committees examine all accidents, whether trivial, serious or fatal. In many cases the triviality of an accident was due merely to chance, the accident had all the possibilities of being fatal and failed of that end only by a hair.

A. A. Bowden, safety engineer, of the Pickands Mather Co., objected to miners being allowed to close fire doors in case of a fire. He believed that as each mine has its characteristics the work of closing doors should, in general, be left to certain authorized persons.

In the final afternoon meeting a round-table discussion of the work of the section was held under the chairmanship of Mr. Yates. At the annual banquet, Cary R. Gray, president, Union Pacific R.R., was the principal speaker and the election of Mr. Scott president, and Mr. Cameron managing director, was announced.

# News Of the Industry

## Both Sides Seek Public Support As Hard-Coal Strike Drags On; Repeal of Certification Law Urged

The second month of the anthracite strike begins with neither operators nor union officials showing any signs of a willingness to recede from their respective positions. For the time being, at least, the conference chamber has been forsaken for the public forum and the daily newspapers in an attempt to capture popular support. The only known recent effort to bring the warring interests together again for a peace parley—that launched by the Scranton Chamber of Commerce—still suffers from malnutrition.

Spokesmen for the producers declare that, barring irresistible intervention, they are ready to hold out indefinitely to block increased prices to the consumer and to prevent a repetition of the present suspension. Union representatives are equally firm in announcing their unalterable opposition to the operators' proposals for arbitration.

If the producers' advertising campaign in the region papers designed to break down the solidarity of union allegiance has made any headway, that fact has not been dragged into the open. Personal appeals by the operators to industrial and political leaders in the anthracite region have led to some sharp exchanges of opinion in which several of the political heads, notably Mayor Durkan of Scranton, have expressed their sympathy with the union's claims.

### Extend Publicity Battle

During the past fortnight the battle of publicity has been waged in several sectors, including New York, Philadelphia, Boston, Buffalo and Coaldale, Pa. On Sept. 29, in New York City the Department of Industrial Relations of the National Civic Federation, under the leadership of V. Everitt Macy, heard the views of John Hays Hammond, chairman of the defunct U. S. Coal Commission; Adam Shortt, former chairman, Canadian Mediation Board; Matthew Woll, vice-president, American Federation of Labor, and William H. Taylor, president, St. Clair Coal Co.

Repeal of the Pennsylvania mine's certification law is the first step necessary toward a resumption of operations, declared Mr. Hammond, who denounced the strike as indefensible. The statute which requires a man to work two years as a contract miner's laborer before he is permitted to mine hard coal was characterized as discriminatory. There are many competent bituminous miners, asserted Mr. Hammond, who would be glad to accept the more regular employment in the anthracite fields.

"Furthermore," continued Mr. Hammond, "there is no doubt that many of the anthracite employees now on a vacation strike will be eager to return to work if the strike is long continued, and this despite the moral suasion of the leaders of the union. The fear of molestation in the different ways practiced at such times would undoubtedly deter many of them from returning. By the guarantee of the Commonwealth of Pennsylvania of immunity from interference the required complement of miners and other employees could be assured."

### Strike Indefensible: Hammond

Although Mr. Hammond was of the opinion that some anthracite workers "are underpaid and that there exist glaring inequalities in the payment of others, creating reasonable discontent," nevertheless he condemned the strike on the ground that "the grievances of either side could be redressed without adding to the cost of production, by following the recommendations of the Coal Commission."

The increases to the lower-paid workers and equalization of rates could be effected without increasing the price of coal, he intimated, if the miners would agree "to eliminate restriction of production, petty strikes and other unnecessary but costly annoyances to the company. "Certain it is," he declared a moment later, "that the demand for an increase of $1 per day for company men, with a flat increase of 10 per cent for tonnage miners and the check-off, is unreasonable."

Seizing upon statements of Mr. Hammond that certain mine workers were entitled to an increase and that some wholesalers and retailers profiteered, Mr. Woll attacked the preceding speaker for denouncing the strike and recommending the repeal of the miners' certification law. The main portion of Mr. Woll's remarks, however, were devoted to an impassioned attack upon government restraint and meddling with private business. He scored compulsory arbitration and political settlement of industrial disputes and pled for an amendment to the anti-trust act to permit freerer combinations in business. His misinterpretations of Mr. Hammond's statements drew the fire of Dr. Edward T. Devine, a fellow member of the U. S. Coal Commission.

Mr. Shortt described the workings of the Canadian mediation law. Mr. Taylor presented a "plan for final settlement of the questions involving the mining, shipment and marketing of bituminous coals," advocating the compulsory closing down of enough mines to permit others operating 285 to 300 days to supply the fuel demands of the country. Owners or lessees of the mines closed down would be compensated for their idle investment in a tax included in the price of coal sold by operating mines.

On the evening of the same day the New York section of the A. I. M. E. heard E. W. Parker, director, Anthracite Bureau of Information; R. V. Norris, mining engineer; Roderick Stephens, Stephens Fuel Co.; F. R. Wadleigh, former Federal Fuel Distributor; C. T. Starr, chief, Bureau of National Resources, Chamber of Commerce of the United States, and C. Kemble Baldwin, Robins Conveying Belt Co., discuss the future of anthracite and the issues in the strike. There was general agreement that the public need have no fear of a fuel famine, although it might soon have to forego the use of anthracite.

### Must Use Substitute Fuels

Reserve stocks of the larger sizes now in the retail yards of the dealers in Greater New York, explained Mr. Stephens, would not last much beyond Oct. 15, pea stocks might hold out a month longer and the first of the year would see the end of the supply of No. 1 buckwheat. Byproduct coke, the next most acceptable fuel in this territory, could not meet all the demands that might be made upon it, but that fuel, plus a liberal run of low-volatile bituminous, supplemented, if need be, by high-volatile coal, would see the consumer through.

Mr. Baldwin brought a more cheering word as to the development of byproduct coke production. Mr. Starr pointed out that New England, the section from which demands for government interference usually came first, was in an unusually comfortable position. On Sept. 1 domestic consumers had approximately 50 per cent of their normal supply of hard coal in their bins and retail yards were carrying enough coal to cover 33⅓ per cent of the requirements.

Speaking at a celebration at Coaldale on Oct. 1, John L. Lewis expressed himself as satisfied with the progress of the strike and again turned his oratorical guns on Mr. Hammond for the latter's attack on the miners' certification law.

## Safety Methods Discussed at Pittsburgh Institute

At the meeting of the Pittsburgh Coal Mining Institute, Oct. 3, J. J. Forbes, of the Safety Service of the U. S. Bureau of Mines, addressed the meeting on the work in which he was engaged. The bureau is giving a sort of extension course of five days' duration. Mr. Forbes delivered himself regarding the menu of the course but also gave some of the meat. He said that at one mine safety lamps perfectly assembled flashed when tested in gas.

Someone struck a match on the gauze of one of them. That lamp flashed when put lighted into gas, and the secret was solved. The firebosses had been using the gauzes of their lamps for the striking of matches, and enough phosphorus had been left in the meshes to convey the flame. A mine in the West was exploded by a disassembled safety lamp and another by a doubled gauze. Safety lamps, said Mr. Forbes, are safe only if proper care is taken of them.

Of 2,900 men killed in several explosions 1,500 had died of burns and violence and 1,400 of carbon-monoxide poisoning. The self-rescuer would have saved all these latter men.

The Bureau of Mines has approved these self-rescuers for one-half-hour service. If but one man ever comes out with a self-rescuer the idea will go over strongly, but meantime the device, which could be made of immense value, is practically unknown, said Mr. Forbes.

R. Dawson Hall, engineering editor of *Coal Age*, followed with an account of the Rocky Mountain Coal Mining Institute's meeting at Price and of the sessions of the Mining Section of the National Safety Council. This was followed by a question box with safety in pillar drawing a leading feature.

## Vancouver Island Teams In Safety Meet

The Crows Nest Pass Coal Co.'s Coal Creek team won the mine-rescue contest at the tenth annual field day of the Vancouver Island Mine Safety Association, held Sept. 7 on the Central Sports Grounds, Nanaimo, B. C. The winners, captained by John Caufield, had a score of 98.4 per cent. The Ladysmith team of the Canadian Collieries Co. (George Carson, captain) was second, with 92.4 per cent; Cumberland No. 1 third, with 91.6, and Cumberland No. 2 fourth, with 91 per cent.

The British Columbia Department of Mines cup for first aid was won by the Granby company's Cassidy team (A. McLauchlan, captain); second, Canadian Collieries Ladysmith team (G. Carson, captain). The latter team was composed of a father and his four sons. Cumberland team of the Canadian Collieries, captained by W. Beveridge, captured the W. L. Coulson cup for first aid, with Captain D. Simpson's Nanaimo team runner-up.

The V. I. M. S. A. ladies' cup was won by Cumberland, led by Mrs. Hudson. Captain L. Wharton's team from Nanaimo won the Juvenile cup; C. Wharton's team from Nanaimo took the two-man event, and Beveridge and Waterfield, of Cumberland, carried off the one-man trophy.

William Sloan, Minister of Mines, distributed the prizes.

**John Hays Hammond**

The chairman of the defunct U. S. Coal Commission has again provoked the wrath of John L. Lewis by his denunciation of the Pennsylvania miners' certification law. The repeal of that statute, declared Mr. Hammond in an address before the Department of Industrial Relations of the National Civic Federation last week, is the first necessary step toward a resumption of mining in the anthracite field.

## Banning No. 2 Output Hits 1,000 Tons in Day

Miners at Banning No. 2 mine of the Pittsburgh Coal Co., Whitsett Junction, Pa., have reached a goal toward which they have aimed since the pit was reopened Aug. 20 at the November, 1917, wage scale. Their objective was a production of 1,000 tons a day, and on Saturday, Oct. 3, the 225 men working made a day's run of 1,188 tons. Total output for the week was 5,225 tons. Production for the week at Banning No. 1 mine, Van Meter, Pa., was 2,472 tons, with 165 men working. The aggregate output at the two mines of the company in the Youghiogheny Valley was 7,697 for the week.

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Shipping concerns are keenly interested in the forthcoming tests of pulverized coal as marine fuel which are to be carried out at the League Island Navy Yard, Philadelphia, under the joint supervision of the Navy Department, the Shipping Board and the Bureau of Mines. The Board has already authorized an appropriation for the purchase of 500 tons of coal to be used in the tests, during which several types of burners will be used in order to determine which of them is best adapted to merchant ship and Navy use. It is learned that one New York concern manufacturing a special type of burner has applied to the Shipping Board for the loan of a ship in which to give the burner a tryout with pulverized coal. The League Island tests are to begin as soon as the necessary appliances can be assembled.

## Triadelphia Mine Explosion Due to "Unknown Cause"

After a thorough investigation into the explosion in the Triadelphia (W. Va.) mine of the Elm Grove Mining Co., which claimed the lives of three workmen during the week ending Sept. 19, a coroner's jury on Sept. 24 failed to fix responsibility for the blast, the verdict being that it was due to "an unknown cause."

Two probable causes were given in the testimony of District Mine Inspector A. E. Lafferty. In his opinion the explosion could have been caused by sparks from a lighted cigarette or cigar alighting on the powder spilled from defective powder cans or by a spark from a defective trolley bell. It was shown that all of the cans had not exploded at once, which led the jury to believe that powder had been dropped from the cans to the floor of the motor trailer. The trolley bell introduced as evidence was burned by a high-powered electric current, small pieces having been torn away from the main insulating part of the bell.

Assistant Prosecuting Attorney Fred Brinkman was assisted by District Mine Inspector V. E. Sullivan, an assistant of R. M. Lambie, chief of the Department of Mines.

## $1,000,000 Coal Land Deal Closed in Ohio

Columbus, Ohio, Oct. 6.—The Hammerford Coal Co., being organized under Ohio laws, has purchased the stripping operations and coal acreage of the Kehota Mining Co. in Hocking and Perry counties at a consideration in excess of $1,000,000. The new corporation was formed by William S. Harman, of the W. S. Harman Coal Co., Columbus, and E. R. Meyer and John Winefordner, of Zanesville. The property just acquired consists of upward of 4,000 acres of coal lands, four miles of railroad, large stripping units and three tipples. The property is served by the Hocking Valley, Zanesville & Western and the Baltimore & Ohio railroads. The daily capacity is 3,000 tons.

## Big Muddy Hearing Starts

The government opened its hearing at the Federal Building, St. Louis. Oct. 1 for the purpose of getting facts and figures on the possible tonnage of coal that might be moved on the Big Muddy River from the Williamson and Franklin County (Ill.) field in the event that an appropriation of $5,000,000 asked for was obtained for making the Big Muddy navigable to a point about ten or fifteen miles above Murphysboro. Several witnesses were heard, but with the exception of W. K. Kavanaugh, of St. Louis, none had anything tangible to present or seemed to be familiar with the possibilities of river navigation.

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The Chicago & Northwestern Ry. has announced a reduction in coal rates from Hudson, Wyo., to Mitchell, S. D., giving a $4.70 rate on bituminous, a reduction of 64c.

### Deplores Delay in Printing Coal Commission Report

"With the mining of anthracite coal completely stopped, the delay in publishing the report of the late U. S. Coal Commission furnishes an object lesson in disservice to the public that is likely to have serious consequences when winter comes," declared Thomas L. Chadbourne, president of the American Association for Labor Legislation in a statement on Oct. 3.

Mr. Chadbourne says that during the negotiations between miners and operators which preceded the strike newspapers had called attention to the fact that the delay in publishing the coal commission's findings had deprived the President and the public of a "weapon" that might have been used to protect the consumers.

Mr. Chadbourne criticizes the delay as "unreasonable" and a blow at the principle that the work of a fact-finding commission is not completed until its full report of all the facts is published to guide law makers and the public.

### Bell Indicted on 14 Counts

John A. Bell, coal magnate and former president of the closed Carnegie Trust Co., Pittsburgh, Pa., is to be placed on trial at an early date for alleged irregularities in the financial affairs of the trust company. Bell was indicted Oct. 1 by the Grand Jury on fourteen counts, charging embezzlement of $1,161,995.64 of the funds of the institution, and District Attorney Gardner said the case probably would be called within a month or six weeks.

The indictments charge Bell with embezzlement and abstracting moneys and with making false entries on the books of the bank in connection with "withdrawals" by county officials and the Carnegie Coal Co., of which Bell formerly was president. A new development was a charge in the true bills that Bell had misappropriated nearly $200,000 more than was contained in the information on which he was arrested on Aug. 4.

### *Success Due to Hard Work, Not Luck, Says Hammond*

Defining "success" before the twelfth annual National Business Conference at Wellesley, Mass., Oct. 3, John Hays Hammond, chairman of the Harding Coal Commission, advised his hearers to get out of their minds that luck is the determining element of a successful career. "It is welcomed, but is not dependable," he said. "The real crop must be sown and reaped by the sweat of one's brow.

"There are many adventitious aids to success. For example, a pleasing address; this may seem a small consideration, but often it is a most important aid.

"It is likewise of advantage to be by nature a good mixer, not, however, an artificial kind of 'glad-hand artist,' who endeavors to win popularity by selfish purposes and at the sacrifice of principle and self-respect. Popularity of the latter kind is of short duration. The born good mixer is one who has tact, and tact comes from a kindly nature.

"What is inelegantly, but aptly, termed a 'grouch' is a very unfortunate obsession. Do not undermine your resolution, nor waste your energy in proclaiming that the 'time is out of joint' and that the world is going to the dogs. On the contrary, it is getting better and better every day."

### Northwestern Goes to Oil

The Chicago & Northwestern Ry. has decided to shift over all its locomotives on the Nebraska and South Dakota divisions to oil from Wyoming, calculating that this fuel will be cheaper than Illinois and Iowa coal produced under the Jacksonville wage scale. The Northwestern has coal mines in both states.

### Fair Price Coal Commission Revived in New York

The Fair Price Coal Commission established by Governor Smith of New York following the 1923 hard-coal strike has been revived. At the request of the Governor, Major General Charles W. Berry, N. Y. N. G., chairman of the local committee, has called together his former associate commissioners, Dr. Frank J. Monaghan, New York City Commissioner of Health, and George W. Eltz, commissioner, Coal Merchants Association, to determine upon procedure to be followed in handling any situation which may arise as the result of the present strike. In addition, the Governor has specifically requested the commission to investigate the status of the proposals to establish rates from West Virginia to New York and other northeastern points and to advise the Governor what action, if any, New York should take on the matter.

The state commission, of which Major General Berry is also head, met at the Hotel Biltmore on Oct. 5 to perfect its organization. Two vacancies were filled by the appointment, by the Governor, of W. C. Capes, Albany, secretary, State Mayors' Conference, and Major Charles B. Staats, president, New York State Coal Merchants' Association.

### Orders Lower Rates on Slack

Reductions in rates on slack coal from the Bevier (Mo.), Pittsburg (Kan.) and Henryetta (Okla.) districts to Superior, Neb., have been ordered by the Interstate Commerce Commission in its mimeographed decision in Nebraska Cement Co. vs. A. T. & S. F. Ry. Co. et al. The complainant alleged unreasonableness and a prejudicial relationship in favor of Omaha and Lincoln, Neb. The Commission found that the existing rates of $2.86 from Bevier, $2.55 from Pittsburg and $5.35 from Henryetta were unreasonable to the extent that they exceeded $2.25, $2.45 and $3.45 per ton.

## Production of Mining and Industrial Electric Locomotives In 1923, 1924 and 1925

| | Quarter Ending | | Six Months Ending June 30, 1925 | Quarter Ending | | | | Year Ending | |
|---|---|---|---|---|---|---|---|---|---|
| | March 31, 1925 | June 30, 1925 | | March 31, 1924 | June 30, 1924 | Sept. 30, 1924 | Dec. 31, 1924 | Dec. 31, 1924 | Dec. 31, 1923 |
| Number of locomotives shipped: | | | | | | | | | |
| Mining locomotives: | | | | | | | | | |
| Trolley type | 104 | 91 | 195 | 112 | 98 | 100 | 118 | 428 | 1,024 |
| Storage-battery type* | 47 | 29 | 76 | 28 | 36 | 41 | 35 | 140 | 249 |
| Total | 151 | 120 | 271 | 140 | 134 | 141 | 153 | 568 | 1,273 |
| Industrial locomotives: | | | | | | | | | |
| Trolley type | 4 | 4 | 8 | 19 | 9 | 3 | 10 | 41 | 10 |
| Storage-battery type* | 3 | 15 | 18 | 26 | 12 | 6 | 4 | 48 | 51 |
| Total | 7 | 19 | 26 | 45 | 21 | 9 | 14 | 89 | 61 |
| Grand total | 158 | 139 | 297 | 185 | 155 | 150 | 167 | 657 | 1,334 |
| Value of locomotives shipped: | | | | | | | | | |
| Mining locomotives: | | | | | | | | | |
| Trolley type | $487,638 | $436,352 | $925,990 | $554,950 | $486,493 | $488,407 | $545,871 | $2,075,721 | $4,628,981 |
| Storage-battery type | 163,275 | 90,089 | 253,374 | 90,974 | 124,396 | 145,598 | 122,701 | 483,669 | 833,369 |
| Total | $650,913 | $526,441 | $1,179,364 | $645,924 | $610,889 | $634,005 | $668,572 | $2,559,390 | $5,452,350 |
| Industrial locomotives: | | | | | | | | | |
| Trolley type | 31,480 | 35,178 | 66,658 | 147,139 | 150,112 | 14,570 | 162,560 | 474,381 | 60,942 |
| Storage-battery type* | 11,331 | 101,716 | 113,047 | 105,463 | 49,902 | 20,755 | 18,231 | 194,351 | 199,739 |
| Total | $42,811 | $136,894 | $179,705 | $252,602 | $200,014 | $35,325 | $180,791 | $668,732 | $260,681 |
| Grand total | $693,724 | $663,335 | $1,357,059 | $898,526 | $810,903 | $669,330 | $849,363 | $3,228,122 | $5,713,031 |

* The data for storage-battery locomotives has been revised to show only the value of the locomotives, exclusive of the value of batteries, charging equipment, and the like.

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This table was prepared by the Department of Commerce, Washington, D. C., from reports made by ten manufacturers who comprise practically the entire industry.

# Washington Notes Inconsistence In Lewis' Address at Fairmont; Hard-Coal Intervention Distant

**By Paul Wooton**
Washington Correspondent of *Coal Age*

Washington has not failed to note the inconsistency in the position of the United Mine Workers revealed in John L. Lewis' speech at Fairmont, W. Va., Sept. 26. In that address he urged the federal government to take a hand in the bituminous situation, where the union is weak, when at the same time his position is one of unflinching opposition to arbitration or public intervention in the anthracite situation, where the union is strong.

Mr. Lewis addressed a group of mine workers from the Fairmont district but his remarks really were intended for federal officials and union operators. The fact that the text of his speech was furnished the press in advance for release at the time of its delivery lends color to the view that it was intended primarily for other ears than those of the Fairmont miners. It is not customary for the union to issue mimeographed press releases to its own membership. Such an address as that delivered at Fairmont takes on all the characteristics of a speech from the throne.

### Would Force Federal Aid

The address is the most direct indication yet given by the union that it hopes to force the federal government to intervene in the protection of the Jacksonville agreement. There was no effort made to convey the point by inference, for Mr. Lewis said:

"The federal government has an obligation in the premises. The Jacksonville agreement was negotiated and executed with the aid and co-operation of high government officials. By the same token the industry has a right to expect that the moral influence and power of those same government officials will be utilized to preserve the integrity of the agreement and to maintain in the public weal the tranquility of the coal industry. There can be no misunderstanding or beclouding of the issues involved in this question. The mine workers simply ask that those coal operators who executed the three-year wage agreement with the United Mine Workers of America be compelled to live up to their contracts."

It even is said that the renewal of the strike call in West Virginia is designed to influence the federal government. In spite of these efforts it is apparent that federal intervention is more remote than before. The anthracite strike is more than a month old and none of the consumers has called upon the federal government for protection. New England, through its official spokesman, John Hays Hammond, chairman of the committee appointed by the governors of the states in that section, breathes confidence in its ability to take care of itself. Mr. Hammond not only expresses lack of fear for the winter but feels that sentiment among the anthracite workers is not strong for continuing the strike. He is quoted to the effect that many men already would return to work were they confident that police protection could be furnished.

About the last thing any administration would undertake is an attempt to enforce a labor contract. It has been suggested that before asking help from the federal government the union should make use of the means within its own reach. The Jacksonville agreement, as Mr. Lewis is fond of saying, is a contract in writing. If it is as binding on the Pittsburgh Coal Co., for instance, as he maintains it is, the contract should be enforceable at law. If the injury done is as serious as he alleges, it should be a proper subject for damages.

A review of court decisions will show many that uphold the side of labor. The Kansas Industrial Court decision is a recent reminder to labor that the courts are the same bulwark to its vested rights and contract guarantees as corporations have found them to be.

Mr. Lewis concluded his speech with this sentence: "It is the purpose of the organized mine workers to exercise their strength and influence to preserve the honor of their wage agreement and to demand that under its provisions fair treatment be accorded them."

Before this the union has exerted its "strength and influence" in the form of strikes. Does Mr. Lewis mean that if necessary to enforce the contract obligation he is preparing to call a general strike? Such as act, at least, is not disavowed in the Fairmont address.

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## Locomotive Fuel Costs Decline Slightly in July

The cost of coal used by Class 1 railroads in locomotives in transportation train service was slightly lower last July than during June, according to figures prepared by the Bureau of Coal Economics of the National Coal Association.

The average cost of the coal per net ton to the railroads, including any freight paid on it, in the Eastern district in July was $2.72; in the Southern district, $2.18; in the Western district, $3.01, and for the entire country, $2.68.

These averages are 1c. per ton lower for the Eastern and Southern districts than in June; 3c. per net ton lower for the Western district and 2c. for the entire country. Compared with July of a year ago there is a decrease in the averages of 31c. per net ton in the Eastern district; 30c. per ton in the Southern district; 23c. per ton in the Western district and 30c. for the whole country.

## *Retail Coal Reserves At New York Dwindle*

Reserve stocks of domestic anthracite in the yards of the retail coal merchants of Greater New York are rapidly dwindling, according to a careful canvass completed a few days ago. By Nov. 1, it is estimated, there will not be 1,000 tons of the sizes above pea—if the scant supply now on hand lasts that long. Pea will be among the missing by the middle of November or the first of December if the strike continues that long. Stocks of No. 1 buckwheat probably will hold out until the end of the year. The comforting side of the picture is that many consumers laid in full stocks before the suspension began.

New England's position is in marked contrast to that of New York. Approximately 50 per cent of the normal winter's supply was in the consumers' bins on Sept. 1. Retail yards at that time were carrying a supply sufficient to carry over for several weeks. It is estimated, therefore, that winter would be flirting with spring before there was a pinch in the Northeast.

There is no danger of freezing or even of discomfort, however, as the combined supplies of byproduct coke, low-volatile bituminous coal and high-volatile fuel will be more than sufficient to cover any requirements of the domestic consumer who has emulated the foolish virgin.

## Industrial Coal Stocks Gain

Industrial consumption of anthracite and bituminous coal in August was 22 per cent larger than during July, according to the monthly report of the National Association of Purchasing Agents. The August consumption in industry, exclusive of coal used in heating buildings, is estimated at 35,776,000 tons, as compared with the total of 29,300,000 used in July. This is the greatest estimated monthly consumption since January of this year. Coal stocks in industry were greatly increased during August in anticipation of the anthracite strike, the association reports. Industry on Sept. 1 had an estimated stock on hand of 54,487,000 tons of anthracite and bituminous combined, sufficient to last 46 days based on the daily consumption in August.

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The committee on waters of the Conservation Council of Pennsylvania has approved the tentative draft of an anti-stream pollution bill which the council proposes to have introduced in the Legislature of 1927. Changes providing for wilful stream pollution as a penal offense were agreed upon at a recent meeting of the committee at Harrisburg. After the bill has been rewritten in parts it will be sent to thirty-eight organizations affiliated with the council. Each of these will be asked to use its influence to have local legislative candidates agree to support the bill if they are elected.

# Blame Squirrels for Lower Output In Strike Region of West Virginia; Says Rockefeller Decries Abrogation

While the strike call issued by the United Mine Workers to non-union miners in northern West Virginia Sept. 25 cut down production somewhat last week, it was not a potent factor, according to coal operators. In the first four days of last week the non-union mines produced 6,088 cars, a decrease of 600 cars compared to the previous week, but part of the decrease was attributed by the producers to the lull over pay day and the opening of the squirrel season. A number of large producers assert that they did not lose a single miner by the strike. The union mines produced 1,105 cars of coal in four days.

Few coal operators take the strike very seriously, declaring that the union has lost out in northern West Virginia. The failure of the price of coal to come back has automatically killed them off, operators declare, and nothing short of a runaway market can breathe life into the organization.

The strike call seems to have affected the Monongahela Ry. mines the most, there being a drop of 301 cars in the first four days of last week compared to the corresponding period of the previous week. The Monongah division, B. & O., dropped off 251 cars.

### Non-Union Labor Shortage?

In a statement issued Oct. 2, Van A. Bittner said "there is a well founded rumor that John D. Rockfeller, Jr., who is one of the largest stockholders of the Consolidation Coal Co., is not in sympathy with the policy of that company in abrogating its agreement with the United Mine Workers." Bittner asserts that non-union operators are beginning to feel a real labor shortage and he predicts that it will become more acute as the weeks go by.

The union miners are putting forth another furious drive, holding scores of meetings in the field. Large meetings were held in Clarksburg and at Rivesville on Oct. 4. For almost a year quiet reigned at Brady, Monongalia County, and no gatherings were held there since the new miners' hall was dedicated more than a year ago, until Oct. 1, when another big gathering of striking miners along the Monongahela River front met and resolved to remain firm until the terms of the Baltimore agreement were agreed to by coal operators. The miners' officials say they will make further efforts to organize the Brady mine of the Brady-Warner Coal Corporation and the plants of the Clark Coal & Coke Co.

Fifty-three union miners were hailed into court Oct. 5 for violating an injunction granted to coal miners employed at New England Mine of the Consolidation Coal Co., which forbids picketing. Ignoring the injunction the union miners picketed a few hours before appearing in court.

A new stunt was pulled by the union miners in appearing without counsel, presuming that the court would appoint attorneys and the county would pay the bill. Judge Winfield Scott Meredith, in the Marion Circuit Court, did not do so, but thundered: "The orders of this court must be observed, if it takes the entire man power of the county, the state and nation to enforce them."

The miners say they are picketing in conformity with what Governor Gore has determined as legal picketing. It may require the greater portion of the week to dispose of the cases.

In a statement issued Oct 1 Bittner charges tampering with jurymen in connection with the trial of Milan Kreweski, a Grant Town miner, charged with being implicated in dynamiting the Wood's Run bridge of the Baltimore & Ohio R.R. on June 17. The trial was held in the Marion County Criminal Court, in Fairmont, last week. The jury failed to arrive at an agreement and the case will be retried later.

"I am confident," said Bittner, "that if any member of the United Mine Workers had attempted to tamper with jurymen during this or any other trial he would have been exposed, and rightfully so, and made to suffer the full penalty of the law. But I doubt if the gentlemen representing the Baltimore & Ohio R.R. who were attempting to tamper with jurors in this case, will ever be brought to trial for their unlawful acts or the facts in the case given to the people of West Virginia."

The union strike headquarters of the United Mine Workers of the Panhandle section has been removed from Wheeling to Sixth Sub District Ohio headquarters in Bellaire, Ohio.

## Whipple Team Triple Winner In New River Co. Meet

The sixth annual first-aid meet of New River Co. employees, held at Scarbro Ball Park, Scarbro, W. Va., Sept. 26, was one of the most successful in the history of the company. The Whipple team, David Bryce, captain, took first prize in the main contest, scoring 100 per cent in each of the three problems. The same team also won first prize as the neatest appearing team and in the best captain drill contest.

Second prize in the main event was awarded to the machine shop, which made 98 per cent and also won a prize as the second neatest appearing team on the field. In the main contest Scarbro and Mabscott tied for third place with 97.3 per cent. Scarbro won when a special problem was given to break the tie.

Six teams tied for first place in the artificial respiration contest, each having a score of 100 per cent. This contest was finally won by Prudence.

R. M. Lambie, chief of the West Virginia Department of Mines, introduced Dr. T. T. Read, chief of the safety department, U. S. Bureau of Mines, who presented the prizes to the winners.

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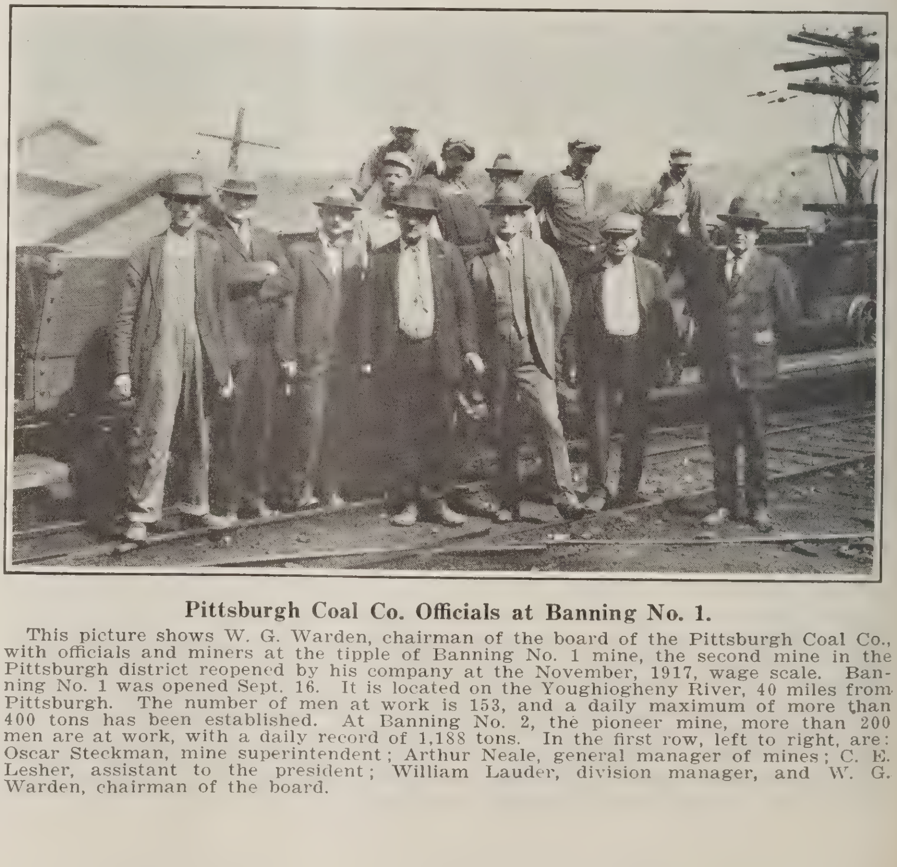
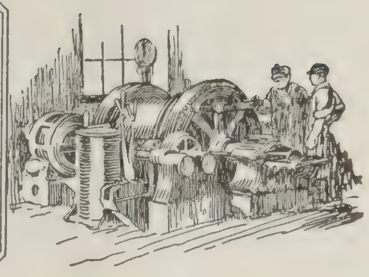
Latin America during the first six months of 1925 used more than 500,000 tons of bituminous coal exported through the ports on Hampton Roads, according to statistics compiled by the Hampton Roads Maritime Exchange and issued by the Virginia State Chamber of Commerce. The imports by countries follow: Argentina, 49,909 tons; Brazil, 323,856 tons; Canal Zone, 183,903 tons; Chile, 10,151 tons; Colombia, 1,269 tons; Guatemala, 2,519 tons; Mexico, 11,435 tons; Peru, 5,138 tons; Uruguay, 7,796 tons; Venezuela, 250 tons.



**Pittsburgh Coal Co. Officials at Banning No. 1.**

This picture shows W. G. Warden, chairman of the board of the Pittsburgh Coal Co., with officials and miners at the tipple of Banning No. 1 mine, the second mine in the Pittsburgh district reopened by his company at the November, 1917, wage scale. Banning No. 1 was opened Sept. 16. It is located on the Youghiogheny River, 40 miles from Pittsburgh. The number of men at work is 153, and a daily maximum of more than 400 tons has been established. At Banning No. 2, the pioneer mine, more than 200 men are at work, with a daily record of 1,188 tons. In the first row, left to right, are: Oscar Steckman, mine superintendent; Arthur Neale, general manager of mines; C. E. Lesher, assistant to the president; William Lauder, division manager, and W. G. Warden, chairman of the board.

# Practical Pointers For Electrical And Mechanical Men



## These Well-Designed Brake Shoes Do Not Grind Wheel Flange

Long experience in the use of carborundum or an equivalent abrasive as an agent in brake shoes for grinding down false flanges on tires on mine locomotives has enabled the Island Creek Coal Co. to get good results. In Fig. 1 are shown an end and an under-side view of the brake shoe. The end view shows that an unusually deep and wide channel on the brake shoe is provided. This channel is 2 in. deep and will accommodate the flange of a locomotive tire even after the latter is worn considerably. This feature of the design is such as to rob the shoe of the braking effectiveness of the channel area but at the same time it insures over-all rub on the tire tread.

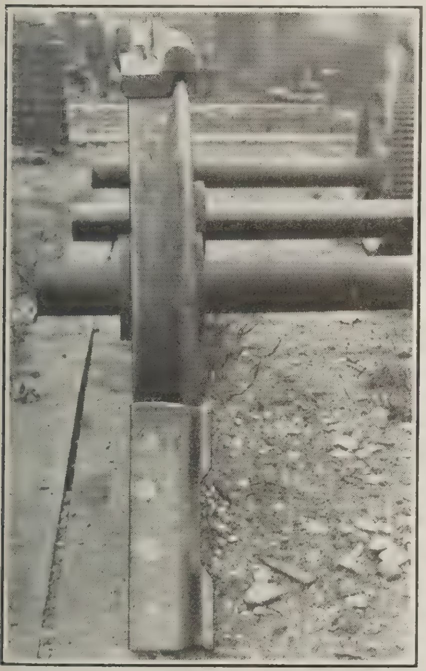


**Fig. 1—Abrasive-Lined Brake Shoe**

Here is shown the brake shoe designed by the Island Creek Coal Co. for the more effective use of abrasive inlays. The location of these inlays is shown in the underside view of the shoe leaning against the locomotive wheel. No attempt is made to use abrasive material for grinding down the flange of the tire. The end view of the shoe resting on top of the wheel shows how deep and wide the channel for the flange is made to accommodate the true flange even after the tire has been subjected to considerable wear.

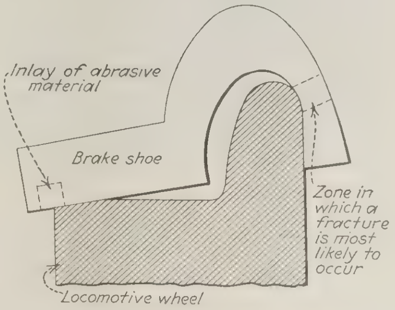

Inlay of abrasive material
Brake shoe
Zone in which a fracture is most likely to occur
Locomotive wheel

**Fig. 2—Effect of Improperly Setting Brake Shoe**

When a narrow and shallow channel is incorporated in the design of a brake shoe it rides in a tilted position, resting on two points. Excessive wear occurs on the outer rim of the channel, and in this part of the shoe a fracture will most readily develop.

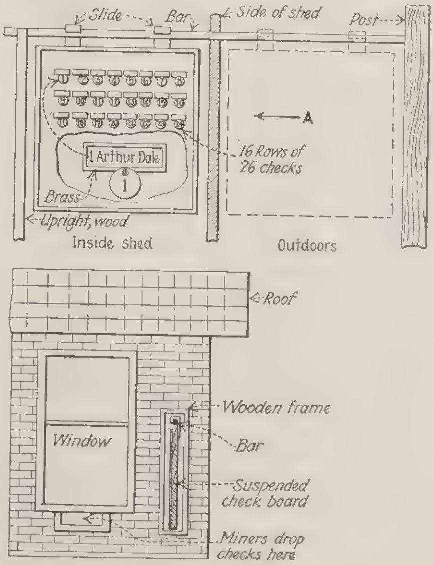
Many types of abrasive brake shoes are provided with shallow channels in which the flange of a tire rubs after the tread is worn only to a slight extent. The reason sometimes given for the adoption of this feature is that about 20 per cent of the braking power can be obtained by letting the flange of the tire rub in the channel of the shoe. But this is not true and the disadvantage of this provision is clearly shown by the simple sketch in Fig. 2.

The brake shoe rides on the flange of the tire as one point of support and on the outer side of the tread as the second point of support, leaving a part of the tread out of contact with the flat surface of the brake shoe. Because the shoe is tilted the flange of the tire in a short time wears through the outer rim of the channel. This wear occurs at the wrong point and necessitates frequent replacements of shoes. Consequently no advantage is derived from this old design.

The coal company has found that while inlays of abrasive material on the outer side of the brake shoe are effective in preventing the occurrence of false flanges—in fact so much so that this application is standard on practically all of its locomotives—yet it discourages the use of abrasive material in the channel of a brake shoe as a means to take off any increased height in the true flange. Shoes provided with inlays of abrasive material in the channel have been tried and have failed. The greatest trouble came from inopportune fracturing of the brake shoe along some part of the channel. Another disadvantage noted was unequal wear of the false flange and the true flange.

## Checkboard Loaded Indoors Slides Out for Men's Use

At the mine of the Gunn-Quealy Coal Co., Quealy P. O., Sweetwater, near Rock Springs, Wyo., is a checkboard mounted on a bar over which two hangers are passed which enable the board to be pushed through the side of the building into the open. Each man after leaving the mine deposits his identification check in a slotted box on the outside of the shed. The check is then hung on the appropriate hook. In the morning when the men go to work the board is pushed out, and each man



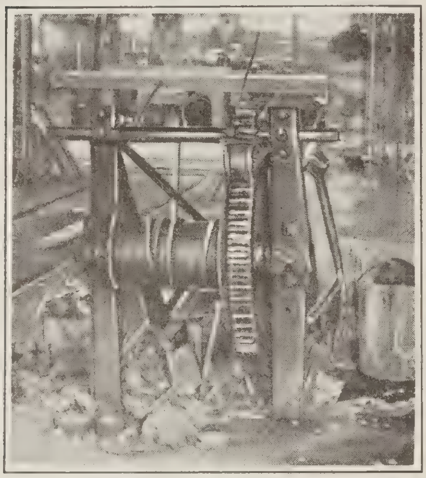
**This Check Plan Works Well**

The checkboard is slid out through the wall in the morning and each man takes his brass identification tag. In the evening the checks are dropped into the slot under the window.

takes his check and puts it in his pocket. In this manner is kept a record of who is in the mine and who has come out. The identification tag above the hook on which the check is hung contains not only the number but also the name of the holder of the check. As arranged, the board is convenient and orderly.

## A Light but Effective Home-Made Winch

For use about the mine, particularly in the shops, or for facilitating the construction or building work that the shop force is often called upon to perform, a small winch or crab is almost indispensable. The accompanying illustration shows a machine of this kind that forms part of the regular equipment in the No. 4 shops of the Kingston Coal Co., Kingston, Pa.

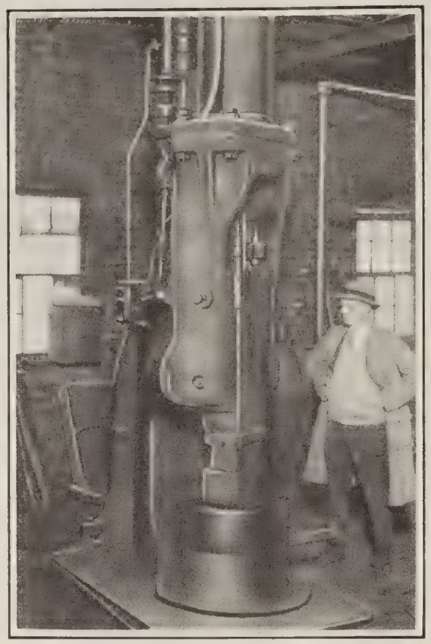


**Useful in the Shop and Elsewhere**

This little winch was built up from odds and ends by the shop force and has long been used by the car repair gang to lift mine cars or to turn them over. The pawl on this machine is particularly ingenious.

This machine is extremely simple in design, consisting of a triangular frame built up of old structural shapes chiefly angles, together with a necessary drum and a countershaft which is turned by means of cranks upon either end. In building up this winch, a suitable gear and pinion were first salvaged from the scrap heap. These were keyed to suitable shafts, mounted between bearings. The cable drum on this winch was turned from a piece of hard wood and mounted between flanges.

A suitable pawl to hold the drum in any desired position is attached to the pinion shaft. The end of this member is split and straddles the pinion, the split ends being bent around the shaft completely encircling it. The opposite end of this pawl is bent at such an angle that it may be dropped between the teeth of the drum shaft gear in which position it will hold the drum from turning in either direction. The bottom and the inclined edges of the triangular frame are suitably cross-braced with scrap iron holding the two parts rigidly together. As here mounted in the shop, the whole frame is bolted to the floor, but it might with equal facility be mounted on skids for ready transportation.



**Large Steam Hammer at Mine**

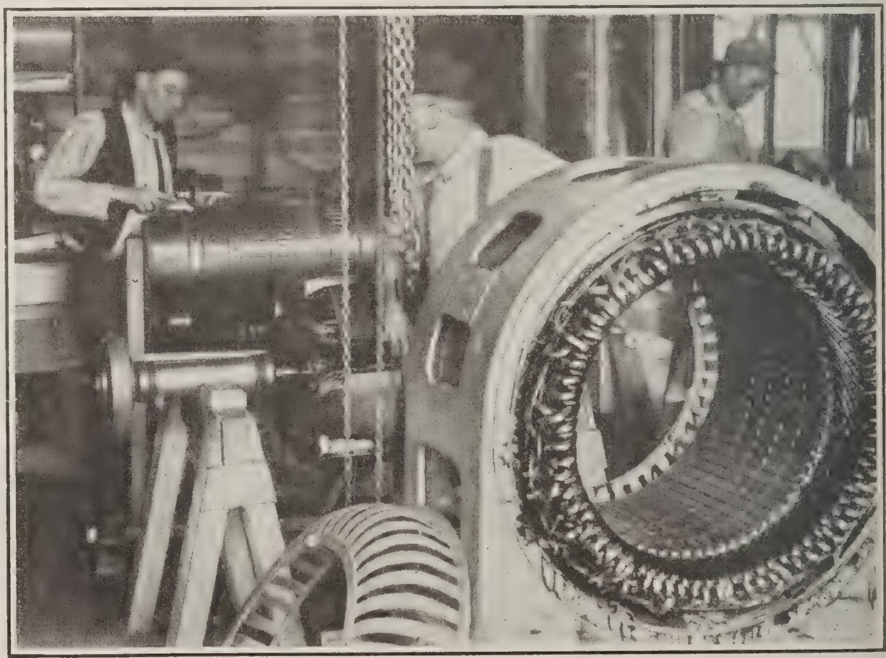
It is unusual to see a steam hammer of this size in use at a coal mine repair shop. No doubt this one at the Barrackville (W. Va.) mine of the Bethlehem Mines Corp., was transferred from one of the Bethlehem steel plants to the mine.

## Arresters of "M-G" Sets Need Close Attention

Synchronous converters seldom are damaged by lightning or by line surges due to other causes. This, however, does not hold true for motor-generator sets. The difference is explained by the fact that converters are protected by the transformers, which must necessarily be used between the machine and the line. A transformer has such a high reactance that the surges are reduced, ordinarily, to harmless intensity before reaching the converter. Moreover, the insulation to ground in a transformer is such as to withstand much higher potentials than can be withstood by the winding of a motor.

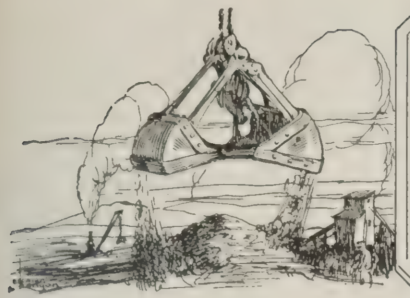
While it is important to protect a converter with arresters, it is more important to protect a motor-generator set. The very best type of arrester should be used and high-reactance choke coils installed on the machine side. Special attention should be given to the ground connection. If the substation is located on a dry, rocky ledge, the ground wire should be carried to some point where earth is always moist.

Next in importance is the protection of the ground wire from damage. A large wire should be used and this installed so that there will be little chance of mechanical injury. In addition, regular inspections, probably in April and July, should be made of the ground connections.



**A Rewind Job on a 225-Hp. 2,300-Volt Synchronous Motor**

In the foreground of the photograph, snapped in the repair shop of a large coal company, is the stator of a motor-generator set. Damage to motor-generator sets by lightning is too common. Closer attention to the arrester equipment would prevent much of this trouble.



# Production And the Market

## Increasing Softness Marks Soft-Coal Market; Anthracite Unresponsive to Strike

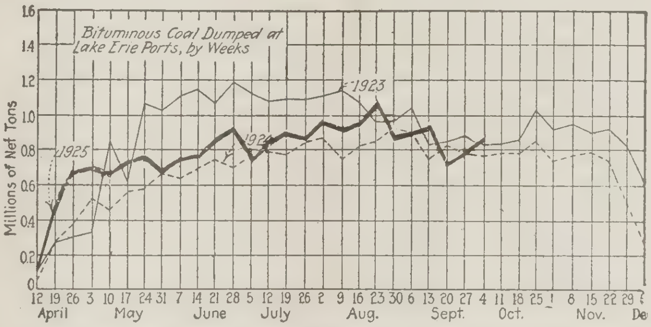
Precedent has been set at naught in the soft-coal market to the extent that despite the fact that production of anthracite has been at a standstill for more than five weeks, conditions in the trade give but slight indication of boom or runaway characteristics. On the contrary, the market has experienced and still feels the inevitable reaction that follows overplaying and hasty running up of prices such as were in evidence when the hard-coal suspension began. In haste to be on the "safe" side, large consumers and dealers alike stocked up generously and prices started to climb, but the promise of a rush market was short-lived as demand soon simmered down to normal proportions while idle mines began to resume operation and production mounted.

The tendency to softness in smokeless coal is still quite marked, prices showing a drop of 10c. to 15c. in some instances. Demand for practically all grades declined in the Midwest market last week, though prices remained fairly firm except for some shading to move tonnage. Screenings prices are unsatisfactory, however, consumers professing to be well fixed for supplies. More mines are resuming in Kentucky and the market held firm last week, the general demand for steam fuel being good. The sharp advance in prepared sizes of a few weeks ago has disappeared, however, due to keen competition and heavy output.

Cincinnati saw a buying flurry by lake shippers last week, more buyers being in evidence than at any time since spring. Slack is very active, but the domestic market suffers from adverse weather conditions. Business at the Head of the Lakes continues to improve and the same is true of Kansas. Trade in southern and eastern Ohio and at Pittsburgh is rather quiet. A slowing tendency prevails in New York and the other seaboard markets, especially in New England.

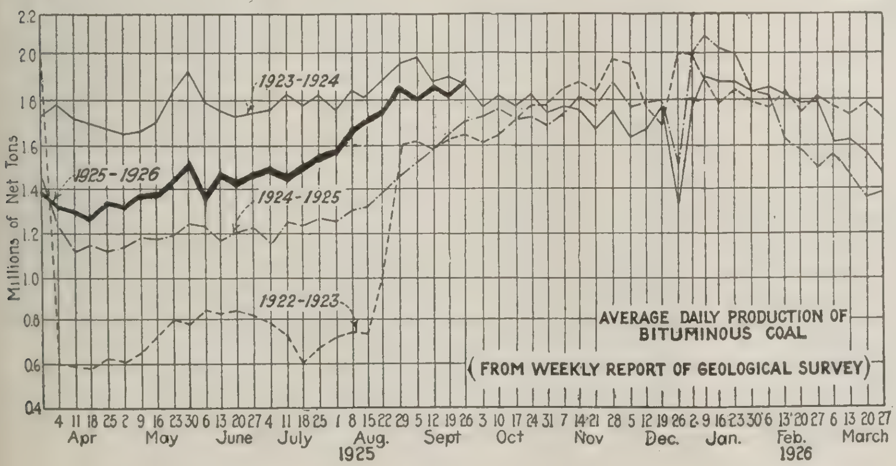
Regardless of the approach of colder weather, hard-coal consumers preserve an attitude of comparative indifference as the strike enters its sixth week. Stock coal largely makes up the offerings of wholesalers, the larger sizes being pretty well cleaned up. Stray cargoes of domestic sizes at New York bring $17.25 alongside for egg, $19 for chestnut and $20 for stove. Pea and buckwheat are still being shipped by the companies, one company having added 25c. to the price of pea and 10c. on buckwheat last week. Retail yards have fair stocks of domestic sizes, demand for stove being strongest.

Output of bituminous coal during the week ended Sept. 26 is estimated by the Geological Survey at 11,199,000 net tons, compared with 10,881,000 tons in the preceding week, as shown by revised figures. Anthracite production, presumably from dredges and small washeries, totaled 13,000 net tons.



*Coal Age* Index of spot prices of bituminous coal on Oct. 5 stood at 175, the corresponding price being $2.11.

Dumpings at Lake Erie ports during the week ended Oct. 4, according to the Ore & Coal Exchange, were: Cargo, 792,975 net tons; steamship fuel, 44,435 tons—a total of 837,410 net tons, compared with 789,617 tons in the preceding week. Hampton Roads dumpings during the week ended Oct. 1 totaled 458,996 net tons.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| Sept. 12 | 9,835,000 | 9,983,000 |
| Sept. 19 (*a*) | 10,156,000 | 10,881,000 |
| Sept. 26 (*b*) | 10,458,000 | 11,199,000 |
| Daily average | 1,743,000 | 1,867,000 |
| Cal. yr. to date | (*c*) 339,027,000 | 360,314,000 |
| Daily av. to date | 1,492,000 | 1,583,000 |
| **ANTHRACITE** | | |
| Sept. 12 | 1,820,000 | 5,000 |
| Sept. 19 | 1,851,000 | 9,000 |
| Sept. 26 | 1,942,000 | 13,000 |
| Cal. yr. to date | (*c*) 67,371,000 | 61,666,000 |
| **COKE** | | |
| Sept. 19 (*a*) | 122,000 | 171,000 |
| Sept. 26 (*b*) | 132,000 | 176,000 |
| Cal. yr. to date | (*c*) 7,380,000 | 7,090,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

## Midwest Demand Declines Sharply

The demand for practically all grades of coal fell off sharply in the Midwest market during the past week. As a fairly general rule, prices on the better grades and better known coals remained firm, but in some cases quotations were shaded materially in order to move the tonnage.

In southern Illinois the demand for 6-in. lump coal is still strong enough to hold the price firm at $3.25; 6 x 3-in. furnace coal is in fair demand, but concessions have been made in some instances. This is true also of the 4 x 2-in. small egg. The same situation prevails in the Clinton and Linton Fourth Vein districts in Indiana. Pocahontas prepared coal continues to slide in the Chicago market, as a large tonnage of it, and first class coal too, was offered during the week as low as $3.75 to the wholesale trade. It was extremely plentiful at $4, though the circular price to the retail trade appeared to be around $4.35. Good smokeless mine-run sold at $1.90@$2.25, the general average being around $2.15. West Virginia operators who offered splint coal in this market had to shade their prices as low as $2.25. In some cases West Virginia 4-in. block sold at $2.

Not much progress is being made toward establishing better prices on screenings from any of the fields depending on the Chicago market. Buyers appear to be independent, saying they have enough coal in reserve piles to last for some time. The Franklin County operators, as is usually the case, maintained prices firmly at $1.65@$1.90 for 2-in. screenings, with 1¼-in. approximately 10c. less. Saline County screenings went at about the same levels. West Kentucky screenings were offered freely at from 80c. up and Fifth Vein Indiana screenings could be had in any quantities at $1.35@$1.60.

Last week saw a slight improvement in the movement of domestic sizes from the Carterville and Williamson and Franklin County fields as well as the Harrisburg district. Lump moved freely but egg and nut have been rather slow. There has been a slight increase in demand for steam sizes because production slowed up. Railroad tonnage is light at shaft mines and fairly active from strip mines. Shaft mines get three or four days a week—occasionally a day better—while the strip mines work pretty nearly full time.

In the Duquoin district conditions have improved in the last few days and working time as well as movement of all sizes is better. The Mt. Olive field has been hit hard by the slump but is gradually getting back; some railroad business is now moving. Three days a week seem to be the limit for working time and coal generally is hard to move on account of the price. Standard district coal is still selling at cost and the mines are working haphazardly, some getting two days a week and some four days a week. All sizes are difficult to move, with no hope that conditions will improve until cold weather sets in. Railroad tonnage is fairly good. There has been no change in prices in any of the fields.

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Oct. 6 1924 | Sept. 21 1925 | Sept. 28 1925 | Oct. 5 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $4.35 | $4.75 | $4.60 | $4.50@ $4.75 |
| Smokeless mine run | Columbus | 2.20 | 2.55 | 2.55 | 2.40@ 2.75 |
| Smokeless screenings | Columbus | 1.20 | 1.50 | 1.50 | 1.40@ 1.60 |
| Smokeless lump | Chicago | 3.85 | 4.75 | 4.25 | *4.00@ 4.25* |
| Smokeless mine run | Chicago | 1.90 | 2.35 | 2.25 | *2.00@ 2.25* |
| Smokeless lump | Cincinnati | 4.10 | 4.75 | 4.75 | *4.25@ 4.50* |
| Smokeless mine run | Cincinnati | 2.25 | 2.60 | 2.35 | 2.25@ 2.50 |
| Smokeless screenings | Cincinnati | 1.15 | 1.85 | 1.85 | **2.00** |
| *Smokeless mine run | Boston | 4.25 | 5.20 | 5.20 | *4.75@ 5.00* |
| Clearfield mine run | Boston | 1.90 | 2.50 | 1.90 | *1.70@ 2.00* |
| Cambria mine run | Boston | 2.25 | 2.60 | 2.10 | **2.00@ 2.35** |
| Somerset mine run | Boston | 2.05 | 2.25 | 2.00 | 1.85@ 2.15 |
| Pool 1 (Navy Standard) | New York | 2.75 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pool 1 (Navy Standard) | Philadelphia | 2.70 | 2.65 | 2.65 | 2.50@ 2.85 |
| Pool 1 (Navy Standard) | Baltimore | 2.60 | 2.30 | 2.30 | 2.25@ 2.35 |
| Pool 9 (Super. Low Vol.) | New York | 2.10 | 2.15 | 2.20 | 2.10@ 2.30 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 1.95 | 1.95 | 1.95@ 2.00 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.85 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.90 | 2.00 | 2.00 | *1.85@ 2.15* |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.85 | 1.85 | 1.75@ 2.00 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.65 | 1.90 | 1.90 | 1.85@ 1.95 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.80 | 1.80 | 1.75@ 1.90 |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.70 | 1.70 | 1.60@ 1.80 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.70 | 1.70 | 1.70@ 1.75 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.55 | 1.55 | 1.55 | 1.50@ 1.65 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.60 | 1.60 | 1.50@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.40 | 1.65 | 1.65 | 1.65@ 1.70 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.50 | 2.50 | 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.25 | 1.55 | 1.55 | 1.50@ 1.60 |
| Kanawha lump | Columbus | 2.10 | 2.60 | 2.60 | 2.45@ 2.80 |
| Kanawha mine run | Columbus | 1.40 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings | Columbus | .95 | 1.30 | 1.30 | 1.25@ 1.35 |
| W. Va. lump | Cincinnati | 2.60 | 2.75 | 2.60 | 2.50@ 2.75 |
| W. Va. gas mine run | Cincinnati | 1.50 | 1.65 | 1.60 | 1.50@ 1.75 |
| W. Va. steam mine run | Cincinnati | 1.40 | 1.55 | 1.55 | 1.50@ 1.60 |
| W. Va. screenings | Cincinnati | .95 | 1.15 | 1.15 | **1.15@ 1.35** |
| Hocking lump | Columbus | 2.50 | 2.75 | 2.70 | 2.50@ 2.90 |
| Hocking mine run | Columbus | 1.60 | 1.65 | 1.65 | **1.50@ 1.85** |
| Hocking screenings | Columbus | .95 | 1.30 | 1.30 | 1.25@ 1.35 |
| Pitts. No. 8 lump | Cleveland | 2.35 | 2.35 | 2.35 | 2.00@ 2.75 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.85 | 1.85 | 1.85@ 1.90 |
| Pitts. No. 8 screenings | Cleveland | 1.15 | 1.45 | 1.40 | *1.25@ 1.45* |

| Midwest | Market Quoted | Oct. 6 1924 | Sept. 21 1925 | Sept. 28 1925 | Oct. 5 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $3.35 | $3.25 | $3.25 | $3.25 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Central, Ill. lump | Chicago | 2.85 | 2.85 | 2.85 | 2.75@ 3.00 |
| Central, Ill. mine run | Chicago | 2.20 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central, Ill. screenings | Chicago | 1.15 | 1.55 | 1.55 | 1.35@ 1.75 |
| Ind. 4th Vein lump | Chicago | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Ind. 5th Vein lump | Chicago | 2.85 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.25 | 1.20 | 1.20 | **1.35@ 1.50** |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.25 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.85 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | .80 | 1.15 | 1.15 | 1.15 |
| West Ky. block | Louisville | 3.35 | 2.00 | 1.90 | 1.85@ 2.00 |
| West Ky. mine run | Louisville | 1.70 | 1.35 | 1.35 | 1.25@ 1.50 |
| West Ky. screenings | Louisville | .80 | .80 | .95 | .80@ 1.10 |
| West Ky. block | Chicago | 2.85 | 2.30 | 2.05 | 1.85@ 2.25 |
| West Ky. mine run | Chicago | 1.65 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.00 | 2.25 | 2.25 | 2.00@ 2.50 |
| Big Seam mine run | Birmingham | 1.60 | 1.75 | 1.75 | **1.60@ 2.00** |
| Big Seam (washed) | Birmingham | 1.85 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block | Chicago | 3.10 | 3.00 | 3.00 | 2.75@ 3.25 |
| S. E. Ky. mine run | Chicago | 1.60 | 1.95 | 1.95 | 1.85@ 2.10 |
| S. E. Ky. block | Louisville | 3.10 | 2.75 | 2.85 | *2.50@ 2.75* |
| S. E. Ky. mine run | Louisville | 1.60 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Louisville | .90 | 1.25 | 1.25 | *1.10@ 1.35* |
| S. E. Ky. block | Cincinnati | 2.75 | 3.00 | 2.85 | 2.50@ 3.25 |
| S. E. Ky. mine run | Cincinnati | 1.55 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Cincinnati | 1.00 | 1.15 | 1.15 | **1.15@ 1.40** |
| Kansas lump | Kansas City | 5.00 | 4.35 | 4.35 | **4.50** |
| Kansas mine run | Kansas City | 3.25 | 3.10 | 3.00 | 3.00 |
| Kansas screenings | Kansas City | 2.35 | 2.50 | 2.40 | 2.35@ 2.50 |

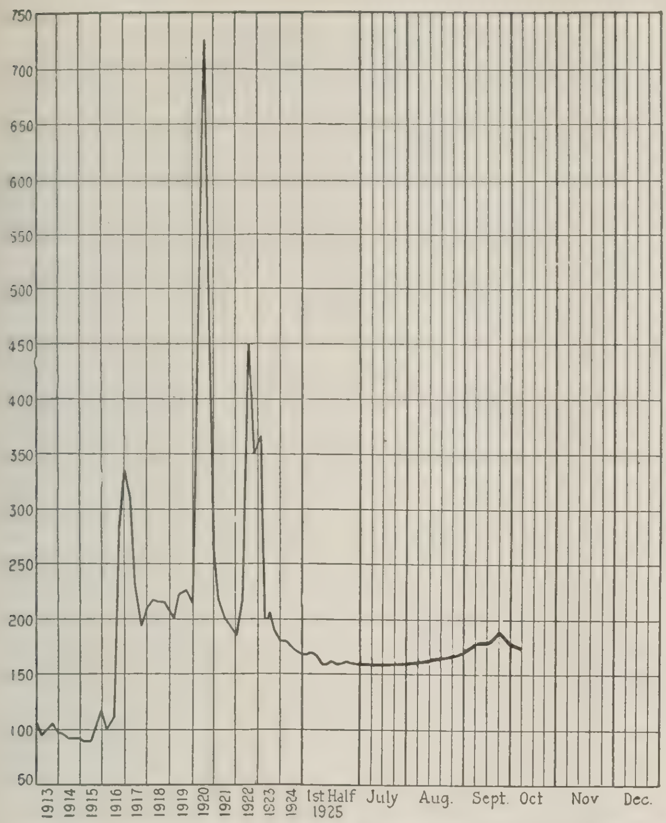
* Gross tons, f.o.b. vessel, Hampton Roads.

† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Oct. 6, 1924 | | Sept. 28, 1925 | | Oct. 5, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ............ | $8.00@$9.25 | ............ | $8.20@$8.95 | ............ | $8.20@$8.95 |
| Broken | Philadelphia | 2.39 | ............ | 9.15 | ............ | ............ | ............ | ............ |
| Egg | New York | 2.34 | $9.25@$9.75 | 8.75@ 9.25 | $14.00@15.00 | 8.65@ 8.90 | $14.00@15.00 | 8.65@ 8.90 |
| Egg | Philadelphia | 2.39 | 9.00@ 9.70 | 8.80@ 9.25 | ............ | ............ | ............ | ............ |
| Egg | Chicago* | 5.06 | 8.17@ 8.27 | 8.14@ 8.20 | 8.17@ 8.60 | 8.03@ 8.28 | **9.50@10.00** | 8.03@ 8.28 |
| Stove | New York | 2.34 | 9.50@10.25 | 8.75@ 9.50 | 14.00@15.00 | 9.15@ 9.40 | 14.00@15.00 | 9.15@ 9.40 |
| Stove | Philadelphia | 2.39 | 9.35@10.00 | 9.15@ 9.50 | ............ | ............ | ............ | ............ |
| Stove | Chicago* | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@11.00 | 8.48@ 8.80 | 10.00@11.00 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 9.25@ 9.75 | 8.75@ 9.25 | 14.00@15.00 | 8.65@ 8.95 | 14.00@15.00 | 8.65@ 8.95 |
| Chestnut | Philadelphia | 2.39 | 8.85@ 9.80 | 9.15@ 9.25 | ............ | ............ | ............ | ............ |
| Chestnut | Chicago* | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@11.00 | 8.28@ 8.50 | 10.00@11.00 | **8.50@ 8.75** |
| Pea | New York | 2.22 | 5.00@ 5.50 | 5.50@ 6.00 | 6.50@ 7.00 | 5.00@ 6.00 | 6.50@ 7.00 | 5.00@ 6.00 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.25 | 5.75@ 6.00 | ............ | 5.00@ 6.00 | ............ | **5.00@ 6.25** |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.25@ 5.75 | 5.05@ 5.36 | **5.50@ 6.00** | **5.50@ 6.00** |
| Buckwheat No. 1 | New York | 2.22 | 2.25@ 3.00 | 3.00@ 3.15 | 2.60@ 3.00 | 2.50 | 2.60@ 3.00 | **2.50@ 2.60** |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | ............ | 2.50 | ............ | **2.50@ 2.60** |
| Rice | New York | 2.22 | 1.85@ 2.25 | 2.00@ 2.25 | ............ | 2.25 | ............ | 2.25 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | ............ | 2.25 | ............ | 2.25 |
| Barley | New York | 2.22 | 1.25@ 1.50 | 1.50 | ............ | 1.50 | ............ | 1.50 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | ............ | 1.50 | ............ | 1.50 |
| Birdseye | New York | 2.22 | 1.35@ 1.60 | 1.60 | ............ | 1.60 | ............ | 1.60 |

* Net tons, f. o. b. mines. † Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Oct. 5 | Sept. 28 | Sept. 21 | Oct. 6 |
| Index | 175 | 176 | 185 | 171 |
| Weighted average price | $2.11 | $2.13 | $2.24 | $2.07 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

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Slightly colder weather in St. Louis has improved domestic demand for all coals, especially middle grade, although the high grades and lower grades are still moving slowly. Anthracite, smokeless and coke are below expectations. Country demand is picking up and is fairly active on middle grades. Price is becoming a serious factor on account of the low prices of eastern Kentucky coals, with which dealers who handle Illinois coals find it hard to compete. Western Kentucky also seems to be getting a better hold all the time. Local wagonload steam is coming along unusually well. Carload is fairly active on account of the supply, while country steam has showed little improvement. Prices are unchanged.

### Market Firm in Kentucky

The Kentucky market continued quite firm over last week, especially in steam coal, which was in good demand. The only weakness was in 4-in. eastern Kentucky lump, which dropped to around $2.50@$2.75, due to heavy offerings and lack of strong demand.

Industrial, utility, railroad and general demand for steam fuel is good. Eastern Kentucky has no difficulty in moving screenings at $1.10@$1.35 and there is a fair movement of byproduct coal on a mine-run basis at $1.50@$1.75. Nut, egg and small lump can be had at $2@$2.50. In western Kentucky 6-in. block is $1.85@$2; lump and egg, $1.65@$1.85; nut, $1.40@$1.65; mine-run, $1.25@$1.50; screenings, 80c.@$1.10.

More mines are resuming after being down for months. Car supply and general movement are quite fair, but competition is keen, production heavy and the sharp advance in prepared coal of a few weeks ago has ceased, due in part to the anthracite strike having failed to materially affect output west of Pennsylvania so far. Eastern Kentucky operations are on a fair scale, but western Kentucky could take much additional business without being rushed.

### Northwest Still Gaining

Progressive improvement continues in the coal trade at the Head of the Lakes. Cooler weather brought an influx of orders to dock operators for both anthracite and bituminous coals from a wide territory, including the agricultural districts of western Minnesota and eastern North Dakota, sections that had been little heard from since the war adjustment period. Municipalities and public utilities hereabout have been buying more steam coal lately than for several months and have been ordering on contracts placed some time ago. Interest in coal in industrial quarters, including furnace plants over Minnesota and Wisconsin, has been more marked in the last ten days. Retailers also are taking fair quantities in preparation for the cold-weather rush. Some of the docks have been working overtime lately for the first time since early last spring.

The market is stiff in all lines of bituminous coal. One of the docks issued a list advancing everything except screenings all along the line, but as the other docks have failed so far to follow suit the market may be said to be unchanged. One of the docks announced an advance in Kentucky screened lump to $6.50, but the general average remains at $6.25, with stove at $6, dock-run at $5.75 and screenings at $4.25. Pocahontas lump, egg and stove are $8.50; mine-run, $5.25@$5.50, and screenings, $4.25.

Twenty-nine cargoes, including one of anthracite, were unloaded at the docks last week, and eleven cargoes, all bituminous, were reported en route. Dock men expect a run of coal in sufficient quantities to take care of full requirements up to the opening of navigation next spring. Stocks of bituminous coal on commercial docks at Duluth and Superior are about 3,600,000 tons and anthracite 250,000 tons. The United States Steel Corporation has over 1,000,000 tons of steam coal stored at the Duluth, Missabe & Northern R.R. docks for the use of its nearby subsidiaries.

Business in the Milwaukee coal market is exceptionally quiet for this time of the year. Prices remain unchanged. Although anthracite has practically ceased coming in by lake, receipts of bituminous coal are heavy, totals to Oct. 1 being 488,234 tons of anthracite and 2,109,515 tons of bituminous coal, or 2,597,749 tons in all. Last year Oct. 1, 572,654 tons of anthracite and 1,640,310 tons bituminous, a total of 2,212,964 tons, were received by lake.

### Kansas Lump in Better Demand

Improved demand for Kansas lump resulted Oct. 1 in stabilizing the price for this grade at $4.50. While some operators have been asking $4.50 for the last month, others asked $4.25. With the increased production of lump to fill the growing demand a slight surplus of screenings has begun to accumulate, a situation that is being balanced by discontinuing the crushing of coal except in those shovel mines whose product is too soft to screen. And these are being closed down.

In Colorado continued warm weather has caused a slump in the demand for domestic sizes of coal, which has reduced mine operations about 3 per cent in the last week. There has been no change in prices, however. Local anthracite operators are receiving orders from territory which they have never reached heretofore. The mines are operating without any labor trouble or transportation difficulties. To increase the use of nut coal, which apparently has been a drug on the market, operators are advertising for a slogan that will encourage the use of this size by householders.

The coal business in Utah continues satisfactory and output is greater than at any time since last January, but it is not heavy enough to offset the low production of practically every intervening month since. Prices remain steady and the labor situation is good. The mines served by one of the principal railroads lost considerable time last week through a shortage of cars, but taking the state as a whole the industry is not yet suffering seriously from a car shortage, though it may do so soon as the result of coal cars being taken to move the sugar-beet crop.

### Buying Flurry at Cincinnati

At Cincinnati the lake situation has held much interest of late as more buyers have appeared in the last ten days than at any similar period during the spring and summer. It appears that replacements at the docks at the head of the lakes have caused the flurry in buying. Two months ago 2-in. stuff had a price which the lake buyers made almost arbitrary, but with most of the choice West Virginia and Kentucky coal placed, buyers are now in the market with a price said to range from $2 to $2.25.

Activity in slack continues strong. Late buyers of smokeless, finding that this has been pretty well taken, were eager to get what tonnage was loose with the opening of the new month. Only low grades could be bought in the high-volatile line-up around $1.15 during this week. All better grades had jumped to $1.25; high gases were worth even as high as $1.35@$1.40, with the same range for Harlan and good Elkhorn.

Again the weather has hit the domestic market. The best Hazard block is $2.75 asked, with some as low as $2.50. This is on a parity with the Logan County (W. Va.) lump price named by some of the biggest producers from that section. High grade Big Sandy and Elkhorn have a range of $2.75@$3.25 and some specialized coals from West Virginia are still quoted at $2.75@$3, though sales at the top are infrequent.

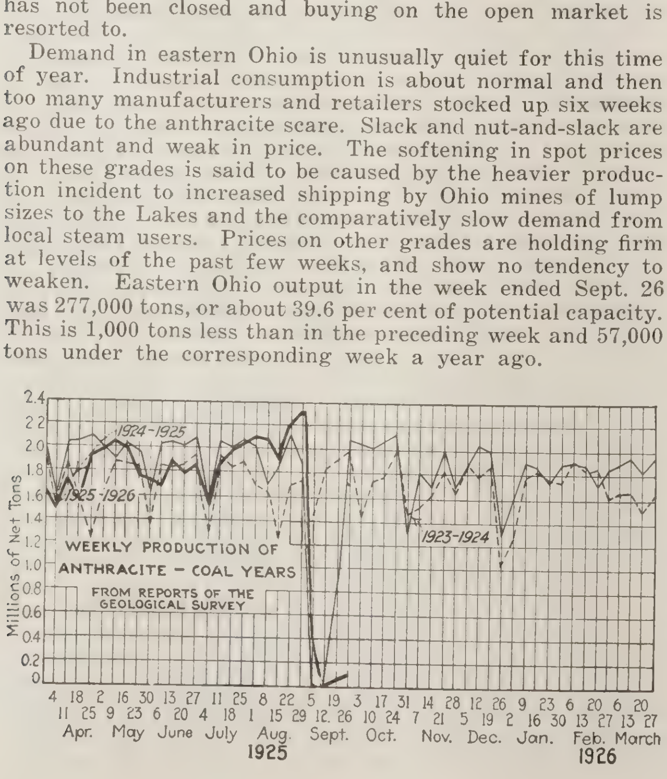
In the smokeless market, prices are still in the process of "finding themselves." The run-up to $5 and over was too hasty, some of the operating concerns now admit. One big company's October circular is $4.25, another at $4.50 for lump and egg, and the spot market is somewhere in between. Stove sizings are $3.25@$3.50; mine-run, $2.25@$2.50, and slack, $2.

Car reports show that 14,175 loads went through the Cincinnati gateway last week, a decrease of 132 from the preceding week but an increase of 2,873 over the corresponding week of last year. Of these, 2,595 were en route to the lakes, a decrease of 207 from the week before.

Trade at Columbus is still rather quiet, as the weather has been warm and dealers stocked up heavily during the spurt of a month ago. Householders are still coming in to a certain extent but the large majority covered their early winter needs by earlier orders. There is a small amount of free coal on the Columbus market, but the amount is not sufficient to cause any concern. Shipping on consignment has been stopped as a rule and only the smaller operators indulge in the practice. Prices at the mines on all domestic grades have been fairly firm.

Steam business shows practically no change. Buying by manufacturing concerns is limited as a rule, as steam users show little concern over the situation outside of wanting to make contracts after holding off for several months. A considerable tonnage used in this section is under contract and thus little price change is expected in the near future. Screenings are rather firm at recent levels. Mine-run is holding its own and other steam sizes are unchanged. The large state contract to supply the various Ohio institutions has not been closed and buying on the open market is resorted to.

Demand in eastern Ohio is unusually quiet for this time of year. Industrial consumption is about normal and then too many manufacturers and retailers stocked up six weeks ago due to the anthracite scare. Slack and nut-and-slack are abundant and weak in price. The softening in spot prices on these grades is said to be caused by the heavier production incident to increased shipping by Ohio mines of lump sizes to the Lakes and the comparatively slow demand from local steam users. Prices on other grades are holding firm at levels of the past few weeks, and show no tendency to weaken. Eastern Ohio output in the week ended Sept. 26 was 277,000 tons, or about 39.6 per cent of potential capacity. This is 1,000 tons less than in the preceding week and 57,000 tons under the corresponding week a year ago.



### Interest Flags at Pittsburgh

Pittsburgh district coal is quieter and a little less activity is reported from surrounding districts. The explanation seems to be that there is less stocking now. Prices are no weaker in tone, with the possible exception of steam slack, which is doing better than expected, remaining quotable at $1.30@$1.35. The general labor outlook is improved, with the Pittsburgh Coal Co. increasing output at the two Banning mines working at the 1917 scale and with the two strikes in the Connellsville region waning slowly.

Production in the central Pennsylvania field continues to increase. In the week ending Sept. 26 the loadings were 16,145 cars, as compared with 15,208 in the previous week. The loadings for the month to the 26th were 57,506 cars, compared with 50,562 for the same period of August. Included among the fields in which production is on the increase is the Broad Top region, where there was practically no production during the summer. This district is now producing practically 50 per cent of normal.

Buffalo coal men are still waiting for something to move in the trade. There is not the slightest stir in ordinary bituminous and smokeless and coke are up only a little. The advance in smokeless (Cambria County and Pocahontas) is hardly more than 50c., but it is expected to go higher. Slack is very dull, having lost all its former advantage, and is selling close to bottom quotations.

Business at Toronto has been quieter than usual at this season owing to the rush of orders just before the anthracite miners' strike. While some of the dealers still have considerable stocks of anthracite on hand others have little or none, the total being estimated as about two or three weeks' supply. Many consumers are buying substitute fuels, more especially Pocahontas smokeless and coke. Bituminous is moving slowly, as many industrial plants have laid in stocks in anticipation of possible trouble in the soft-coal fields.

### Business Slack in New England

The market for steam coal in New England is admittedly quite slack. Purchasing agents scoff at predictions of possible shortages later and the course of prices in the past four weeks has not been of the kind to inspire confidence. Accumulations are heavy at Hampton Roads, and only a renewed policy of restricted output will save the smokeless operators from further reductions of the f.o.b. price. On No. 1 Navy standard Pocahontas and New River only a few of the agencies profess to hold their coals at the $5 level, and there have been repeated efforts in the past few days to place demurrage coal at $4.75@$4.80 per gross ton on board vessels for the coastwise trade. In no direction do the industries seem disposed to buy in any volume.

The special news of the week should include the recent award of a 900,000-ton contract by the Boston & Maine R.R. to C. H. Sprague & Son, of Boston, on Island Creek coal. The deliveries are to extend to a year from next April 1, with certain options for a further period of five years. The price has not yet been made public, but it is the consensus of the trade that the successful bid was around $5.10 per gross ton alongside Boston, or 25c. more than was paid by the N. Y., N. H. & H. R.R. some months ago.

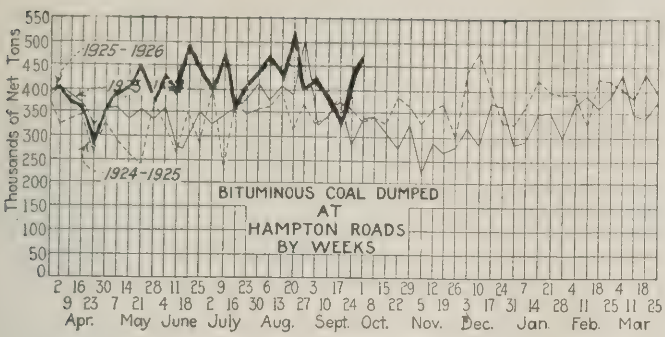
There are further indications that anthracite stocks are dwindling. In smaller communities, especially along the seaboard, where retailers are accustomed to store coal for the winter months, present supplies appear to be ample for months. The larger cities are by no means so well off, but not yet is there any pronounced demand for substitutes.

Shippers of Pennsylvania coal all-rail are quite active and prices of lump, egg and nut have been advanced several times in response to moderate demand. Quotations on prepared coal range from $3.50 to $5 and even higher per net ton at the mines.

For shipment inland from tidewater discharging plants the various factors have modified prices to $6 and less on cars, Boston or Providence. Most mine-run from the Virginia terminals is coming so slack that there is no interest in them for eventual household use. Tidewater retailers are turning to screened coal all-rail and to coke in cases where they are beginning to feel pressure from the public.

### Trade Slower at New York

The easing tendency in bituminous coal at New York continues. Demand as well as prices fluctuate somewhat, with the result that shipments are not moved as easily as



a few weeks ago. It is said that some heavy buyers are so well stocked that they will be out of the market in the next few weeks unless there is a decided change in temperature. Much will depend also on the continuance of the anthracite strike, operators and salesmen expecting important developments if the suspension continues another four or six weeks.

Consumers are taking full shipments on standing orders but in general show no desire to increase their receipts. It is said that some of the railroads are stocking heavy tonnages.

There is a fair tonnage of free coals at the piers but not enough to affect prices or to force sales at lower than current market quotations.

At Philadelphia the market seems to be hesitating. No ground has been lost, but inquiry for coal is slower. Demand for screened low-volatile coal for domestic use is strengthening, especially since some producers of byproduct coke are sold up.

At tide there is a slight improvement in cargo movement offshore, with some business still coming along. Bunkering is fair to good. Prices remain unchanged.

Oct. 1 brought little change in the soft-coal market at Baltimore. Loadings on the railroads continue unusually heavy, and there is a surplus at tide, created by shipments above the immediate absorption point. Prices remain stationary, and there is no real snap to the market, although some seasonal buying for stocking up has encouraged the trade. There was an increase of more than 100 per cent in the export fuel trade from Baltimore during the third quarter of 1925 over the entire first six months of this year.

Light showers and cooler temperature at Birmingham have heartened the domestic trade to some extent, though there has been no very material improvement in buying and movement in the past week. The market is still extremely laggard for this season, both in wholesale and retail channels, and orders are coming in very slowly.

Steam coal is being bought on a fairly satisfactory basis, demand being good for the better grades of mine-run and washed product, on which prices are firm, slight advances being obtained on some grades. Medium and lower grades, while not especially active, are moving with a fair degree of promptness at quotations which have held for several weeks. Due to insufficient rains steam power plants are consuming a large amount of fuel. Spot sales are somewhat heavier, with deliveries over a more extended period. Cessation of work in the anthracite field has not been felt materially in the local coal market so far but has served to stimulate the buying of domestic coke in the North and West, the movement from this section being heavier than usual, egg being quoted at $4@$4.25 ovens and nut at $3.50@$3.75 per ton. Foundry coke is selling somewhat better, prices ranging from $4.75 for byproduct to $5 for beehive product, f.o.b. ovens. Some gas-house coke is moving at $3.50@$4 per ton.

Coal production is around 400,000 tons per week or slightly better.

## Hard-Coal Trade Not Upset

Neither the strike nor the nearness of colder weather has affected the anthracite market at New York. There is no semblance of a rush by consumers and retail dealers show no inclination to pay the prices asked for stray lots of coal. Local retail yards hold a fair supply of all sizes, with the demand for stove heaviest.

Stock coals predominate in the offerings by wholesalers. The largest sizes are pretty well cleaned up. Pea and buckwheat are most in evidence and it is said the latter size is being gradually absorbed for use by mining and railroad companies.

One of the large producing companies has increased its price of No. 1 buckwheat to $2.60, an advance of 10c. over the September price.

Quotations for stray cargoes of domestic coals are around $17.25 alongside for egg, $20 for stove and $19 for chestnut. Stock chestnut is $15@$16 f.o.b. mine and pea $9@$9.50. No. 1 buckwheat is $2.50@$3.15 f.o.b. mine and rice $1.90@$2.25. Barley is practically out of the market, only a small tonnage being offered.

Coke is in fair demand with quotations ranging around $11 alongside.

Supplies are beginning to shrink in Philadelphia retailers' yards. The only family size running is company storage pea and dealers complain that this is not arriving in accordance with the amount ordered. The companies are holding this strictly to regular customers, and one producer on Oct. 1 advanced the price 25c. a ton. Cool weather last week caused pea to move well at retail at last, and it won't take long to use up stocks on hand.

Of substitute fuels coke is in the lead, of which a fair volume of byproduct is for sale. The principal size offered is nut, and the price varies from $4.50 to $7 a net ton.

In steam coals, rice is off the market, except for some river coal. There is plenty of buckwheat to be had, but this size is fast picking up in demand. Of course, there is no barley, as this was all moved some time ago.

The hard-coal supply at Baltimore continues to dwindle, as cooler weather is causing more consumers to place orders, but dealers are not willing to pay premiums for independent coal in any quantity. An effort is being made to pass a city ordinance to allow dealers to sell hard coal on the net-ton basis of 2,000 lb. instead of the gross ton as the law now requires. Dealers state that the reduction in the ton requirement would be met by a proportionate cut in price.

At Buffalo there is still a supply of pea and buckwheat coal and the demand is moderate. It is expected to last till there is mining again. The demand is good enough to make a market for a good many sorts of so-called smokeless coal, the price running all the way from $6 to $8 at the curb. More coke is being burned than formerly. Prices vary with an upward tendency.

## Quiet Envelops Connellsville Coke Market

The quietness that stole over the Connellsville coke market a forthnight ago is becoming more marked in contrast with the way the market stiffened in August, when various Eastern buyers were picking up tonnages at advancing prices. The last important Eastern buying was at around $3.40 or $3.50, not much being done above $3.50, but somehow operators got the market up to a quotable level of $3.75@$4 and some maintained two or three weeks ago that little if any coke could be had at less than $4. But in the past few days coke could be bought at $3.75 without difficulty, producers taking the initiative in offering it, and it has been a question whether a buyer might not be able to do $3.50. The opinion expressed in some market circles in August that the price movement was coming fully 30 days too soon in relation to the anthracite suspension seems to be fully confirmed.

Blast furnaces show no interest. Those operating are covered to the end of the year and no idle furnaces, such as use purchased coke, are likely to go in. The Port Henry (N. Y.) furnace is going in, but it is covered by a long-term arrangement.

Spot foundry coke has been particularly dull in the past week, remaining quotable at $4@$4.50.

The labor scare is largely past, as the Washington and Jamison-Bethlehem strikes have been waning slowly and no trouble has developed elsewhere.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Sept. 19, 1925 | 1,098,428 | 171,601 |
| Previous week | 975,434 | 157,357 |
| Week ended Sept. 20, 1924 | 1,076,847 | 189,486 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Sept. 22, 1925 | 150,453 | 63,320 | ...... | ...... |
| Sept. 14, 1925 | 160,368 | 59,929 | ...... | ...... |
| Sept. 22, 1924 | 143,345 | 72,279 | ...... | ...... |

# Foreign Market And Export News

## British Coal Trade Steadier But Far Below Normal

The Welsh steam coal trade seems to be steadying, though there is an almost entire absence of any material improvement. The slight expansion of business reported last week still leaves the industry at less than two-thirds of that required to give full-time employment to the Welsh collieries. In many cases pits are forced to suspend operation on account of the lack of empty cars, these being held up on railroad and dock sidings with full loads, waiting for buyers.

The chief improvement in the business is due to a better demand for larger coals, it being still difficult to find buyers for the lower grades of large coal. Small coal does not sell at any price, as the market for this quality seems to be practically dead.

Altogether, the Welsh anthracite collieries are operating full time, though in the other classes few pits are engaged more than half time and many cannot work more than one or two days a week.

The tone of the Newcastle market is steady and the outlook for early October is distinctly better. Business matures very slowly and German competition is keenly felt.

Output by British collieries during the week ended Sept. 19, according to a special cable to *Coal Age*, totaled 4,435,000 tons, compared with 4,110,000 tons in the preceding week.

## French Market Changes Little; Russian Coal Still Coming

On the whole, there is no change in the French coal market. Quiet is still the prevailing note in industrial grades while there is a gradual increase of activity in house coals.

Belgian producers have, we are assured, fixed the price of ovoids for sale in France, from October to March, at 85 fr. and, if this information is confirmed, the price of French ovoids will be raised to 101 fr., in order to preserve the usual margin between the prices of the Belgian and French products.

The Russian anthracite which arrived in Rouen was sold locally or in the Paris area; its price f.o.b. Rouen was 300@310 fr. per ton, which is 50@60 fr. less than the Welsh anthracite of corresponding description. A cargo of Russian anthracite also has arrived in Marseilles, comprised, as the first one, of nuts and cobbles.

During August France received from the Ruhr 703,000 tons of indemnity fuels, including 432,200 tons of coal, 242,700 tons of coke and 28,100 tons of lignite briquets, as against a total of 671,500 tons in July.

## Business Continues to Slacken At Hampton Roads

Business at Hampton Roads slowed up last week, the market being weak and demand falling off. Only the bunker trade was normal, with a fair demand. Heavy buying at the time the hard-coal strike began apparently had overstocked much of the trade, which, combined with continued and unexpected warm weather, has had a tendency to cut down movement.

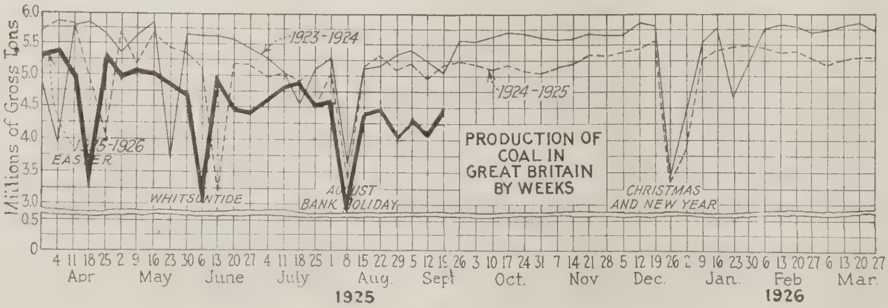
Supplies at the piers were heavy, no foreign business was being developed and New England trade was very light. Coastwise movement has fallen off, and movement to Canadian territory is below the average of the last three or four months.

## Belgian Producers Glum Over Industrial Fuel Outlook

Except for domestic coals, the Belgian market lacks animation. Anthracitic and other sorts of house coals, including ovoids, are in a quite satisfactory situation, a further rise of 5 fr. per ton having just been announced in Brussels for the prompt delivery of small tonnages of anthracite. Output of the latter sort of fuel is much restricted, and its consumption is increasing.

Industrial fuels, on the other hand, remain dull, though there has been a slight improvement in demand, which includes coke, due to the restarting of a few works and foundries. It is still far from what it should be, however, as important iron works are still idle. Besides, competition of German and British coals is becoming more acute and France is purchasing less from Belgium, even in the eastern area.

Therefore, the prospects of the Belgian industrial coal market are by no means bright.



### Export Clearances, Week Ended Oct. 3, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Canada: | |
| Ital. Str. San Giuseppe, for Three Rivers | 7,219 |
| Br. Str. Penolver, for Montreal | 5,623 |
| Br. Str. Wearbridge, for Quebec | 6,398 |
| Latvian Str. Kangars, for Montreal | 4,138 |
| For Italy: | |
| Ital. Str. Monviso, for Genoa | 3,503 |
| Ital. Str. Volturno, for Portovecchio di Piombino | 7,195 |
| Ital. Str. Stromboli, for Genoa | 7,448 |
| For French West Indies: | |
| Br. Str. Dunrobin, for Fort de France | 7,025 |
| For Egypt: | |
| Br. Str. Diomed, for Port Said | 2,112 |
| For Canal Zone: | |
| Amer. Str. Achilles, for Cristobal | 12,048 |
| For Newfoundland: | |
| Nor. Str. Haraldshang, for Argentia | 2,738 |
| Nor. Str. Thorgerd, for Clarenville | 3,662 |
| For Cuba: | |
| Br. Str. Domira, for Havana | 3,002 |
| For Brazil: | |
| Br. Str. Kalimba, for Rio de Janeiro | 5,854 |

FROM PHILADELPHIA

| | Tons |
|---|---|
| For Cuba: | |
| Br. Str. Mountpark, for Antilla | —— |
| For Miquelon: | |
| Nor. Str. Urter, for St. Pierre | —— |

FROM BALTIMORE

| | Tons |
|---|---|
| For Algeria: | |
| Ital. Str. Roana, for Algiers | 9,338 |
| For Chile: | |
| Nor. Str. Jacob Christensen, for San Antonio (coke) | 2,429 |

### Hampton Roads Pier Situation

(Gross Tons)

| N. & W. Piers, Lamberts Pt.: | Sept. 24 | Oct. 1 |
|---|---|---|
| Cars on hand | 2,105 | 1,841 |
| Tons on hand | 129,385 | 113,938 |
| Tons dumped for week | 161,313 | 162,229 |
| Tonnage waiting | 20,000 | 15,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 1,274 | 1,370 |
| Tons on hand | 98,100 | 107,600 |
| Tons dumped for week | 71,862 | 95,558 |
| Tonnage waiting | 192 | 3,682 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,430 | 2,990 |
| Tons on hand | 149,800 | 151,610 |
| Tons dumped for week | 139,471 | 152,031 |
| Tonnage waiting | 9,895 | 17,940 |

### Pier and Bunker Prices, Gross Tons

PIERS

| | Sept. 26 | Oct. 3* |
|---|---|---|
| Pool 1, New York | $5.35@$5.60 | $5.35@$5.60 |
| Pool 9, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 10, New York | 4.80@ 5.00 | *4.75@ 5.00* |
| Pool 11, New York | 4.50@ 4.75 | *4.45@ 4.70* |
| Pool 9, Philadelphia | 4.85@ 5.05 | 4.85@ 5.05 |
| Pool 10, Philadelphia | 4.55@ 4.75 | 4.55@ 4.75 |
| Pool 11, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 1, Hamp. Roads. | 5.25 | *5.00* |
| Pool 2, Hamp. Roads. | 5.10 | *4.65* |
| Pools 5-6-7, Hamp. Rds. | 4.85 | *4.50* |

BUNKERS

| | Sept. 26 | Oct. 3* |
|---|---|---|
| Pool 1, New York | $5.60@$5.85 | *$5.60@$5.80* |
| Pool 9, New York | 5.25@ 5.50 | 5.25@ 5.50 |
| Pool 10, New York | 5.05@ 5.25 | *5.00@ 5.25* |
| Pool 11, New York | 4.75@ 5.00 | *4.70@ 4.95* |
| Pool 9, Philadelphia | 5.05@ 5.25 | 5.05@ 5.25 |
| Pool 10, Philadelphia | 4.75@ 4.85 | 4.75@ 4.85 |
| Pool 11, Philadelphia | 4.60@ 4.75 | 4.60@ 4.75 |
| Pool 1, Hamp. Roads. | 5.35 | *5.10* |
| Pool 2, Hamp. Roads. | 5.15 | *4.75* |
| Pools 5-6-7, Hamp. Rds. | 4.95 | *4.60* |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Sept. 26 | Oct. 3* |
|---|---|---|
| Admiralty, large | 24s. | 24s. |
| Steam smalls | 11s.3d. | 11s.3d. |
| Newcastle: | | |
| Best steams | 14s.9d.@15s. | **16s.6d.** |
| Best gas | 16s.6d. | 16s.6d. |
| Best bunkers | 14s.6d. | **15s.@15s.6d.** |

* Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

E. E. Ellis, for many years general land agent for the Tennessee Coal, Iron & Railroad Co. and its subsidiaries, in the Birmingham district, has been transferred to the New York Offices of the United States Steel Corporation, where he will be connected with the general land office department. He was succeeded at Birmingham by Ted Joy, who has been assistant land agent there for the corporation.

The St. Louis & San Francisco R.R., which recently purchased the Muscle Shoals, Birmingham & Pensacola R.R., which has been in the hands of a receiver for several years, now has a corps of engineers in the field surveying the proposed extension of the line from Kimbrough, where it makes connection with the Mobile Division of the Southern Ry., to Glen Allen, where it is planned to make a connection with the main line of the Frisco. The line now extends from Kimbrough, south to Pensacola, Fla., a distance of 143 miles, and the distance from Kimbrough to Glen Allen will be 146 miles. Confirmation of the sale is pending before the Interstate Commerce Commission. The extension, if authorized, will penetrate the coal fields of Walker County and give the Frisco R.R. a direct connection with the port of Pensacola, where it is understood the purchased line owns valuable terminal facilities.

W. F. Hull, of New York, a stockholder and director of the DeBardeleben Coal Corporation, was in Birmingham recently on a tour of inspection of the properties of the corporation and attended a meeting of the executive board. He also is a stockholder in the Pratt Fuel Corporation.

## ARKANSAS

Mine No. 18 of the Western Coal & Mining Co., at Jenny Lind, opened Sept. 28 under the 1917 wage scale, according to J. T. Buckner, of the Consolidated Sales Co., at Muskogee, Okla., which has leased the property. The mine had been idle for several months. The mine is the largest in the Jenny Lind field and was producing 500 tons of coal daily at the time it closed. About 125 men were employed. A few small mines have been in operation in the field, but there was little activity.

Union miners have lost their fight against a receiver for district 21, United Mine Workers, and must see their funds pass into the hands of State Senator J. F. Brewer, designated some time ago as receiver for the union. Chancellor J. V. Bourland ruled that there was no reason why the receivership should be set aside, recognized the need for such a state and ended the controversy which has been raging for some time between union miners and mine operators. The receivership was granted Aug. 31 by Chancellor Bourland upon petition of the Greenwood, Mammoth Vein and Backbone Coal companies, alleging the union to be bankrupt and endangering the operating companies.

A temporary injunction enjoining members of District No. 21, United Mine Workers, from interfering with employees or the properties of the Bernice Anthracite Coal Co. and the Bernice Investment Co. at Russellville, Bernice and other points in western Arkansas, was issued Sept. 22 by Judge Jacob Trieber in the U. S. District Court at Little Rock. Judge Frank A. Youmans, at Fort Smith, previously had issued a temporary restraining order to await the return of Judge Trieber. The order is directed against 32 locals of the miners' union in Sebastian, Franklin, Logan, Johnson and Pope counties, which revolted against employment under the wage scale of 1917 recently placed in effect at the expiration of the 1924 scale.

## COLORADO

The State Supreme Court has overruled Governor Morley's recess appointment of Carl DeLochte as member of the State Labor Industrial Commission in place of W. I. Reilly. Mr. Reilly will hold his position as member of that commission for the term ending Jan. 1, 1928.

## ILLINOIS

W. H. D. Gibson, who has long been prominent in the coal trade, has been elected vice-president of the J. K. Dering Coal Co. of Chicago, with which concern he has been associated since its organization. In this capacity he is the official in charge of sales.

Voting trustees for the common stock of the United Electric Coal Companies, Danville, have declared a dividend of 50c. payable to certificate holders of record Oct. 3, 1925. This marks the resumption of dividends upon the stock of this company, and it is believed that the company's production will justify increased dividends in the near future.

The Indiana and Illinois Coal Corporation's two large mines, No. 12 and No. 14, located at Witt, in Montgomery County, will open in the near future, it was announced by the mine officials. Present plans of the company include a union of the two mines by the construction of a new steel tipple at mine No. 12, and the use of that shaft for the new consolidated mine in connection with the completion of the immense power plant now in course of construction by the company. The old tipple at Mine No. 12 is being torn down and will be replaced at once by a modern tipple of the best possible steel construction. When running at capacity the new consolidated mine will employ 800 miners.

## INDIANA

Announcement has been made that work is to be resumed at the Wabash mine, in the Terre Haute field. Operation has been suspended for some time on account of gas leading through a cut made into the old workings of the Speedwell mine. The Eagle mine, in the same field, has been reopened, as has the Vermillion mine, in the Clinton field. At Bicknell only one large mine remains idle. From the Petersburg field and other points along the E. I. & T. H. R.R. come favorable reports. All of the large stripping mines in this territory are working to full capacity and most of the deep-shaft mines now are working. The railroads are putting more crews to work each week.

## KANSAS

T. F. Brown, of Pittsburg, for ten years a mining engineer with the Clemens Coal Co., in the southeastern Kansas field, entered the service of the U. S. Bureau of Mines Oct. 1 as a first-aid and mine-rescue expert, assigned to Car No. 10, operating in Iowa and Missouri, out of Mason City, Ia.

Mine No. 7 of the Girard Coal Co., near Radley, idle since the spring of 1924, has been electrified and was reopened Sept. 25, under lease by Mike Wagner of Kansas City, Mo., and William Hudson, of Radley. The mine was leased by the two men a year ago but opening was delayed a year by weak demand. It is on 200 acres of coal land and employs eighty men.

Mine No. 14 of the Crowe Coal Co., near Croweburg, has been leased by William M. Curley, one-time auditor for the United Mine Workers, of Pittsburg, and John O'Donnell, of Arma, and was reopened Oct. 1. The operating company is known as the Croweburg Coal Co. The mine has been idle since February, this year. It will give work to between 100 and 150 men.

Coal is being uncovered by the new steam shovel of Ed Brennan and others near Mulberry, and loading will be started soon.

## KENTUCKY

Jack Boucher, 46 years of age, owner of several small mining properties, and one or more mines at Fredonia, Ky., is likely to die as a result of four wounds received when Bryan Bennett, an employee, became enraged over Boucher's refusal to meet wage demands, and started shooting. Bryan Bennett surrendered to officers at Princeton.

Excellent rains over the latter part of September have improved water conditions at some of the mines which were short of boiler water, and transportation is again near normal on the upper Ohio River and the Kentucky River. Boats are able to navigate again also on the lower Ohio River, and river coal movement, which was practically at a standstill, is getting under way again.

The Columbus Mining Co., at Allais, near Hazard, has started rebuilding about a dozen miners' homes which were recently destroyed by fire.

Negotiations are in progress for the sale of the property of the Alma-Thacker Coal Co., which had offices in Columbus, Ohio, and which operated four mines on Tug River. E. F. McClure was named receiver about a year and a half ago and in July D. N. Postlewaite, of Columbus, representing the creditors, bought in the property. Now outside parties are negotiating for the property, which consists of about 2,000 acres of excellent coal lands in addition to four tipples. The mines have not been operated since the receivership.

Except for a few boats powered with gasoline or oil-burning engines, boats on the Ohio and Mississippi rivers have been operated by coal-generated steam power almost exclusively up to the present time. Cheap fuel oil in the lower Mississippi River, however, is said to be responsible for an experiment now being made by the Mississippi and Warrior River Federal Barge lines, which placed the steamer Wynoka on the marine ways at Paducah, Ky., and fitted it up with oil burners to make a test of oil fuel for handling barge service in the district. The boat has been revamped and has been waiting for higher water to go South.

## MINNESOTA

The State of Minnesota has placed contracts for about 110,000 tons of coal for the ensuing year. The Berwind Fuel Co., Minneapolis, received the order for dock coal, at $1,600; Saline Coal Corporation, Minneapolis, for Illinois coal, amounting to $201,000; Chicago, Wilmington & Franklin Co., $7,800; North Western Fuel Co., St. Paul, $238,000; Northern Coal & Dock Co., St. Paul, $255,000; Pittsburgh Coal Co., $38,000; C. Reiss Coal Co., $5,300.

## MISSOURI

Kansas City coal dealers will not advance coal prices this fall or winter, according to H. S. Mitchell, manager of the Coal Credit Bureau, speaking for the largest coal concerns of the city. Coal prices will be lower than they were last winter, in all probability, said John Sargent, vice-president and general manager of the Central Coal & Coke Co.

The new shaft being sunk by the Western Coal & Mining Co., near Minden, to be known as the company's mine No. 23, has reached coal at a depth of 60 ft. Main entries are now being worked, and production is expected to begin within a few weeks.

## NEW YORK

The P. J. Conway Coal Co., Inc., has been incorporated under the laws of New York and has opened offices in the Woolworth Building, New York City, to carry on a general business in the mining and shipping of anthracite and bituminous coal, as well as coke. The company owns extensive soft-coal properties in West Virginia. The officers of the company are P. J. Conway, president; Joseph McDonough, first vice-president; J. W. Sullivan, second vice-president; John F. Conway, secretary; J. Clyde Lewis, treasurer.

## NORTH DAKOTA

Lignite mine owners anticipate an increased demand for their product as a result of the hard-coal strike. They are prepared to double their output.

The Northern Lignite Coal Co., of Minot, is preparing to develop a new mine at Benedict, south of Minot, where 330 acres have been purchased.

## OHIO

Dumpings at the Hocking Valley Ry. docks at Toledo up to Oct. 1, 1925, totaled 6,219,986 tons as compared with 5,015,548 tons up to Oct. 1, 1924. The T. & O. C. Docks at Toledo, operated by the New York Central Lines, loaded 790,443 tons originating on its lines up to Oct. 1, as compared with 45,315 tons last year to the same date. The T. & O. C. docks in addition have dumped 23,584 cars, or 1,165,030 tons, originating from the Big Four and L. & N. railroads. The total dumpings at the docks to Oct. 1 were 1,955,366 tons.

The Clarkson Coal Mining Co. is operating No. 1 mine at St. Clairsville with a shift to handle excess coal loaded during the day. Loaders shovel into the mine cars more coal than can be taken care of by the regular day shift, so a special force was put to work nights getting the fuel up the shaft and over the tipple screens. The situation is unusual in the eastern Ohio field. The company's Dunglen mine is operating steadily.

After being idle for almost three years the Wilbern mine, located near Crooksville, has resumed operations, giving employment to about 75 miners. The mine is loading considerable railroad fuel.

Mining conditions in the Crooksville field of southern Ohio, which embraces Muskingum, Perry and Morgan counties, have greatly improved during the past month or six weeks. F. J. Bender, secretary of Subdistrict No. 6 of the United Mine Workers, reports only one of the larger mines in that district not in operation. In all approximately 2,500 miners have more or less steady employment.

William A. Lama, who was formerly secretary of the Consolidated Mining Co., of Columbus, has resigned to accept a responsible position with the Preston-Morgan Coal Co., a jobbing concern with offices in the Atlas Building.

## PENNSYLVANIA

Vandals are using dynamite in certain parts of Clearfield County to intimidate operators paying the 1917 scale. On the night of Sept. 30 an explosion destroyed the fan house at the Betz mines and the previous night fire destroved the mule barn at the Davis mine. Both these operations are owned by B. Swoope, of Merion and Curwensville.

Twelve acres of coal, bordering on a mine fire which has been burning for the last 30 years, are to be mined through a slope 220 ft. long which is being constructed into the Davidson mine, near Connellsville. About 20 years ago brick walls were built to cut off the fire. More stoppings will be built where necessary. The slope will be 10 ft. wide and 8 ft. high. Three months will be required in construction. It will be driven under the ovens at the Davidson plant.

The Bertha Consumers Co., Chamber of Commerce Building, Pittsburgh, has called a special meeting of stockholders for Nov. 10 to act upon a contemplated increase in the indebtedness of the company from $2,000,000 to $2,500,000.

The Nebo Coal Mining Co., one of the concerns affected by the decision in the mine drainage case which went against the coal operators of the Indian Creek Valley, has found a way to surmount its difficulties. The company has pumped the drainage water from the mines into an old fireclay working—a lake of considerable size. Much of the water is lost by evaporation and seepage, and in this way the company expects to continue operations.

It is reported that the United Mine Workers will make another attempt to organize the miners in the Connellsville coke region this fall and winter.

The capital stock of the Acme Gas Coal Co., which has mines at Shannon and Rimersburg, has been bought by Joseph J. Eagan, Buffalo coal shipper, and Charles E. Buckholz, formerly vice-president of the Rochester & Pittsburgh Coal & Iron Co., but now president of the Bowersville Coal Mining Co. at Punxsutawney. Mr. Buckholz will be president of the Acme company

**Steel Span Over Big South Fork, Cumberland River**

Electric mine locomotives haul the coal across this bridge and dump it at the Worley or No. 4 tipple of the Stearns Coal & Lumber Co., Worley, Ky., the sidetrack being located on the Kentucky & Tennessee Ry.

and Mr. Eagan, vice-president. The mines have a daily capacity of 2,000 tons, most of the output of which will be sold in Buffalo.

M. C. Stoner and William H. Speer, Chambersburg, have recently purchased from the Pilling Co., of Philadelphia, a tract of land containing 285 acres on the Broad Top mountain, underlaid with three seams of coal. This is the property that was leased by the Joseph E. Thropp Co. to the Louise Coal Co. The Broad Top Fuel Co., with a capital of $100,000, has taken over the personal property of the Louise Coal Co., and is preparing to resume operations. The offices of the Broad Top Fuel Co. will be at Chambersburg. W. H. Speer & Son will act as selling agents, with offices at Chambersburg.

The Valley Camp Coal Co. has reopened its Soudan mine at Van Voorhis, near Monongahela, after being idle for 10 months. The Jacksonville scale will be paid, it was said. Normally, 500 men are employed at the mine and coal will be produced after cleaning up some time this week. It is understood the company will have monthly pay days, which will help keep down the overhead to some extent. It is likely other economies will be put into effect.

Robert Y. Stuart, Secretary of Forests and Waters, has sent a letter to the district presidents of the United Mine Workers in the anthracite region of Pennsylvania asking their co-operation in preventing forest fires. The head of the state department in charge of forest protection asks the miners' officials to call the attention of the miners now on strike to the fact that the fall forest fire season is here and to ask their aid in preventing and checking such fires.

The Penn-Pitt Coal Co. plans a number of changes at its river tipple near Greensboro, on the Monongahela River. The loading pier will be raised 8 ft., ice breakers will be enlarged and new mooring piers will be erected.

## UTAH

Lester D. Freed, prominent Salt Lake City capitalist and owner of coal properties in Huntington Canyon, near Huntington, obtained samples of coal from these properties recently with the view of having them tested for coking qualities. Fifty sacks of the coal have been shipped to Los Angeles for this purpose. It is believed that coking qualities of the coal will prove entirely satisfactory, in which case, it is understood, the properties in question will be developed.

The United States Fuel Co. has just awarded prizes for the best lawns and vegetable and flower gardens at Hiawatha, Heiner and Mohrland. The contest was in the interest of a movement for worth-while hobbies started by the company. Officers and salaried employees were not permitted to compete for prizes, but some of their gardens and lawns were highly commended by the committee.

Utah mines produced 385,413 tons of coal in August compared with 386,192 tons in the corresponding month last year and 479,000 tons in August, 1920.

The National Coal Railway Co. has been granted permission by the Interstate Commerce Commission to construct 8.5 miles of railroad in Carbon County. The line will develop a coal field not at present served by a railroad.

A runaway coal train the other day on the Kenilworth branch line of the Denver & Rio Grande Western R.R. in Carbon County stopped all hauling operations from that line for about 36 hours. The train wrecked itself at a curve. Seven hundred and fifty tons of coal was being brought from the mines to the switching yards near Helper when the brakes failed to act. It is estimated that the tie-up affected the output of the Independent Coal & Coke Co. to the extent of about 4,000 tons.

## VIRGINIA

The Norfolk offices of the West Virginia Coal Co. will close Nov. 1, it has been announced, and A. F. Jakeman, the manager, has not decided where he will go. The company has maintained offices at Norfolk and Newport News and the tidewater business has not been sufficient to maintain both places. The company's main offices are in Richmond.

## WEST VIRGINIA

In a statement issued by the State Department of Mines attention is called to the large labor turnover in the state, the largest in its history, according to Robert M. Lambie, chief of the department, who cautions officials to look after safety features more closely.

The Algonquin Coal Co., on the main line of the Virginian and the Widemouth branch of the Norfolk & Western Ry., which has been down for a year, has resumed coal shipments. It is owned by the M. E. Kinsley interests, of New York city, but has been in the hands of a receiver for some time. Roy T. Wright, of Matoaka, the receiver, is credited with getting things in shape for resuming operations.

Because of labor troubles the Consolidation Coal Co. did not have a special observance of Fire Prevention Week, Oct. 4-10 in northern West Virginia. Under ordinary conditions the company usually has special exercises in schools at the mining towns, displays in the company stores, and shows motion picture films on the subject.

Coal movement has been increasing recently on the B. & O. R.R. over the Alleghany Mountains, east of Grafton, according to reports. Seven hundred loads of coal are moving eastward daily, officials say.

Colonel and Mrs. W. D. Ord, of Landgraff, plan to leave the Pocahontas Coal field to make their home near Washington, D. C. They have purchased a part of the Mount Vernon estate and expect to make their home in the house that was built by George Washington for his overseer—a house which is about 150 years old. The house will be left intact until some time next year, when it will be remodeled. Colonel Ord, who is president and general manager of the Empire Coal & Coke Co., one of the larger producing companies in the Pocahontas district, and is president of the Smokeless Coal Operators Association of West Virginia, has been a resident of the Pocahontas field for about 30 years.

The resignation of William Roy, vice-president of District 6 and one of the leaders in the strike campaign now being waged against non-union mines in the Panhandle, has given rise to reports of a wrangle with Lee Hall, district president, although such reports are not confirmed. There also are rumors of a change in policy in the district, as a result of the resignation, especially toward the federal court injunctions now protecting the non-union operators and their properties. Roy had been identified with the union in District 6 for more than 15 years as a sub-district and district official. He gives ill health as his reason for resigning.

## WYOMING

Production in the Rock Springs field is increasing materially, several groups of mines now working four to six days a week. This increase is reflected in the re-employment of many men on the rip track forces of the Union Pacific R.R. in Rock Springs and in the camps.

The Union Pacific Coal Co. has taken another step in the safety field. Acting upon recommendations in the report of engineers who made the annual inspection of that company's properties, this corporation has announced that it is putting into effect a daily morning inspection of all of its mines. It is hoped by the company's officials that by such an examination prior to the men going to work every morning the number of accidents will be materially reduced. In the past year the U. P. has taken several important steps in the safety field, among which are the introduction of permissible powder for shooting, copious rock dusting of all workings, electric cap lights and the safety patrol system.

Rock dusting is gaining favor in the southern Wyoming district. Recently the Central Coal & Coke Co., of Kansas City, which operates a mine here, ordered a carload of shale dust from the Union Pacific plant in Rock Springs and is experimenting with the dust. Arthur Vaile is superintendent. Several weeks ago the Quealy interests purchased shale dust from the U. P. for use near Kemmerer and at Sweetwater, near Rock Springs. This company is using a combination pulverizer-blower. The latest company to evince interest in dusting is the Colony Coal Co., which has extensive workings at Dines. Recently Chief Engineer Pierce, of the Denver offices of that company, spent several days in Rock Springs studying the methods used by the U. P., and it is understood that this company will have rock-dusting operations under way soon.

Three thousand seven hundred and twenty-four miners were employed in 65 active mines in the State of Wyoming during the second quarter of 1925, according to the quarterly report of the state mine inspector, Hugh McLeod, made public last week. More than half, or 1,877, of these miners were in the employ of the Union Pacific Coal Co.; the Sheridan-Wyoming company was second with 420. These figures are only for men employed underground. Fourteen of the active mines were wagon mines. Fifty-four non-fatal accidents were reported, all of which occurred in the southern district, which includes the Kemmerer and Rock Springs fields. Four fatal accidents occurred, two in Superior, one in Hanna and the fourth at Owl Creek, in the Northern district.

State Mine Inspector Hugh McLeod, of Rock Springs, spent September in making an inspection of the mines of the northern Wyoming fields. The state inspector's offices are now at Rock Springs. John L. Dykes is the deputy for the southern district, having his office with Mr. McLeod.

## CANADA

Coke production in Canada in August totaled 95,297 tons, as against 89,221 tons in the preceding month. This rise of 7 per cent, according to a statement by the Dominion Bureau of Statistics, was due to increased blast-furnace activity and the settlement early in August of the five months' strike of Nova Scotia coal miners which commenced in April and continued for a period of approximately five months.

Peat Fuels, Ltd., a Montreal company, which has been manufacturing standard peat fuel at Alfred, Ont., during the past summer, is offering through Capital Investment, Reg'd., $75,000 7 per cent cumulative preferred shares, with a bonus of common stock. The company controls enough raw material at Alfred to produce 25,000 tons annually for twenty to thirty years. It is purposed to bring the capacity of the plant at Alfred up to 250 tons per day and plans are under way to establish similar plants in other favorable localities in the acute fuel areas of central Canada.

Southern Okanagan Collieries, which has acquired title to 1,280 acres of coal lands between Princeton and Fairview, in the Nicola-Princeton coal field, is floating a 15-year 7 per cent bond issue, to provide funds for the further development and the equipment of the property. Diamond drilling indicates the existence of six seams of a good grade of bituminous coal under the area owned by the company. The authorized capital of the company is $750,000, of which $457,150 is outstanding.

## Association Activities

**The Baltimore Coal Exchange**, composed of retailers, held its annual meeting on Sept. 27, when the following officers were elected: Hugh C. Hill, president; Benson Blake, Jr., first vice-president; L. C. Wilcox, second vice-president; J. E. Waesche, treasurer, and J. F. Palmer, secretary. The directors chosen were Mr. Blake, John J. Bauer, Graham Eckel, Charles Gross, Albert F. Gross, Mr. Hill, D. L. Harrison, Horace Isaacs, John J. Kelly, B. F. Lucas, O. P. McComas, William Magee, C. N. Parkinson, H. S. Reinicker, John J. Reahl, H. G. Von Heine, E. A. Watts, J. Harry West, Mr. Wilcox, Mr. Waesche and J. H. Wailes. The executive committee will consist of Mr. West, chairman; Mr. Von Heine, Mr. Wilcox, Mr. Hill, Mr. Blake and Mr. Waesche.

**The Smokeless Coal Operators Association of West Virginia** held its second annual "rodeo" meeting at White Sulphur Springs, W. Va., Sept. 15-18. Ways to take the fullest advantage of the opportunity presented by the establishment of an all-rail rate to New England, which becomes effective Oct. 15, were discussed. The members also made an analysis of the work of the Holly Stover Statistical Bureau, of Chicago, and named a committee to study the national advertising campaign for smokeless suggested by Mr. Stover. The event came to a close with a banquet, over which W. D. Ord, head of the association, presided. Among those who delivered addresses were F. M. Whitaker, vice-president of the Chesapeake & Ohio Ry.; A. R. Smith, vice-president of the Louisville & Nashville; W. J. Jenks, vice-president of the Norfolk & Western; William C. Atwater, John Laing, C. H. Mead and G. H. Caperton. On behalf of the association, E. E. White presented a silver loving cup to Robert H. Gross, who was president of the association in 1923-24. Trophies also were presented to P. M. Snyder of Mt. Hope, who won the invitation golf tournament, defeating J. B. McCahey, of Chicago, 3 and 2, and to Isaac T. Mann, of Washington, winner of the operators' tournament, who defeated Rodman Page, Jr., of Philadelphia, 4 and 3. Ralph Knode, of Philadelphia, won the Tierney Cup, and the Holly Stover trophy was won by W. J. N. Jenks.

**The West Kentucky Coal Bureau**, meeting on Sept. 8, at the Seelbach Hotel, Louisville, Ky., for the first time since June, handled some routine matters, named K. U. Meguire, of the Dawson Daylight Coal Co., a member of the Executive Committee, and wound up the meeting without much of interest developing.

## Obituary

**E. R. McClelland**, for many years identified with the Caperton interests in the New River field and superintendent of the Brooklyn mine of the Scotia Coal Co., at Finlow, in Fayette County, W. Va., was killed in an accident at the mine during the last week in September. He was accompanying General Manager Gaston Caperton on an inspection trip through the mines at the time of the accident. Observing the approach of a motor trip of mine cars and fearing for the safety of Mr. Caperton, Mr. McClelland was too late in reaching one of the safety holes along the entry and was struck by the motor and killed instantly. He was 34 years of age.

**George B. Beatty**, head of the Beatty Bonanza Coal Co., Kansas City, Mo., died at his home in Kansas City, Sept. 26. Mr. Beatty operated mines at Higginsville, Mo., and in Arkansas, and had been in the wholesale and retail coal business in Kansas City forty years. He was born in Georgetown, Ky., seventy years ago. He is survived by his wife, two daughters and two sons.

## Coming Meetings

**American Gas Association.** Annual meeting, Oct. 12-16, at Atlantic City (Steel Pier), N. J. Secretary-manager, Alexander Forward, 342 Madison Ave., New York City.

**National Conference of Business Paper Editors.** Annual meeting, Oct. 14 and 15, at Congress Hotel, Chicago, Ill. Secretary, D. G. Woolf, 334 Fourth Ave., New York City.

**Kanawha Coal Operators' Association.** Annual meeting, Oct. 15, at Kanawha Hotel, Charleston, W. Va. Secretary, D. C. Kennedy, Charleston, W. Va.

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**American Welding Society.** Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting, Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**Illinois Mining Institute.** Fall meeting, Nov. 6 and 7 at West Frankfort, Ill. Secretary, Frank F. Tirre, St. Louis, Mo.

**Harlan County Coal Operators' Association.** Annual meeting, Nov. 18, at Harlan, Ky. Secretary, E. R. Clayton, Harlan, Ky.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering.** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

COAL AGE

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## You Cannot Browbeat an Economic Law

OF COURSE, the anthracite operators seriously fear a possible wage increase or any change in working conditions which will raise the price of anthracite coal. They are having trouble now in holding their market. Oil, coke and bituminous coal are coming in where they never came in before. Any increase in price will make anthracite still harder to sell and will narrow its market. The public will buy the cheaper article when the price goes low enough to offset, in its opinion, the advantages of hard coal.

In other words, the operators are up against an economic law. Moreover, they know that they are "up against it." How long before the miners wake up to the fact that they too are up against the same economic law? Its operation is inevitable: Less sales, less mining; less mining, less work. And eventually the result will be, if prices continue to rise: no sales, no mining; no mining, no work.

Even under present conditions, without any new increase in wages or additional burdensome working conditions, the operators, in order to hold what markets they have, must secure the utmost economies in operation. But the major economic law that stares the industry in the face is the thing that cannot be escaped and must be appreciated by both parties to the industrial partnership—operators and miners. The operators have an appreciation of it. The miners need to wake up.

Labor unions may be able to force exemptions from legislative bodies, but they cannot browbeat an economic law.

## Day Wage and the Public

WHENEVER COAL STRIKES agitate the public, as well they may, the question asked is: What do miners receive? The answer is not any too satisfactory. The inquirer is told that the lowest day wage is $4.62 or $7.50 as the case may be, but he becomes suspicious when the informant cannot give actual daily wages for the most numerous bodies of workers—miners, mine laborers and loaders. "There is something queer about this," he feels. "I know the wages of bricklayers and plasterers, why this difficulty in ascertaining miners' wages?"

So he is quite greedy to hear what Mr. Lewis, the mine workers' champion, has to say. Mr. Lewis quite plausibly bases his statement on the U. S. Coal Commission report, overlooking the fact that this Commission was unable to follow the miner from job to job and so shows far more men at work in mining than the mines contain and the wages per man per year much lower than the mine workers actually receive.

If each man had a day wage there would be less dispute and that is what we are coming to, as machines are being introduced. When the mines are mechanized so as to make the work easy all men will be paid, it is to be hoped, a day wage. When any one is asked what is the wage, the answer will be forthcoming without any dubious note or lengthy explanation.

Some have doubted whether a day-wage mine can be made successful, but the attempt to run a mine that way has been tried, and both men and management are enthusiastic. Not a tonnage man is on the job, and every man employed is sure that whether the mine cars come or fail to come promptly he is assured of a certain day's pay. The operator has accepted the uncertainty in place of the miner, and there is no sign that he regrets his choice.

## Clean Up Airways

IN MINES where men are allowed to travel the haulageways, the other air passages, whether intake or return airways, are permitted too often to become cluttered with fallen rock, making the burden on the fan unduly heavy. In many cases this rock is removable only with difficulty because the rails have been lifted, and concrete stoppings make the airways relatively inaccessible. They become unsafe and difficult to travel so that after a while no one cares to traverse them. Eventually their condition becomes so bad that the fan has to be speeded up.

It would be more profitable to keep such places properly cleared. The falls being removed, the airway would be enlarged, and ventilation would be aided rather than hindered. Many a mine becomes progressively difficult to ventilate because of the continued decrease in the capacity of the airways owing to falls and to the heaving of the floor. As the cleaning of such air passages is expensive the work on them is delayed in time of low coal price so as to cut cost. When there is a demand for coal, the job already has become too large for any one to attempt without risk of running up the cost unduly. Moreover, the handling of rock requires the labor of men who might otherwise produce coal and absorbs the capacity of cars that might be used for the haulage. Furthermore, the rock cars absorb the capacities of the haulageway, shaft, and motive power and cause delays on the surface. So the job is again delayed and in the end is never performed.

Cleaning up airways is a part of normal operation and should be so regarded. Delay in performing such work should not be tolerated unless either there is a prospect that a new shaft will be sunk that will make the airway useless or there is a likelihood that the airway will shortly be dispensed with and the pillars drawn. Even then a clear airway will make the pillar drawing easier and will enable the coal to be removed free of pieces of broken débris.

Ventilation is a continuing operation, a constant drain on the operator's pocket, and should be met by persistent vigilance. In most mines few see the condition of air courses. They are not places that managers or executives visit, and it is in them, often, that hundreds of dollars of wasted power are concealed in the interest of temporary and fancied economy. Cleaning up airways is one of those longer-visioned economies that subordinates are apt to overlook in their efforts to keep down the charges on the daily cost sheet. "Men come and go," say they, "why worry about future ventilating problems?"

With instruments that measure water gage and power consumption, however, the progressive wastes in airways which become cluttered with rock can be watched and appropriate action taken.

## Small Cars, Low Profits

NO NIGGARDLINESS is more expensive than to use cars smaller than roof conditions make necessary. A railroad using the equipment of twenty-five years back would be in the bankruptcy courts, but many mines are still struggling along with the equipment that was modern a quarter century ago, when cars were built, high, short and narrow. A modern car reduces gathering charges, gives the miner a better opportunity for loading and lowers main-haulage costs. A mine with a narrow gage can make no better investment than to relay the track, scrap the cars and locomotives and buy standard equipment, large enough to justify introducing the new constructional improvements such as housed wheels, spring draft rigging, roller bearings, etc., that go with such cars.

There are limits, of course, especially in gaseous mines and in those with weak roof. Where brattice cloth is used at the face of entries a wide car may leave insufficient room for the intake or return current and for the posts by which the brattice is sustained, particularly where the roof is such as to make the entry and crosscuts narrow. But it is evident that small cars are often used where there are no such reasons for keeping their size down to existing limits.

Where a company has a narrow gage all its newly purchased equipment as well as its old must conform with standards out-of-date, unduly expensive and unprofitable in operation. Hence a change must be made sooner or later in the interest of economy, so why not make it now? By not delaying, the advantage can be obtained at once. Surely if the mine is going to continue producing for years under present methods it does not pay to delay making the change, thus deferring the profit and making the revision, when it does come, the more expensive. Unless methods of mining are radically changed never will the trackage be shorter than now, never will the number of cars, frogs and switches be less than today.

With mechanical aids comes a demand for larger cars and an opportunity for concentration. The latter assures a reduction of trackage, and when that is made it is a good time to change gages if they are too narrow. No one who tries out mechanical aids in loading, whether loaders or conveyors, really knows what these can do if the tests are made with inadequate cars.

Some years back, Samuel Dean, an English engineer, long domiciled in America, said to his British friends in a technical paper delivered in England that the reason for American efficiency could be found in the large car. His suggestion is still good, though he has been dead many years. Why trifle with problems of loading, transportation, hoisting and dumping by using cars of inadequate size?

## Pooling Experience

THE annual meeting of the West Virginia-Kentucky Association of Mine, Mechanical and Electrical Engineers will probably not be held this year. This cancellation is to be regretted. In a time like the present, when rock-bottom costs are essential, conferences of mine mechanics and electricians are of their greatest value.

Operators are depending on developments of mechanical and electrical equipment to reduce production cost. Selection, installation, inspection and maintenance of that equipment are all highly important factors contributing to the overall net result—lower cost per ton. Theory is valuable but experience is absolutely necessary, although sometimes costly. Men who must learn everything first-hand instead of profiting by the failures and successes of their neighbors are limited in the service they can render.

Meetings of virile associations of technical men offer them opportunities to increase their value to themselves and their employers. Operators the country over should see to it that such associations *are* kept virile. They can do this by sending one or more men from each mining company instructed to contribute freely of the company's experience—and to bring back worth-while ideas. The cost of sending these men should be a sound investment.

## Put Yourself in His Place

OPPOSITION TO MACHINERY is not unnatural. The miner who sees a machine which enables one man to do two men's work naturally anticipates that one man is likely to be dropped and is opposed to the improvement. Clever managers arrange that this shall not happen.

At most mines men are drifting away all the time. As a rule these drifters are not the most desirable men, and if no attempt is made to hire new employees the force gradually decreases automatically. Men, in fact, soon cease to apply for work. The word goes around that none are being hired, and they look elsewhere, perhaps in some other promising industry.

Now, with the force already decreased, so that machine operation is necessary to fill orders, the machines can be introduced without opposition. No one sees them as a threat but as a promise of steadier work, because of the low-cost production they assure. The machines are started without an excess of men being employed on them, and they work at maximum efficiency. The psychological conditions consequently are right. Because of the way it is introduced there is no antipathy to the machine and as it insures steadier work and lightens toil everyone is pleased.

Every operator should put himself in the miner's place. What would he do if he handled pick and shovel? He then will use excellent judgment in making innovations and see that they help instead of harm the employee.

In fact, would it not be well at times of low production to decrease the number of miners? It is true a large force of men insures a speedy loading of cars and less delays in transportation, but on the other hand it increases the area that must be kept under development and it destroys morale. After all, that latter factor is not to be undervalued. One may as well run a machine without lubricant as to handle humanity without morale.

# Face Conveyors Work Better in Longwall Mining Than with Half-V Plan at Sweetwater

CONVEYOR HAULAGE of coal from face to entry is getting an interesting trial in the Sweetwater mine of the Gunn-Quealy Coal Co., in Wyoming. For a year conveyors have been used under several experimental systems, getting 100-per cent extraction. A modification of the V system was tried first, and lately, a plan of longwell mining. Roof troubles, handicapped the first scheme because the half-V's could not be worked fast enough. The longwall method, however, cleared up roof difficulty because of greater concentration of mining and swifter progress. About 10 per cent of each fall is shot directly onto the conveyors, thus lessening hand work. The company is still perfecting its system. Glenn A. Knox, superintendent of the company's operations, at the last meeting of the Rocky Mountain Coal Mining Institute described his experiments thus:

"The coal in this mine has an average thickness of 6 ft., 3 in., and lies on an average pitch of 5 deg. The roof is a sandy shale of medium hardness and has been generally considered as good top for the room and pillar method of mining.

"When our company became interested in conveyors, I visited most of the mines in the East where conveyors and other methods of mechanical mining are in use, and decided that a modification of the V-system in use at the Norton, W. Va., mine would be the most feasible for our conditions. We installed 300 ft. of conveyor as an experiment to see whether our roof could be handled on long faces. This 300 ft. was installed as two separate conveyors, one as a face conveyor 100 ft. long, the other as a heading conveyor delivering coal into mine cars on the main entry.

"This face, shown at *A* in the accompanying drawing, was worked directly on the strike and down the pitch. This did not prove to be a success as the caving of the roof carried over to the working face and necessitated propping between the conveyor and the face. It was also necessary to shovel coal onto the conveyor up the pitch. After working this face for 200 ft. we installed two conveyors at a place adjoining the worked-out block, but on a half V-shaped face as shown at *B* on the drawing. This block of coal was 60 ft. wide. This method proved to be successful. We cut a place, moved the conveyor against the face before shooting and carried two rows of cribs between the conveyor and the cave. The roof was caved every second cut.

"After working out this block we were satisfied that this system was feasible for our mine. We then ordered 1,200 ft. more conveyor of the same type as the trial section with a few modifications. We then installed this 1,500-ft. unit on the four faces, *C*, *D*, *E* and *F* on the sketch, with approximately 100 ft. to each face, 200 ft. on each heading and 300 ft. on the main conveyor lines that delivered the coal into the pit cars at the points *G* and *H*. We also had a head section and a rear section for each of the four advancing places shown.

"As sections were taken out of the heading conveyors they were installed on the face conveyors, and, when the faces approached it, the main conveyor was taken out and installed in the next uphill or main-conveyor place. The roof caved very well in the straight line of the points and was broken about every 20 ft. We encountered no trouble unless we permitted one of the points to get behind.

"The maximum possible production by this method was estimated at 725 tons a day, assuming that all places were cut and cleaned up in one shift, and this we attained for several consecutive days.

"While this was a success from a cost standpoint, we felt that we could get a greater tonnage from the same length of conveyor if we changed over to a longwall method, using one face 250 ft. long with not more than

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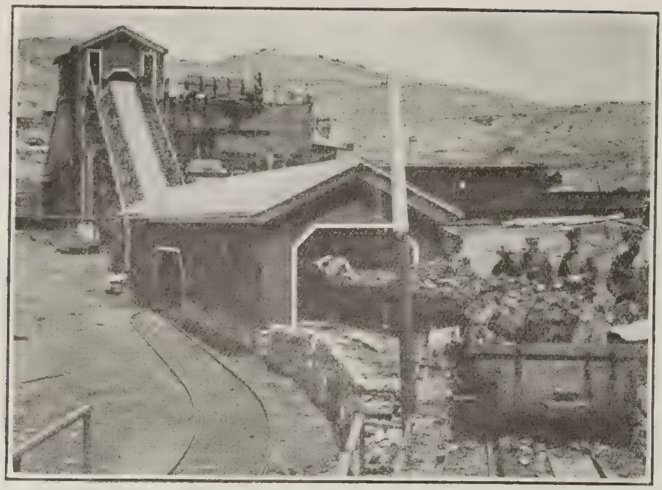
The headpiece shows Sweetwater village, south of Rock Springs, Wyo., where conveyor history is being made. The coal comes to the tipple by a long endless rope, where it is lifted by an apron conveyor to the requisite loading height. For use at this mine the superintendent, Glenn Knox, invented the box-car loader which goes by his name. It was described in *Coal Age*, July 2, 1925, page 17. This loader is an ordinary picking and loading boom lying between the railroad tracks which can deliver to open cars, if necessary, or to another boom resting between the tracks and so designed that it can in turn deliver the coal through the open door of a box car into the hopper of a box-car loader which duly delivers the coal on the car floor.



**Tipple and Screen House at Sweetwater**

Coal is dumped over an end dump onto a bucket conveyor. Many of the cars now have end and side plates, so that the tonnage they will carry when machine-loaded is increased 33 per cent or from 3,000 to 4,000 lb.

500 ft. of conveyor in use. We have been working on this plan for the past four months.

"We started this method at the point *J*, and tried to keep the cave from 20 to 25 ft. from the face. This did not prove to be a success and after we had gone only about 50 ft. the roof rode over the cribs to the face, forcing us to abandon it. We then installed two face conveyors of 250 ft. each in the place marked *K*, one face working out to *L* where some coal had to be abandoned and the other moving in the opposite direction to *M*. We adopted the plan of caving the roof every second cut and have been working on that plan ever since with good success with the roof.

"We set a row of breakers with props 8 in. or larger in diameter, about 18 in. apart in a straight line the entire length of the face. Cribs made of rejected railroad ties were placed about 15 ft. apart the entire length of the face. This gives us a crib 2 ft. 8 in. square. These cribs are set on about 6 in. of bugdust. It is seldom that they take any weight. They are used only when some unusual condition causes the roof to ride over the props to the face. In such cases they are employed only to protect the machinery and men. We have produced an average of 359 tons every working day for the past month and the mine has worked every day except Sundays. One long face with necessary development work operated every day has yielded enough coal to take care of our business.

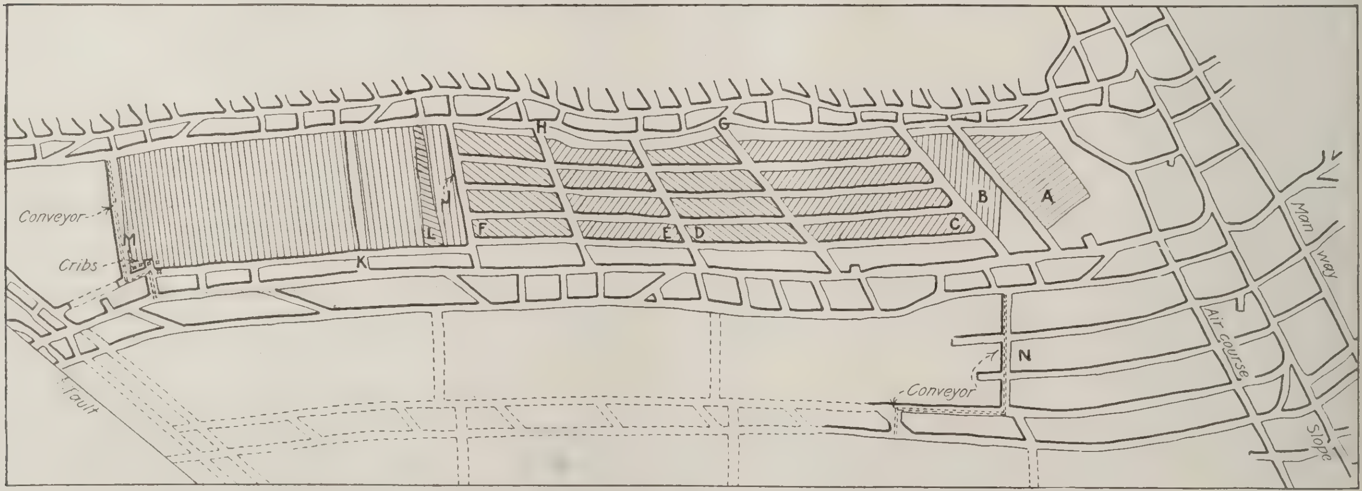
"It is my opinion that this method of mining should be kept going every day if possible. If it is permitted to stand still for a few days the roof will gradually settle and break along the face. This is true also of the half-V method. We did not get along well by working it only two or three days a week. The longwall system is a more flexible proposition, for either one or more faces, as the market may dictate, can be worked continuously.

"We have 1,000 ft. of conveyor temporarily out of use while it is being installed in two other places, one of which is shown on the sketch at *N*.

"We first began producing coal from the trial conveyor on Sept. 6, 1924. Since that time we have produced a total of 64,804 tons without hurting a man. The recovery has been 100 per cent, as we have aver-

**Apron Conveyor Brings Coal to Required Elevation**

Returning run can be seen beneath the conveying run. All sizes are carried up together ready for sizing on the tipple.



**Mine Workings Where Sectional Conveyors Are Being Tried**

Trials were first conducted on a small scale to test roof action. After working two places shown at *A* and *B* it was believed that the roof could be controlled successfully. Accordingly, more conveyor was procured and mining with it started on a far more ambitious scale, four faces, *C*, *D*, *E* and *F* being worked. These were worked out, all but some small stumps, and a longwall face was tried at *J*. At present a longwall face is being worked at *M* and another similar face made ready at *N*.

**The Tipple Has Four Load Tracks at the Sweetwater Mine**

The principal commercial sizes in the Rock Springs area are 8-in. lump, 8-in. mine run (all below 8 in.); 5-in. or 3-in. lump coal; 5 x 3-in. stove coal, 5 x 1½-in. and a 3 x 1½-in. nut coal; 1½-in. slack and 1½ x ¾-in. pea coal or prepared slack and ¾ x 0 dust. The dust goes to smelters.

aged between 1,600 and 1,700 tons per foot per acre. The expense of maintaining these conveyors has been practically nothing.

"Each face, heading and advancing conveyor is run at a speed of 30 ft. per minute and driven with a 15-hp., high-starting-torque type motor, the speed of which is 900 r.p.m. The speed is cut down by a right-angle speed reducer. The main conveyor, when used on the half-V method, was driven at a speed of 90 ft. per minute and with a 50-hp. motor of the same type. The conveyors are made up of 6-ft. sections and all sections in heading, face and main conveyors are of one type and are interchangeable.

"In shooting a long face, we begin at the upper end. The holes are placed 10 ft. apart and we then start the conveyor and fire the shots one minute apart, keeping the conveyor running continuously. We find this practice to be highly satisfactory. When working it on the half-V system, we shot the coal down onto the conveyor the full length of the 100-ft. face while the conveyor was standing still. We had no trouble in starting the conveyor with this load. Under our present longwall plan approximately 10 per cent of the cut is loaded out without being handled with shovels. The conveyor is placed directly against the face before shooting.

"The conveyor now in use is constructed along rather heavy lines and will withstand a reasonable fall. We never have damaged a section by shooting the coal onto it. We are working this system under 500 ft. of cover. The surface has shown no displacement or sign of settling.

"I do not believe the percentage of the different grades of coal produced by our various methods varied much, as the advantage in shooting or working the long faces is overcome by the breakage in handling it with the conveyors."

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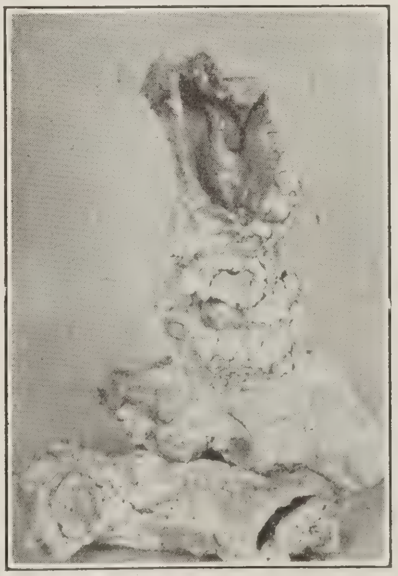
## Freak Results from a High-Tension Ground in Illinois

The accompanying illustration shows the result of one phase of a high-tension line coming in contact with the ground. During a thunder storm in August, 1923, one wire of the 33,000-volt power line extending between mines Nos. 11 and 16 of the Old Ben Coal Corporation, located at Christopher and Sesser, Ill., respectively broke at an insulator allowing both ends to fall to the ground. The current seemed to pass from the end of one wire through the earth to the end of the other and thence on through the line.

At several points each of the fallen wires rested on small tree stumps that thus formed a connection between them and the ground. These stumps proceeded to burn out and the peculiar formation here shown was the result of the sand and soil fusing at its contact with the stump roots. As far as this fused formation extended into the earth the roots were completely burned away. Below this point the wood was badly charred while still farther down it appeared to be little harmed, retaining its woody characteristics.

The material of which this formation is composed is an impure glass or slag somewhat resembling the fulgurites sometimes formed where lightning strikes in sand. The soil, doubtless, acted as a flux for the sand it contained thus assisting the fusing process.

Incidentally, after the storm was over and the line was being repaired, an opossum was found dead between the points where the wires touched the ground. To all appearances, being inexperienced in the manipulation of high-tension transmission lines, he came out to investigate what all the fuss was about. And, like the inquisitive dog who once smelled of a third rail, he "got a nose full of information."



**"Juices" Wild Did This**

When a high-tension power line broke, each end fell on a little tree stump. The current apparently passed through the ground from stump to stump for a period until power was shut off. Each stump with most of its roots was burned out and sand in the soil was melted into strange shapes such as this, the dirt acting as a flux.

# Large Electric Hoist Has Air-Operated Contactors

## System of Control Is Similar to that Used in Railroad Electrification —Switches Are Closed by Compressed Air Acting Against a Powerful Opening Spring — Has Complete Set of Protective Devices

**By J. E. Borland**

General Engineer, Westinghouse Electric and Manufacturing Co.,
East Pittsburgh, Pa.

For many years electric drive has been generally recognized as the most satisfactory and economical method of operation for mine hoists, and there are now hundreds of electrically driven hoists of all capacities in service. For new installations the electric drive has become most common and many existing steam hoists have been advantageously remodeled to use electric power. It is only under exceptional conditions that any advantage can be found for other possible forms of drive.

This general use of electric hoists has been brought about largely through the extension of power service, and the resulting widespread use of electric power in the mining industry. Improvements in methods of control, also, have contributed greatly toward the prevalence of electric operation of hoists.

The three general systems of electric hoisting are: (1) the wound-rotor induction motor with rheostatic control. (2) The direct-current motor with variable voltage control and supplied by a synchronous motor-generator set. (3) The direct-current motor with variable voltage control and supplied by an induction motor-generator set provided with a flywheel for load equalization.

The induction motor with rheostatic control is the simplest type of equipment for an electric mine hoist, and under ordinary conditions the most economical in operation. Magnetic control equipment has proved successful in the capacities for which it has been developed. For large motors, however, variable voltage control, with the added expense of a motor-generator set, often has been considered necessary because of the magnitude of the main currents, even though other conditions favored the use of an induction motor. Such conditions will generally be found with large capacity hoisting cycles with a heavy load per trip from a deep level. In such cases the accelerating and retarding periods are a comparatively small part of the total hoisting cycle. On hoists of this chracter, motor ratings of from 1,000 hp. to 2,000 hp. often are required, and contactors of high capacity are necessary if the main motor currents are to be controlled directly.

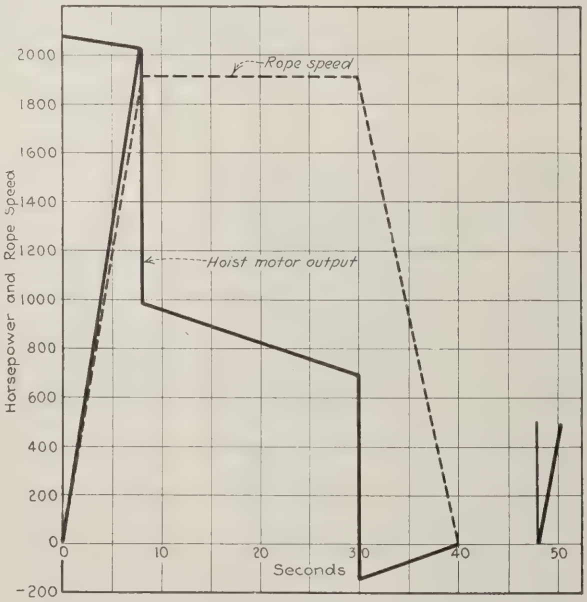


**Fig. 1—A Fast Hoisting Cycle**

Although the hoist is operated in balance the horsepower required is large. The depth of the shaft is 989 ft. and the maximum drum speed 60.5 r.p.m.

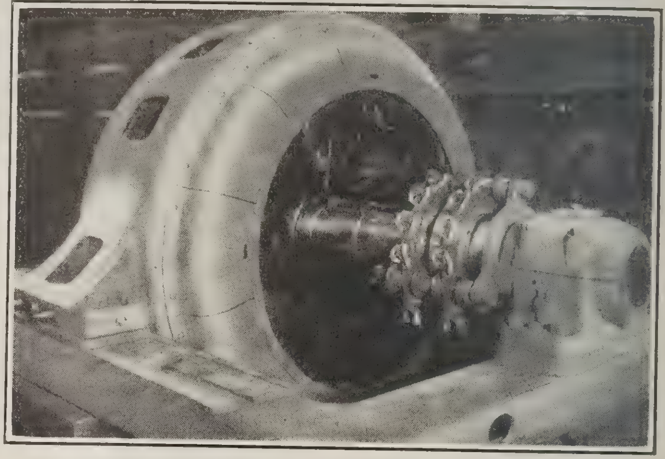


**Fig. 2—Pedestal Type Hoist Motor**

The shaft of the rotor is made long so that inspection of the rotor or stator winding can be made readily by moving the stator in an endwise direction.

A novel and interesting application of control for a large mine hoist is the equipment recently installed at Shaft No. 4 of the Lehigh Coal and Navigation Co. The duty cycle upon which the capacity of the electrical equipment was based is shown by Fig. 1.

For this service a wound-rotor induction motor having a continuous 40-deg. C. rating of 1,200 hp., 300/293 r.p.m. was selected to operate from a 2,200-volt, three-phase, 25-cycle power supply. The motor is of the pedestal bearing type, similar to that shown in Fig. 2, and was supplied with two pedestal bearings but without base; being mounted on an extension of the hoist bedplate. The frame of this motor is a single casting and provision is made for shifting it in a direction parallel to the shaft a sufficient distance to uncover the rotor winding and facilitate inspection or repair. The motor is provided with a shaft extension which is connected through a flexible coupling to the pinion shaft of the hoist.

This installation is of interest mainly in the application of the electro-pneumatic system of control for the 1,200-hp. induction motor. Electro-pneumatic control has been used for many years on heavy traction, street railway and subway service, and has gained high reputation through its strong construction, positive operation and low maintenance. This type of equipment is well adapted to control of large induction motors on heavy-duty service.

The main circuit switches of the hoist controller are electro-pneumatically operated, each switch being closed individually by air pressure acting on a piston opposed by a powerful spring. Compressed air is admitted to and exhausted from the switch cylinders through electrically operated valves which are governed by the master controller in conjunction with automatic current limiting and protective relays. Strong forces are exerted which insure positive and rapid action of the switch, with a quick break on opening and heavy contact pressure in the closed position. The movement of the switch contacts is such that arcing occurs mainly on the tips of the contacts and on the arcing horns, thus leaving the current-carrying surfaces relatively smooth and clean.

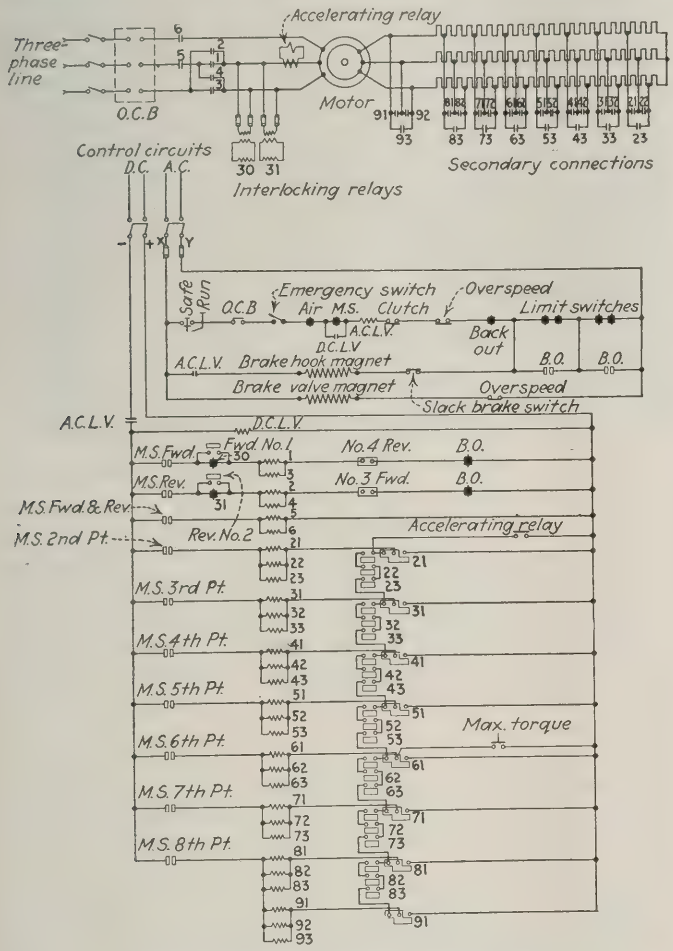


**Fig. 3—Control Wiring Is Simplified**

Many features designed to make possible safe and quick control of the hoist have been incorporated here. Accelerating relays, limit switches, overspeed relays and other necessary devices which have made electric hoists so efficient and safe have also been included in the control system.

The main control circuit providing excitation for the magnet valves of the main switches is taken from a separate source of direct-current energy at low voltage. The magnet valves are small and the power consumed is negligible. Operation of the electro-pneumatic switches is entirely independent of any variation of voltage on the main alternating-current line, and reliable operation is obtained over a wide range in air pressure.

Each electro-pneumatic switch is a unit in itself, and may be removed independently from the supporting structure without disturbing adjacent units. All parts subject to wear are located so as to be readily accessible for inspection or replacement.

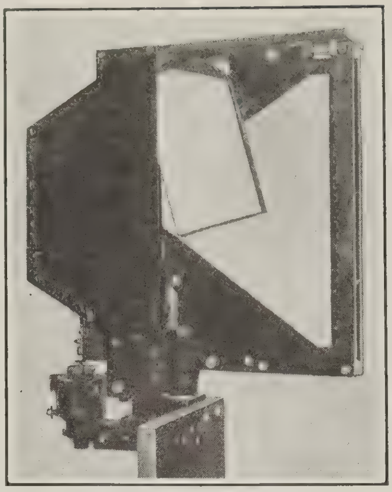


FIG. 4

**Electro-Pneumatic Switch**

Normally the switch is held open by means of a spring and is closed by compressed air pressure. The primary switch is provided with arc chutes and blowout coils.

For reversing the direction of rotation of the hoist motor six primary unit switches are used. The detailed construction of these switches is shown in Fig. 4. Each primary switch has a rating of 500 amp. and is insulated for 3,000-volt service. A correctly proportioned blowout coil, pole pieces and arcing horns on each switch insure positive rupturing of the arc. Each switch is equipped with an arcing chute of heat-resisting material in which the arcs are extinguished.

The primary reversing switches are mounted in a substantial structural steel framework as shown by Fig. 6. The six switches are arranged in three two-pole elements, the two units of each element being mechanically connected together so as to operate simultaneously. One two-pole element is closed at every opera-

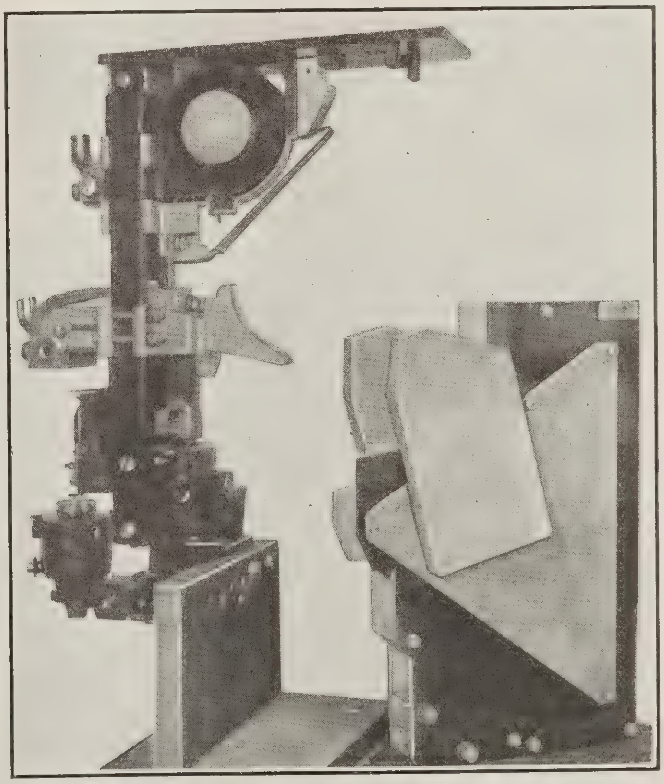
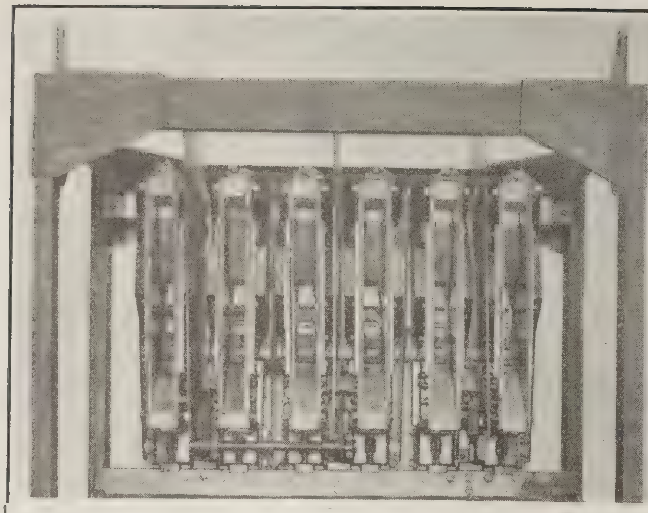
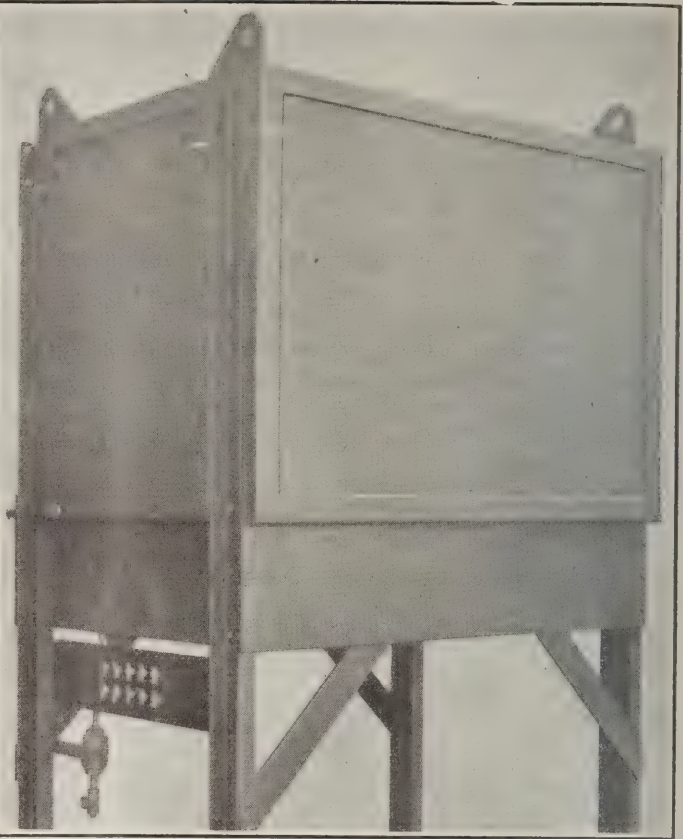


**Fig. 5—Arc Chute Removed from Primary Switch**

Long troughs made of insulating material hold the arc from damaging adjacent parts or other switches and yet cause the arc to break quickly.





**Figs. 6 and 7—Primary Reversing Switches**

These illustrations clearly show how the high voltage switches are grouped and protected. An air pipe extending underneath the switches connects to the air cylinder which closes the power circuits.

tion while the other two elements are used to reverse one phase of the primary, and are closed alternately, for the two directions of rotation.

A strong mechanical interlock is provided between the two two-pole switch elements used for reversing, and in addition a system of electrical interlocking is used as shown by the controller diagram. This consists essentially of two small transformers having their high-voltage windings connected across one phase of the primary circuits, between the reversing switches and the motor, and the low-voltage windings connected to the operating coils of two normally closed relays designated as Nos. 30 and 31 in the diagram. The normally closed relay contacts are connected in series with the operating coils of the reversing switches, so that if an arc tends to hang on after opening of a primary switch, the relays remain energized as long as potential exists on their coils, and as the relay contacts are held open under this condition the control circuit to the reversing contactors is broken. These features effectively prevent the closing of one set of reversing contactors until the opposite set has opened and the arc has been completely extinguished.

Special inclosing covers are used on the primary switch group to muffle the noise which is characteristic of all high-voltage air-break contactors. The appearance of the primary switch structure with covers in place is shown by Fig. 7.

Twenty-four unit switches are provided for acceleration of the motor by short circuiting sections of grid resistor connected in the rotor circuits. These switches are of the same general construction as the primary switches, but are insulated for 1,500 volts and are furnished with arc chutes only, blowout coils being unnecessary, as the switches do not open the circuit. Each secondary switch has a rating of 800 amp., and as the switches, in groups of three, are connected in delta on each step, an effective capacity of 1,200 amp. is obtained. Eight steps of resistance are used.

The secondary switches are assembled in three structural steel frames as illustrated by Fig. 8. Inclosing covers are not required with these switches as the only noise attending their operation is the escape of air from the cylinders upon opening.

Operation of the hoist is controlled by means of a small reversing master controller mounted on the operator's platform. By manipulation of this master controller the closing of the main primary and secondary switches is controlled under the automatic protection of the interlocking and current-limiting features previously described. The motor is thus reversed, accelerated in either direction, retarded or stopped, and when operating under load accurate control is readily obtained.

As indicated on the diagram of connections, the magnet valves of the main switches are energized by successive points of the master controller, closing of the secondary switches being automatically controlled by a current-limit accelerating relay, the contacts of which are connected in series with the magnet valves of each step of secondary switches by interlocking contacts on the preceding step. This relay is adjusted to hold its contacts open until the current has decreased to a predetermined value, so that if the master controller handle is moved too rapidly the hoist is automatically accelerated at the proper rate, the relay delaying the closing of successive secondary switches until the current has decreased to the desired value.

To permit starting the hoist under exceptionally heavy loads without changing the setting of the accelerating relay, a foot-operated switch is located on the operator's platform. Closing of the switch short circuits the relay contacts so as to permit closing of the proper secondary switches to obtain the maximum motor torque at starting.

The 2,200-volt incoming line to the hoist equipment is brought through disconnecting switches to a switchboard panel of standard construction consisting of three slate bases with black marine finish supported on 92-in. pipe framework with a channel-iron sill. The panel is provided with a coverplate and operating handle for a manually operated remote controlled oil circuit breaker, which is mounted on the wall at the rear. The oil circuit breaker is rated 500 amp., 7,500 volts, three-pole, single throw.

Overload protection of the hoist equipment is provided by two transformer trip coils on the oil circuit breaker coverplate, and inverse time limit attachments are used to prevent the circuit breaker from opening on high overloads of short duration required to accelerate exceptionally heavy loads. The circuit breaker is arranged to open also in case of low voltage. The switchboard is provided with a polyphase watthour meter showing the power consumption of the hoist.

A simple scheme of control connections is used and the usual safety features are readily included. For protection of the hoist equipment in case of power failure, a double-pole alternating-current low-voltage relay is provided, one pole being wired in series with the direct-current control circuit and the other pole in series with the brake hook magnet so that opening of the relay causes all main control switches to be de-energized and the brake set. A reset contact on the master controller is so connected to this and the direct-current low-voltage relay that the master controller must be returned to the "off" position before operation can be resumed, following a failure of power. This prevents an accidental start of the hoist upon return of power as the master controller must be in the "off" position to reclose the low-voltage relays.

### SAFETY DEVICE PREVENTS OVERSPEED

Protection against overspeed or overtravel at the hoisting limits is furnished by a safety device driven from the hoist drum. Contacts of this device are connected in the alternating-current low-voltage relay circuit so that opening of any safety contact will stop the hoist. A small drum "back-out" switch is used to permit operation of the hoist in the reverse direction only, in case of overtravel and opening of any of the limit switch contacts.

A protective relay is used to prevent operation of the hoist controller if the air pressure should fall below the lowest point in the desirable range of pressure for the electro-pneumatic switches. This prevents closing of the main switches unless strong air pressure is present, and obviates the possibility of faulty operation under insufficient closing forces.

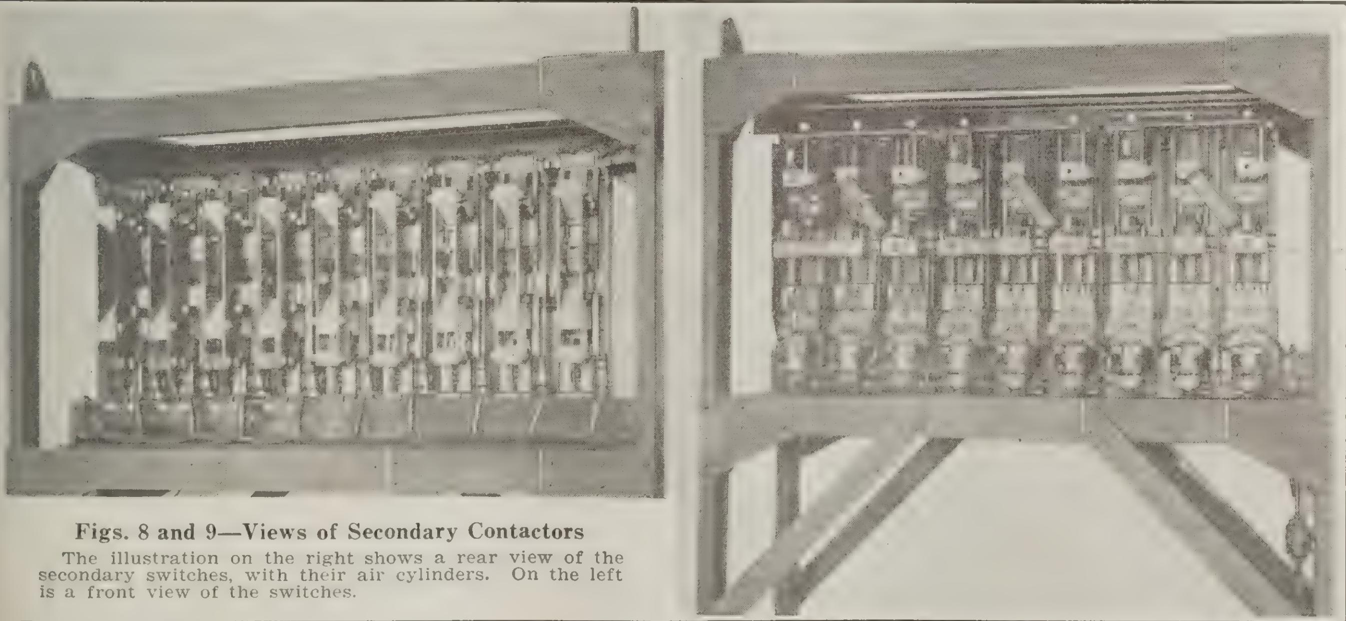
A means of stopping the hoist quickly in an emergency is provided in a safety push button mounted on a panel on the operator's platform. This panel also carries starting buttons for the exciter set and air compressor motor, pressure gages and meters indicating operation of the hoist equipment.

The controller includes grid resistors designed for low torque on the first point with properly proportioned accelerating steps. Resistors of sufficient capacity are used to avoid undue heating during acceleration or speed control of the motor.

### ADVANTAGES OF AUTOMATIC CONTROL

From the foregoing description it may be seen that electro-pneumatic control embodies a number of features desirable in heavy duty service. Reliability in operation and low maintenance costs are insured by the use of main control switches, interlocks and auxiliary parts of substantial construction, following designs that have been proven under severe operating conditions. Operation of the electro-pneumatic switches is rapid and positive and is unaffected by ordinary variations in line voltage. The unit switches are assembled in compact groups supported on steel framework. This form of construction leaves all parts readily accessible, and at the same time simplifies installation of the control equipment. Operation of the electro-pneumatic switches is quiet, as there are no weighty moving parts. The noise which accompanies the breaking of arcs of the primary switches is characteristic of all high-voltage contactors and special covers are provided on the reversing switch group to muffle this noise. With this provision both the primary and the secondary switch groups may be located in the hoist room which avoids the necessity of constructing a separate control room and may result in a material saving in building construction.

The selection of this type of control by the engineers of the Lehigh Coal & Navigation Co. undoubtedly marks a step forward in the practice of controlling large induction motor mine hoists.



**Figs. 8 and 9—Views of Secondary Contactors**

The illustration on the right shows a rear view of the secondary switches, with their air cylinders. On the left is a front view of the switches.

# Triple Shifting Makes Big Stripper Profitable

**By Frank H. Kneeland**
Associate Editor, *Coal Age*
New York City

ABOUT FOUR MILES, as the crow flies, northeast from the Court House in Boonville, Ind., lies a body of coal land half a mile square which attracts attention because stripping takes place there on a three-shift basis that has resulted in marked economy of operation. It is the Sunlight Coal Co.'s plant. This is one of the few coal operations in southern Indiana or in the Middle West, for that matter, that worked regularly six days per week most of the summer. The big electric shovel removing the overburden runs day and night. The small loading shovel, however, can load out as much coal in one shift as the stripper can uncover in three.

Two factors are mainly responsible for the operating economy which has enabled this strip mine to keep working in a time when most neighboring plants ran part-time or not at all. First, triple shifting keeps the stripper busy throughout the entire day, thus cutting to one-third the hourly overhead charge entailed by the cost of this machine. Second, the use of electric power greatly reduces the cost of labor necessary for this shovel's operation.

The overburden stripped in this operation consists of sandstone, shale, slate and surface soil. It ranges in thickness from approximately 25 to 50 ft. The coal uncovered is from 6 to $7\frac{1}{2}$ ft. thick, is free from partings and lies approximately level, that is, without any general dip.

To facilitate the operation of the stripper, the overburden is drilled with two gasoline and one electric churn drills. Six-inch holes are put down to within about 1 ft. of the coal. Each of these is cleaned out and slightly sprung with one stick of 4x8-in. 40-per cent dynamite. They are then loaded with about equal weights of this dynamite and *FF* black blasting powder, from 25 to 50 lb. of each explosive being used in each hole according to the depth of overburden encountered. Firing is done with electric detonators.

The coal is drilled by means of compressed air and shot with the same grade of dynamite as the overburden. In this case, however, the sticks of explosive are 1x8-in. while the holes into which they are loaded are 2 in. in diameter. Air cushioning to some extent is thus obtained and the shattering effect of the explosive on the coal is lessened accordingly. After shooting, the coal is loaded direct into railroad cars by a steam shovel fitted with a dipper of $1\frac{1}{4}$ cu.yd. capacity. The railroad cars are run directly into the pit.

The stripping shovel works back and forth along the face taking a width of about 40 ft. of overburden at each cut. The total length of the pit is now about 2,500 ft., this face extending roughly diagonally across the tract from corner to corner—that is, from northeast to southwest.

The stripper is operated by two men: a shovelman and an oiler. The full crew, however, consists of six men and an electrician who works on it only part time. One man gives his entire attention to keeping a record or log of the stripping shovel's operation. He thus records the linear feet of the shovel's advance per

**Uncovering Coal**

*Illustration A shows the big electric stripper of the Sunlight Coal Co. It runs three shifts a day exposing coal for the $1\frac{1}{4}$-yd. steam loading shovel, B.*

**Power by Wire**

*At the left is the end of the 4,000-volt pole line. The sled carrying fuses and an oil switch advances with the workings. The shot-hole drill is shown also.*

**Dumping to the Spoil Bank**

This is a general view of the strip pit showing, in addition to the stripper, the cut made by the loading machine. The track on the coal berm is of standard gage as railroad cars are run in to the pit and filled by the loading shovel.

shift, the number of moves it makes during the shift and the number of dips it takes. He also records the time lost and the reason for any delays. His log is extremely valuable, not only as a record of what actually has been accomplished, but also as a guide as to what may be expected in any depth of overburden encountered.

In order to stimulate the interest of the men in their work, the log man each day chalks up on the side of the underframe of the machine the record of the previous day's accomplishment. Thus on July 17, the record shown in the accompanying table was chalked up, referring to the work of July 16. This shows that the first shift made six moves and advanced the machine 52 ft. The second shift made nine moves and advanced 106½ ft., while the third shift made ten moves with a machine advance of 111 ft. The total for the day was twenty-five moves and 269½ ft. of advance.

**Table I—Machine Log for July 16**

| Shift No. | Moves Made | Distance Advanced, Ft. |
|---|---|---|
| 1 | 6 | 52 |
| 2 | 9 | 106½ |
| 3 | 10 | 111 |
| Total | 25 | 269½ |

Not the least interesting detail of this stripping is the method of surveying employed. The surface is laid out in rectangles 50 ft., each way. Thus every 50 ft., both north and south, and east and west, a stake is driven in the ground upon which is painted the coordinates of this particular station and the elevation of the surface at that point. In the office in Boonville a corresponding plat of the area is kept.

At each advance of the machine, the brow of the cut is measured from at least two of these stakes, a measurement from a third usually being taken as a check upon the other two. The exact position of the machine and its movements for each shift may thus be plotted on the plat in the office. These measurements are taken whenever the machine moves up. Once a month a check survey is made and the approximate results obtained by this method are then corrected.

Interest in this operation largely centers in the big stripping shovel. While this is of a type that is not perhaps strictly new, as several machines of a similar character are already employed in various parts of the country, it is, nevertheless, of a design that will unquestionably be employed far more extensively in the future than it has been in the past.

This stripper is a Marion "350" full revolving electric machine, mounted on four, four-wheel trucks. Ward-Leonard full voltage control is employed on all of the electrical equipment.

Some of the chief dimensions of this machine are as follows: Length of boom, 90 ft.; capacity of dipper, 8 cu.yd.; length of dipper handle, 56 ft.; maximum height of dump with boom at 45 deg., 67 ft. above the rail; maximum radius of dump at maximum height, 97 ft.; maximum radius of dump, dipper handle horizontal, 101 ft.; height of dump, handle level, 47½ ft.; radius of cut at grade (1 ft. below top of rail) 69 ft.; radius of cut at 40 ft. elevation, 106 ft.; extreme height of boom above top of rail, 80 ft.; extreme radius of boom from center of shovel, 97 ft.; approximate working weight, with ballast, 890,000 lb.; ballast for upper frame, 180,000 lb.

The extreme height of the A-frame from top of rail is 51 ft. 10 in.; length of upper frame, 46 ft. 10 in.; width of upper frame, 21 ft. 8 in.; clearance radius of rear end of upper frame from center, 33 ft.; diameter of roller circle, 30 ft.; size of lower frame, center to center of girders, 30 x 30 ft.; center to center of trucks, 26 ft.; center to center of truck wheels, 3 ft. 3 in.; diameter of truck wheels, 2 ft. 6 in.; capacity of hoisting motor (60 min. rating) 175 hp.; rotating motor, 105 hp.; crowding motor, 85 hp.; hoisting generator, 250 kw.; rotating generator, 75 kw.; crowding generator, 50 kw.; diameter of hoisting cable, 1⅜ in.; of boom hoist cable, 1 in.; number of rollers under revolving frame, 78.

### PLATE GIRDERS FOR OUTER MEMBERS

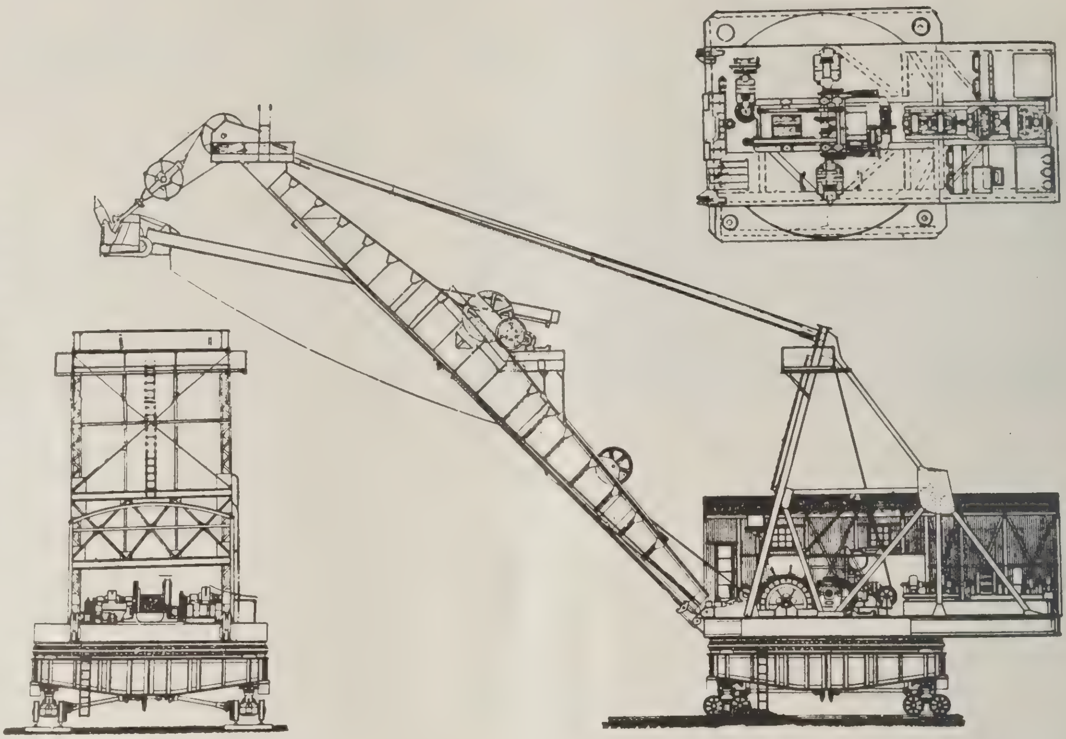
The outer members of the lower frame are composed of plate girders, 56 in. deep at the center. These are braced at the corners with diagonal girders 37 in. deep. Each corner of the frame is also fitted with a heavy steel casting connected to the side, end and diagonal frame members which extends the full depth of the frame. This casting is also arranged to carry a cylinder of the hydraulic leveling device.

The lower frame is mounted on four swiveling trucks, each consisting of an open-hearth steel, frame casting, carrying four double-flanged wheels. All four wheels in a truck and all four trucks are drivers. Each truck is provided with an adjustable chain. This prevents the trucks from becoming totally disengaged from the pistons in the equalizing jacks on the lower frame. The truck castings are provided with bushed bearings for the propelling shaft and the inside wheels are fitted with spur gears engaging the driving pinions. Two sets of track, one at either side of the machine, are necessary.

A patented hydraulic equalizing device, consisting of four cylinders with trunk pistons, circulating pumps and the necessary piping and connections, are provided for the lower frame. These hydraulic cylinders are carried in the steel castings at the corners of the frame, each casting as well as its cylinder being so designed as to form a ball-and-socket joint. This joint permits the truck to traverse curved or uneven track. The cylinders are accurately bored to receive the pistons. Two sets of leather packing prevent leakage. The upper portions of the pistons are turned smooth,

THE BIG STRIPPER

*This gives an idea of the general outline of the machine, but can afford small conception of its size. When the dipper handle is level and thrust forward as far as possible, it is approximately 130 ft. horizontally from the front of the digging teeth to the rear of the shovel cab.*



while their lower ends are threaded to receive safety locking nuts. These may be easily adjusted by hand and are intended to be set up close to the cylinders while the machine is in operation, but to be moved away when it is being moved. In no case should they be set up tight against the cylinders as the machine operates on the fluid within them.

One power-operated and one hand-operated pump are conveniently located on the lower frame and connected to the cylinders with heavy pipes, valves and bypasses so that the fluid may be forced from one cylinder to another, or to the reservoir at the pumps. This equalizing or leveling device gives the flexibility of three-point suspension and permits the machine to be operated or moved over uneven track without subjecting the lower frame to torsional stresses arising from an unequal distribution of weight.

All the wheels of the four, four-wheel trucks are double flanged and all act as drivers. Propulsion is accomplished by means of a jaw clutch which may be thrown in or out of gear as may be desired. The turntable on which the upper frame revolves is of the roller type, consisting of two circles of 175-lb. rail, one fastened to the upper and the other to the lower frame. Between them revolve 78 double-flange rollers. These are of high carbon steel and are held between an inner and an outer strap each of which is rolled to a true circle. They are grease lubricated by means of hand compression cups.

This machine is equipped with a motor generator set, consisting of a three-phase, 60-cycle motor, suitable for connection to either a 2,300- or 4,000-volt line. This drives three 250-volt, direct-current generators; one actuates the hoist motor, one the swinging motor and one the crowding motor. Changes in the speeds of these various machines are secured by voltage control of their respective generators, a suitable rheostat being placed in each generator field. Provision is made for automatically limiting the current in each motor to such a value as will develop the maximum torque desired. Each motor is provided with its individual control panel, the master controllers being located at the operator's station at the front end of the revolving platform. The trip motor, or the one that discharges the bucket, is wound for 115 volts, direct current, energy for its operation being drawn from the exciter. This motor, like the others, is controlled from the operator's station by means of a small hand lever. This is mounted on the hoisting controller. All electrical equipment, such as motors, generators and the like, are grounded to the frame of the machine.

Three 7½-kva., single-phase transformers of 2,300 to 4,000 volts primary, and 110 to 120 volts secondary current, are installed for operating a direct-connected air compressor which in turn actuates the brakes on the hoisting apparatus. Three 1½-kva., single-phase transformers are installed on the lower frame for operating the hydraulic pump and to furnish current to the various lighting circuits.

Two open, mill type, 230-volt, direct-current, series-wound motors are located at the side of the hoist frame and compound geared to the hoisting drum through a friction brake. The intermediate or clutch shaft carries the gears for driving the hoisting drum, the boom hoist drum and propelling mechanism. Clutches provide for disengaging of the propulsion apparatus and the boom hoist drum when these are not in use.

The hoisting drum is grooved for 1⅜-in. rope and mounted loosely on its shaft. It is actuated by an outside air-operated friction band brake, the air cylinder being attached to the spokes of the gear wheel. The friction band is lined with wood blocks and provided with a long take up. The boom hoist drum, mounted at the rear of the hoist machinery frame, is driven by a clutch on the intermediate shaft through a worm and worm wheel, which locks the boom in any desired position without the use of ratchets or pawls.

The rotating or swinging motor is of the open mill type wound for 230 volts, direct current, and is compound geared to the vertical driving shaft.

The boom consists of two main members in the form of plate girders, trussed and braced together by means of bulkheads and top and bottom plates. The rounded boom foot casting is stepped into a foot casting of corresponding design, thus permitting a slight rolling motion of the boom without injury to any of the parts. Cable guys connected at the peak and center of the boom stay it during the start and stop of the swing. The crowding motor is of inclosed mill type, wound for 230-volt, direct current and compound geared to the shipper shaft. The dipper handle is of combination steel and wood type, composed of two wooden members with steel armor plates on both sides and steel bars on top and bottom. It is held to the shipper shaft pinion by means of a yoke or saddle block.

Both the dipper front and the bail are manganese steel castings. The sheave block attached to the bail carries a 60-in. open-hearth steel sheave provided with a finished groove.

All operating levers controlling the machine are located at the forward end of the revolving frame to the left of the boom and so arranged as to be within easy reach of the shovel runner who has a clear and unobstructed view of the work to be performed. The entire machine has been designed to assure ease in handling and speed of operation.

This shovel is operated on purchased current. An outdoor transformer station is located at one side of the property with feeder lines radiating from it toward the open cut. Several points are thus available at a comparatively short distance from the brow of the cut for attachment of the cable leading to the shovel. This cable is connected to the nearest available point and laid over the ground to the machine. Any surplus is wound on a reel at the forward end of the under frame. This cable is of the three-conductor, rubber covered, type and is, perhaps, 2 in. in diameter. Current enters the shovel through the center of rotation.

## Blending of Soft and Hard Coal Feasible

Blending of anthracite and bituminous coals is a matter of dollars and cents, Dr. O. P. Hood, chief mechanical engineer of the Bureau of Mines, states. It long has been done in special cases, he points out.

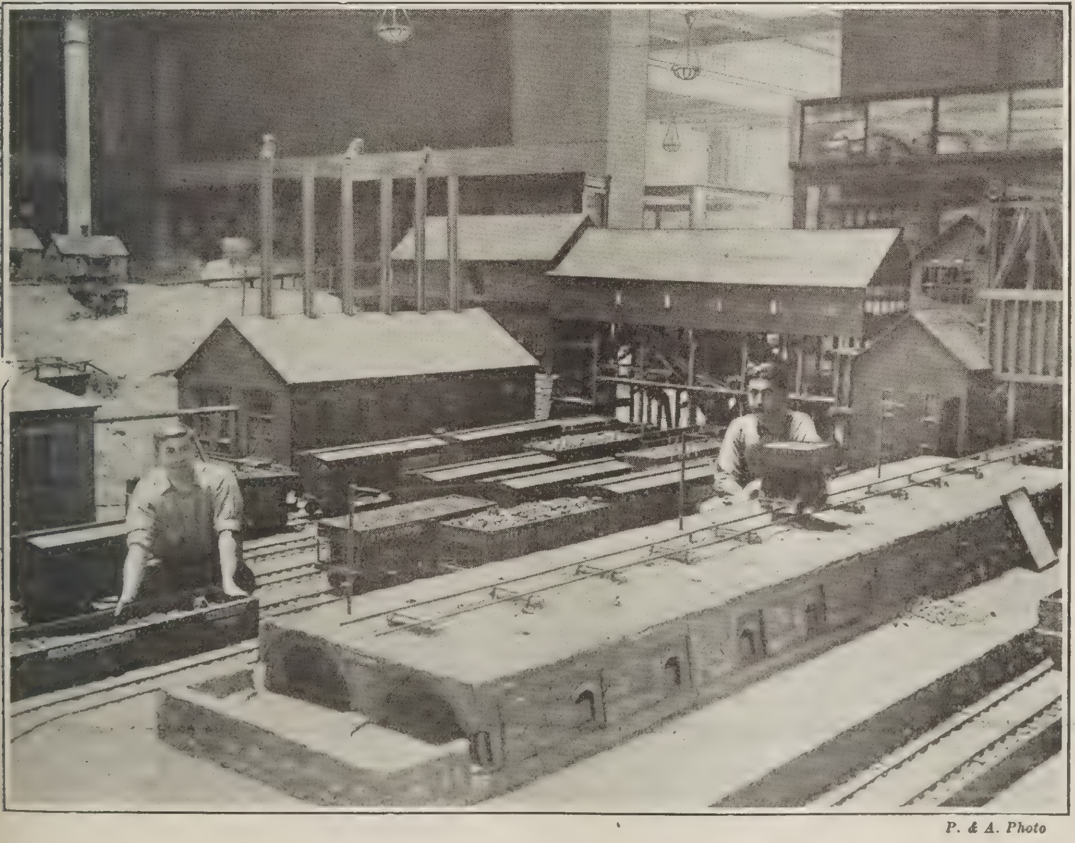
Tests which have come under Dr. Hood's personal observation indicate that no difficulty was experienced in burning 25 per cent of anthracite fines on an ordinary bituminous fuel bed. One shovel in four can be placed and it will make little difference in the control of the fuel bed. As the percentage of anthracite increases, Dr. Hood says, more and more skill is required. Tests indicated that a half-and-half mixture is the limit to which this practice can be extended reasonably. In these tests the blending was done at the furnace by firing from two available piles of coal.

The trouble in using a mixture, Dr. Hood explains, is that the ordinary grate bars adapted for bituminous coal cause holes to form in the fuel bed. A hole over the bare grate cannot be patched by anthracite fines.

Dr. Hood thinks the cost factor will control in the blending of coals rather than the advantages of smokelessness. Consumers of coal, as a rule, are not willing to pay much for that advantage. Much blending of anthracite now is done so as to equalize ash content, Dr. Hood says.

## Deepest Coal Mine in America

No mine in the anthracite region is deeper probably than the Auchincloss No. 1 Shaft of the Glen Alden Coal Co., near Nanticoke, Luzerne County, Pennsylvania, it being 1,697.4 ft. to the Red Ash bed. Coal is being mined at a depth of 1,673 ft. below the surface or at an elevation of 953 below tide. The Auchincloss coal is prepared at the Loomis breaker. This is probably the deepest coal shaft not only in the anthracite region but in the United States.

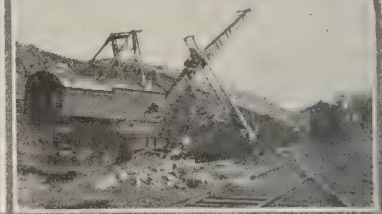


P. & A. Photo

**Big Mine but No Output**

However, it helps instruct the nation in what a coal mine top works and coke-making plant look like. It is a miniature modelled after a Consolidation Coal Co. plant near Fairmont, W. Va. and is now on exhibit in the National Museum in Washington. It is the largest model of a coal mine ever built. The gondolas in the foreground hold 40 lb. of coal each. This miniature, realistic even to the smoke issuing from power plant stacks, is usually surrounded by an interested group of the visitors in the museum which is a part of the Smithsonian Institution. The battery of coke ovens with their charging car extend into the foreground.

# News Of the Industry



## Lewis Seeks Executive Intervention To Forestall Hard-Coal Regulation By Congress, Washington Believes

**By Paul Wooton**
Washington Correspondent of *Coal Age*

What appear to be frantic efforts on the part of the United Mine Workers to bring about federal intervention lead some observers in Washington to think that everything will be done to force the administration to undertake to bring about a settlement before the convening of Congress. Apparently the mine workers sense the fact that regulation in some form is likely to result if Congress undertakes to compose the situation.

Organized labor is just as opposed to government regulation, many believe, as are the operators. William Green, when secretary of the Mine Workers, testified vigorously to that effect before the LaFollette subcommittee of the Senate Committee on Manufactures. Regulation probably would carry with it the fixing of wages by a federal board. This specter probably is responsible for the signs President Lewis is showing that he is apprehensive of Congress.

On the other hand, if he can bring about executive intervention, Congress may not interfere while Coolidge is running with the ball. At least this has been the case during previous strikes. Congress was in session during the strike of 1922, but took no action during the strike because the executive branch was taking active steps looking to a settlement. Congress also was in session during the strike of 1919, but deferred to the executive who had intervened.

### Administration to Keep Out

The apparent purpose of various moves the Mine Workers are making is influencing the administration to be even more determined to stay out. The more Mr. Lewis insists that the administration was responsible for the Jacksonville agreement the less likely it will be to take action which could be interpreted only as an acceptance of that responsibility and as an effort to require compliance with a labor agreement.

Of course it is understood that Mr. Lewis has not played all of his cards and that it is going to require no small amount of political courage for the administration to keep out when the pressure he can bring gets stronger. Just what form the pressure will take has not been revealed. It hardly is supposed that another march on Mingo will be tried, despite the fact that the marches in 1920 and 1921 were entirely successful in so far as arousing Washington was concerned. It is realized that the stage is being set for something and it is not supposed Mr. Lewis will allow the strike to stay much longer on dead center. This is mid-October. In less than seven weeks the gavels will fall at each end of the Capitol.

### Lewis Headed Toward Congress

Instead of involving the executive branch of the government it would seem that Mr. Lewis' tactics are calculated to push the controversy into Congress, where there will not be the same disposition to keep hands off, particularly if New England, New York and Pennsylvania, which will begin to experience inconvenience by midwinter, get nervous about coal supply. The delegations from the anthracite-consuming area have great influence in Congress. December probably will find them in a state of indignation because the people find themselves unable to replenish their anthracite supplies. These delegations are in a position to start consideration of legislative remedies.

There is an increasing feeling that it would be less difficult than heretofore has been supposed to obtain the enactment into law of some form of coal legislation. Coal legislation under circumstances such as are likely to prevail this winter would mean regulation. It might not be drastic in character but it would provide entry for the thin edge of the wedge, which then could be driven deeper and deeper at the whim of succeeding sessions of Congress.

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A. W. Vogtle, traffic manager of the DeBardeleben Coal Corporation, Birmingham, Ala., has been appointed by President Gould, upon the recommendation of Director Yerkes, of Alabama, to the vacancy on the Foreign Trade Committee of the National Coal Association, created by the withdrawal of J. W. Whatley, formerly connected with the DeBardeleben Corporation, who has retired from the industry.

### *New Mine Has Wet Opening*

Memories of pre-Volstead days were vivid in the minds of many present at the recent formal opening of the Faraday Mine of the Pocahontas Fuel Co. Little Miss Jones, daughter of James Elwood Jones, first vice-president and general manager of the company, broke a bottle of fizzy liquid over the first 70-ton railway car loaded to capacity for shipment from the mine. A number of prominent officials of the company and of the Norfolk & Western Ry. gazed thirstily at the young lady during the hallowed ceremony.

Output at the mine is now limited to about four cars a day, as the coal is being shipped from a temporary tipple. Officials of the company state, however, that two new steel tipples will be ready in December and that by January shipments will be at the rate of forty-eight cars a day.

The town of Faraday straddles the West Virginia-Virginia line, lying partly in McDowell County, W. Va., and partly in Tazewell County, Va. The company has built a church, places of amusement and everything essential to livable community environment.

## Maintenance Men Called Out At Madeira-Hill Mines

C. J. Golden, president of District 9, United Mine Workers, issued an order Oct. 7 calling out all maintenance men in the employ of Madeira, Hill & Co., operating mines in the vicinity of Shamokin and Frackville, Pa. Withdrawal of the men was ordered because of the refusal of the company to cease loading stocks of surplus coal at the Natalie colliery, near Mount Carmel. An ultimatum threatening such action was served upon the company a week ago. About 400 men are affected by the order, which became effective last Thursday.

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## French Acquire Rhine Coal Land

A French industrial group headed by the De Wendel Corporation purchased on Oct. 1 from the Krupp interests a large coal tract in the left Rhine district of Moers. The field, which has an area of 7,500 square miles, has never been worked.

## To Fight Lease of Virginian By Norfolk & Western

The Chamber Commerce of Norfolk, Va., has joined the City Council, and the State of Virginia in asserting strong opposition to the proposed lease of the Virginian Ry. by the Norfolk & Western. The basis of the opposition is the belief that the absorption of the Virginian, largely a coal carrier, would mean the elimination of competition in the coal handling business.

The City of Norfolk has underwritten a fund of $5,000 to pay counsel to fight the proposed lease before the Interstate Commerce Commission. Coal men are divided on the question, though many of the most prominent members of the trade oppose the proposed lease.

The two railroads parallel each other a considerable distance from the West Virginia coal fields into Norfolk. The Virginian has no Western connections, being largely a coal line from the mines to tidewater. Business agencies opposing the merger have put forth the opinion that the competition of the two lines now stimulates trade, in view of the fact that much of the Norfolk & Western business to this port is coal. They have expressed the belief that the merger would curtail the business of both lines to tidewater.

The Interstate Commerce Commission has permitted the following companies to intervene in the petition filed by the Norfolk & Western Ry. Co. for authority to acquire control of the Virginian Ry.; Alpha-Pocahontas Coal Co., Covel Smokeless Coal Co., Devils Fork Coal Co., Faith Smokeless Coal Co., Gulf Coal Co., Gulf Smokeless Coal Co., MacAlpin Coal Co., Micajah Pocahontas Coal Co., Miller-Pocahontas Coal Co., Monticello Smokeless Coal Co., Morrison Coal Co., C. H. Mead Coal Co., Nuriva Smokeless Coal Co., Bailey-Wood Coal Co., Low Volatile Consolidated Coal Co., Slab Fork Coal Co., Winding Gulf Colliery Co. and Wyoming Coal Co.

## To Import German Anthracite

German anthracite is to be imported to this country soon, the firm of J. P. Routh & Co., New York City, having made arrangements for the shipment of a quantity. Samples already received are said to compare favorably with Welsh anthracite received here. J. P. Routh, president of the concern, also heads the Riberena Fuel & Chartering Co., which is associated with the Rheinische Westphalian Coal Syndicate and the Deutsches Kohlen Depot. The office of the latter is at Hamburg and the company also has coal depots at seventeen ports on the Mediterranean in Europe and on the Atlantic coast of South America.

Twenty bids were submitted Sept. 30 to the Government Fuel Yards, Bureau of Mines, Washington, D.C., for supplying 20,500 gross tons of bituminous mine-run, principally for shipment to St. Elizabeths Hospital, located on the Baltimore & Ohio R.R. The tenders ranged from $1.40 per ton on 13,500 tons by W. H. Bradford & Co., Inc., to $2.52 per ton on 20,500 tons by the Burtner Coal Co.

## *Orders Wage Fixed Before Machines Are Put In*

Frank Farrington, president of the Illinois union, United Mine Workers, has addressed a letter to the operators announcing that machines must not be put in the mines of that state without prior arrangement with the union as to the scale to be paid. He states that the rate will be in accord with agreement arrived at after consideration of the earnings of the men under previous working methods. It is evident, therefore that settlements heretofore made may not be allowed to govern and that the union may try to make rates in one mine higher than those in another.

## Forty-four First-Aid Teams In Alabama Meet

Forty-four teams from mining and industrial plants in the Birmingham district participated in the annual first-aid meet at Rickwood Field, Birmingham, Ala., Oct. 6. First honors to white teams went to the Empire team of the DeBardeleben Coal Corporation, captained by J. R. McGowen, with a score of 91⅔ per cent. The Coal Valley team of the same corporation carried off second prize with 88 per cent. Third prize went to the Mulga team of the Woodward Iron Co., which scored 87⅓ per cent.

First prize for colored teams was captured by the Mulga team of the Woodward Iron Co., with a score of 84⅔ per cent. The Parrish Mine team of the Railway Fuel Co. took second prize, while third honors went to the Sipsey Mine team of the DeBardeleben Coal Corporation, with scores of 79½ and 76⅔ per cent respectively.

The Townley Mine of the DeBardeleben Coal Corporation won first honors for women's teams, making a score of 80 per cent, the Woodward Iron Co.'s Dolomite team coming second with a score of 73⅔ per cent.

Among the out-of-town visitors present and taking part in the meet were Dr. W. S. Welch, state health officer; James M. Adams, Standard Oil Co., Baton Rouge, La.; D. J. Parker, U. S. Bureau of Mines, Pittsburgh; Dr. R. R. Sayers, U. S. Bureau of Mines, Washington; Dr. David J. Yates, American Red Cross, Atlanta; Dr. F. B. Merriwether, U. S. Bureau of Mines; Dr. W. R. Crane, Bureau of Mines; W. T. Lacey, Columbus (Ohio) station; James M. Webb, Knoxville (Tenn.) station; Alex Miller, Vincennes (Ind.) station; George W. Groves, Pittsburgh station.

The prizes awarded the various successful contestants were donated by the Alabama Mining Institute, the success of the meet being largely due to the untiring efforts of secretary James L. Davidson and assistant secretary H. E. Mills, of the Institute, C. E. Saxon, of the local branch of the Bureau of Mines and Chief Mine Inspector Charles H. Nesbitt.

## $30,000,000 Coal Merger Closed in Tennessee

A merger of coal and iron companies said to represent approximately $30,000,000 was effected in Nashville, Tenn., Oct. 6 with the purchase by the Bon Air Coal & Iron Corporation of the properties of the Tennessee Consolidated Coal Co. and the Chattanooga Gas & Coke Co. The price to be paid for each of these properties will be $1,250,000, the sale of the Chattanooga Gas & Coke Co. being subject to ratification by its stockholders before October 20.

Other companies which will be a part of the merger are the J. J. Gray, Jr., Foundry at Rockdale, Tenn., already acquired by the Bon Air company, and the Southern Ferro-Alloys Co., owning plants at Chattanooga and Cleveland, Tenn. The deal for the latter company has not been consummated, it was announced, but it is expected that its properties will be acquired.

The deal for the merger was consummated by William J. Cummins, vice-president and general manager of the Bon Air company. Negotiations extended over a period of twelve months. In the new corporation Mr. Cummins will be chairman of the executive committee. This will mark another step in the financial rehabilitation of Mr. Cummins, former head of the Carnegie Trust Co., New York City. Cummins was convicted of grand larceny in 1911 in connection with the alleged conversion to his own uses of a fund of $140,000 deposited in the trust company.

Associated with Mr. Cummins in the new company are William Wrigley, Jr., of Chicago; Col. Jacob Ruppert, of New York, and John McE. Bowman, of New York.

The handling of chemical byproducts from the production of coal, it is said, will be one of the activities of the new corporation.

The West Kentucky Coal Bureau, traffic organization for the operators of western Kentucky, with headquarters at Louisville, has announced the October meeting is to be held at the Peabody Hotel, Memphis. All regular meetings have been held at Louisville for years.

The City Council of Minneapolis has had the proposed ordinance to license retail fuel dealers before it for some weeks, and the author has made several attempts to force consideration. It is due to come up for consideration soon. It proposes a fee of $50 a year and seeks to enforce a responsibility upon coal dealers.

Within the next sixty days, according to advices coming from Hazard, Harlan and other southeastern coal points, the Louisville & Nashville R.R. will commence actual work of hooking up its lines with those of the Carolina, Clinchfield & Ohio R.R. One piece of mountain work is said to involve about $20 000,000. Coal men are particularly interested because of the fact that this will give another outlet to the seaboard.

## Pittsburgh Coal Co. To Open Seventh Mine Under 1917 Wage Scale

Some time during the current week the Pittsburgh Coal Co. will start work at its third mine in the western Pennsylvania district on the 1917 scale. This announcement was made by company officials when preparations for resumption at Midland No. 1, three miles from Canonsburg, were revealed. This mine is in Washington County, the other two, Banning No. 1 and No. 2, being in Fayette and Westmoreland Counties, respectively. When Midland No. 1 is started the company will still have thirty-seven mines idle in western Pennsylvania.

Former employees of the company at Midland petitioned the company to return to work at the 1917 scale. The mine has been closed since November, 1923. The normal capacity is about 400 men. H. M. White is division manager in charge of operations there. A report said the company planned evictions at this mine, but officials of the company denied this report.

Midland No. 3 mine, near the one which is to be opened, was dismantled last spring and the tipple torn down. Midland No. 2 was worked out years ago.

When Midland mine is started the company will have seven operations at work on the 1917 scale with four working in eastern Ohio.

A mob of 100 men, women and children lined the road at the entrance to the Warden tipple of the Pittsburgh Coal Co., four miles from West Newton, one day last week and stoned 50 men as they were going to work at the mine. One man was injured. The men are doing construction work underground and are not engaged in mining. Protection was asked from Westmoreland County officials.

## Utilities Consume More Coal And Less Oil in August

Public utility power plants in the United States consumed 3,338,956 net tons of coal in August, according to a report by the U. S. Geological Survey. This compares with 3,166,703 tons in July, as shown by revised figures. Fuel oil consumption by utilities in August totaled 743,213 barrels, compared with 852,947 barrels in July as shown by revised figures.

The average daily production of electricity by public-utility power plants in August was 173,100,000 kw.hr., a little more than the average daily output for July.

The average production of electricity during June, July, and August was remarkably uniform and there was no marked decrease in July as in previous years. The average output for August was only 0.4 per cent larger than that for July, which is much less than the average of previous years for that month.

**Sending World's Series News Into the Mine**

The Phelps Dodge Corp., at Dawson, N. M., believes in keeping its men satisfied. One of the "little extras" is illustrated here. While the American and National League champions are battling for the baseball supremacy of the world, a clerk, upon getting the score by innings, inscribes it on the sides of cars on their way into the mine. Thus it is not necessary for baseball fiends among the miners to lay off and hang around an outdoor scoreboard.

## Approve Coke Rates in New York

The New York Public Service Commission has approved the following freight rates of the Buffalo, Rochester & Pittsburgh R.R. on coke (also breeze, dust and screenings) carload minimum weight 60,000 lbs. in open cars, from Buffalo, rates per net ton, to stations South Park-Lackawanna: To East Hamburg, inclusive, 80c.; West Falls to Glenwood, inclusive, $1.01; Footes to Edies Siding, inclusive, $1.13; Riceville to Ashford, inclusive, $1.26; Ellicottville to Salamanca, $1.39; (reductions from class rates); to Jewettville, $1.01, (reduction 38c.) effective Oct. 29, 1925.

Also of the Delaware, Lackawanna & Western on coke (also breeze dust and screenings), carload minimum weight 50,000 lb. in open cars, except when cars are loaded to cubical or visible capacity, when actual weight will apply: From Harriet to South Park-Lackawanna on Buffalo, Rochester & Pittsburgh, $1.13 per net ton (reduction from class rates); effective Oct. 28, 1925.

The U. S. Civil Service Commission announces open competitive examinations for engineer, $3,800; associate engineer, $3,000; assistant engineer, $2,400. Applications will close Oct. 20. The examinations are to fill vacancies occurring in the federal classified service throughout the United States. At present there are two vacancies for assistant electrical engineer, Bureau of Mines, for duty at Pittsburgh, Pa., and one vacancy for associate engineer (naval architecture) in the Bureau of Construction and Repair, Navy Department. Full information and application blanks may be obtained from the U. S. Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the post office or custom house in any city.

## Coal Commission Report Ready in November

The first edition, numbering 6,500 copies, of the report of the U. S. Coal Commission will be ready for distribution in November, according to word from the Government Printing Office. The report will appear in five parts, one of which is composed exclusively of charts and tables. Interest in the report has been revived by the recent public utterances of John Hays Hammond, who, as chairman of the Fuel Committee of New England Governors, made frequent reference to the recommendations of this fact-finding commission which he headed and which ended its labors two years ago.

## Lignite Output in Italy Drops

Lignite production in Italy is decreasing, according to Henry C. McLean, American Commercial Attaché at Rome, now in Washington. Such coal deposits as the country affords have a high sulphur content and have only restricted use. Nevertheless the lignite, which was used extensively during the war, has greater possibilities, though foreign coal again is preempting the market.

Imports of coal into Italy now are at the rate of 10,000,000 tons annually. Despite the rapid harnessing of water power imports of coal are increasing.

British coal has a great advantage in Italy, Mr. McLean points out, partly because everyone knows how to burn it and partly because deliveries can be made so much more quickly than is possible with American coal. Despite these handicaps 537,000 tons of American coal was sold in Italy last year. The maintenance of even that volume of imports of American coal is dependent on the availability of very low ocean freight rates. These have not prevailed during 1925 so there has been a decided decrease in the amount of American coal absorbed.

# Output Resumes Upward Curve In West Virginia Strike Region; Miners' Band Arrested as Pickets

The second strike call of the United Mine Workers to the non-union coal miners in northern West Virginia seems to have little effect on the general situation thus far. In the week ended Oct. 3, the first full week following the strike, the non-union coal production was 9,146 cars, a decrease of 621 cars compared with the previous week. Non-union operators contend that the heavy pay day of Sept. 26 and the opening of the gunning season were the chief factors in keeping the miners out of the pits in the region. In the same week the union mines loaded 1,382 cars, or 5 cars less than in the previous week, which had but five workdays due to Sept. 26 being set aside as a holiday because of the visit of International President John L. Lewis.

Non-union coal production took an upward curve last week. In the first three days of the week the non-union mines in the 12½ counties of northern West Virginia loaded 4,978 cars of coal, compared to 4,564 cars in the corresponding period of the previous week. A slight increase was noted in union tonnage, 832 cars having been loaded in the first half of the week compared to 801 cars in the corresponding period of the previous week.

### Car Loadings Increase

The non-union coal loading in the region totaled 1,744 cars Oct. 7, the heaviest daily non-union production since Sept. 23, when 1,767 carloads was produced. On the same day the union mines loaded 301 cars of coal, the heaviest daily loading of union plants since April 10, when 309 cars was reached. With 212 non-union mines at work in the 12½ counties, more open-shop plants worked Oct. 7 than on any day since the strike began on April 1. Thirteen union mines are active in the whole region.

After listening to testimony for four days in connection with the fifty-four union pickets haled into court for alleged violation of an injunction granted to miners at the New England Mine of the Consolidation Coal Co., at Watson, Judge Winfield Scott Meredith, in the Marion County Circuit Court, on Oct. 8 dismissed Mayor Bennett of Monongah and three others, reserving decision in the case of the fifty others. Mayor Bennett is accused of being a member of the union as well as a sympathizer. Included in the picketers were the Monongah miners' band.

Under the injunction the union pickets are restrained from "picketing, patroling, establishing or maintaining any picket or patrol at or near" the mine for the purpose of "inducing, persuading, compelling or coercing, by insults, intimidation, threats, frightening, assaults" and other means men employed by the company to quit work.

One Italian practically refused to promise to stay off the picket line and the court held him under $200 bond in his own recognizance. The Italian said "he wanted to be a free man." Another Italian said he would rather go to jail 25 years than pay any attention to the injunction. One of the pickets entered a plea of guilty, but the judge did not accept the plea without the man having counsel. When he obtained counsel the plea was withdrawn. It developed that he was a member of the Monongah Band.

The miners' union contends that the picketing is within their constitutional rights as laid down by the higher courts. Some months ago Criminal Court Judge L. S. Schwenck laid down a decision on legal picketing, which is summed up in the following: "A single group of pickets, not to exceed three persons, is permissible, but picketing done otherwise is a violation of law."

### Pickets in Monongah

The pickets gathered in Monongah as recently as Oct. 9, but remained away from the mine entrance, and while this is a violation of the spirit of the injunction, it probably is not covered by the writ.

Announcement was made by the union officials on Oct. 7 that the Wright Coal Co. has leased the West Fork Coal Co. mine, near Monongah, and signed the Baltimore agreement. The mine began work the following day and hundreds of union miners sought jobs, but all could not be put to work. The mine has been idle two years, but it is announced that it now had orders to work steadily.

For the first time in its history the United Mine Workers has resorted to the injunction, which according to Frank McCartney, of Clarksburg, international representative, was obtained recently to restrain officials of the Fairmont Big Vein Coal Co. from interfering with John Patterson, a striking union miner, who lives in a coal company house at Two Lick. Coal company officials, McCartney says, tore the roof off the house while Patterson's wife was sick.

### Hold Many Mass Meetings

Miners' mass meetings continue to be held. Recent gatherings took place at Farmington, Rivesville, Worthington, Shinnston, Hilltop, Lowsville, Brady, Enterprise, Montana and other towns.

The Wheeling (W. Va.) office of the United Mine Workers, through Adolph Pacifico, in charge of the strike in the northern West Virginia Panhandle, announces that Joseph Angelo, international organizer working out of the office of Philip Murray, international vice-president, has been transferred to Fairmont. James McCormick, of Wheeling, has been appointed vice-president of Sub-District No. 6 of District No. 6, Cambridge, succeeding John Hone, who has been named president of Sub-District No. 6 in place of David Watkins, appointed vice-president of District No. 6 to succeed William Roy.

## *Eight Months to Locate Coal Man's Heirs*

After more than eight months' search word has been received from five heirs to the $55,000 estate left by Gould L. Saunders, of Saunders & Ashbaugh, coal dealers of Columbus, Ohio, who died eight months ago. In the will he specified that the residue of his estate after a bequest to the widow was paid was to be divided among his brothers and sisters. Neither the widow nor Mr. Saunders' business partner knew of the whereabouts of these heirs and it required a long search to locate three brothers and two sisters.

## Coal Output and Imports by Canada Higher in July

Output of coal from Canadian mines during July was 744,087 tons as against 736,851 tons in June, and an average for the month during the five preceding years of 1,033,097 tons. Production by provinces in July showed slight gains over June in Nova Scotia, Saskatchewan and Alberta; but in comparison with the five-year average outputs for the month only Saskatchewan and Alberta were higher.

Imports of coal from the United States and Great Britain in July amounted to 1,788,502 tons as compared with 1,470,416 tons in June and the five-year average of 1,747,492 tons. Receipts from Great Britain during the month amounted to 115,613 tons. For the first seven months of 1925 the total amount of coal imported into Canada was 8,389,650 tons, or 10 per cent below the preceding five-year average for the period.

Imports of anthracite totaled 558,873 tons in July. This was 151,352 tons above the tonnage imported in June and about 40 per cent above the five-year average for the month. Anthracite imported from the United States amounted to 450,262 tons while 108,611 tons came from Great Britain. The total anthracite imported during the seven months ending July, 1925, was 2,593,963 tons, an increase of 7 per cent above the previous five-year average.

Exports of Canadian coal in July were 38,634 tons; June, 43,296. Comparison of the July exports with the preceding five-year average showed a decrease of 76 per cent. Total exports for the year to date amounted to 333,498 tons, or 66 per cent less than the five-year average.

The total number of men employed in the coal mines of Canada during July was 14,702, of whom 10,421 worked underground and 4,281 on surface, as compared with a total of 18,611 in June, of whom 14,195 worked underground and 4,416 on surface. Production per man was 50.6 tons in July as against 39.4 tons per man in June. During July, the production per man-day was 2.3 tons, as compared with 3.3 tons in June.

## Bureau of Mines To Be Service Agency of Mining; Would Retain Committee

Reorganization of the Bureau of Mines so as to make it essentially the service agency of the mining industry and a central clearing house of information on matters pertaining to mines and mining in the interest of the industry and the public can be used as an argument against compulsory fact-finding or regulatory legislation. Congress almost invariably does things by law. The policy of Secretary Hoover is in striking contrast with that way of dealing with industry. He has been outspoken in his disapproval of any form of compulsion or regulation. The extensive fact-finding activities that he has initiated in his department are on a voluntary basis. He has put the whole matter of the reorganization of the Bureau in the hands of a committee representative of the major mining activities so that the reconstituted Bureau may be of and for the industry. Not only is the committee to advise on functions to be retained and functions to be added but he now plans to retain the committee as a permanent link between the Bureau and the industry.

The representative of the coal industry on this committee has been taking an active and helpful part. His expressions in connection with the work of the committee and the promise of former President Brydon, of the National Coal Association, to the Coal Commission give rise to the thought that the industry may be willing to make voluntary returns to the Bureau, which from now on is to be the out-and-out champion of those who go down in the earth in mines.

Such action would meet the charge that the industry will not furnish the basic figures necessary to diagnose its ills. It would render unnecessary the proposal of Senator Oddie's bill to withhold cars from those who refuse to make returns of basic facts and would pave the way for the voluntary adoption of the many helpful provisions of that bill.

Both the Calder and the LaFollette bills, designed to regulate the coal industry, provided for the collection of extensive statistical and economic data. This was pointed to as being in the interest of the industry itself, but these bills were by and for everyone except the coal industry. The milder Frelinghuysen bill, which followed, was characterized by the coal industry as an effort to treat the patient against his consent. Even the Oddie bill, which comes from a man of the mining industry, who simply has acted as a compiler of suggestions made by various persons who are regarded as being authorities on coal, is considered by the coal operators as something handed down from above.

Secretary Hoover apparently is in sympathy with the industry's attitude toward those bills. It is just as apparent that he does not agree with most of the recommendations of the Coal Commission. He doubtless has been deterred from expressing his disapproval in order to avoid a breach of etiquette toward a presidential commission. Instead of putting the great weight of his influence behind such things as federal licensing, graded taxation and control by the Interstate Commerce Commission he has worked to encourage the industry itself to learn its own mind and settle its own difficulties.

Secretary Hoover's experience with the Jacksonville wage agreement is thought to have increased his determination to go only so far as the industry desires.

The Reynders advisory committee probably will bring out a well rounded plan which will include some plan for furnishing essential facts concerning coal, using the channels of the coal trade for the purpose. This would be a complete answer, many think, to those who allege that the industry is not able or not willing to collect basic facts.

This illustration of coal is used because it happens to be the mineral which has figured most in the Congressional discussion. The contrast between doing things by legislation and doing things by and with the consent of the industry applies to the whole field of mining.

The search for a director of the Bureau of Mines, which really is a search for an under Secretary of Mines, since the eventual creation of the latter office is believed to be assured, also has been turned over to the industry's committee. The desire in that connection is to induce some broad-gaged man of the industry to take the place. It is known that Secretary Hoover prefers this type of man to the civil servant or the academician, but the chance of success in such a quest is known, from previous experience, to be small.

## Will Not Disturb Rate Relationship

Rates from mines in the Harrisburg district of southern Illinois over interstate routes to Hoopeston, Ill., are not unreasonable or unduly prejudicial in comparison with rates to Chicago, Indianapolis and Vincennes, Ind., declares the Interstate Commerce Commission in a recent mimeographed report dismissing the petition of the Hoopeston Grain & Coal Co. vs. Chicago & Eastern Illinois R.R. Co. et al. and related complaints.

"The conditions affecting the rates to Chicago, Indianapolis and Vincennes," says the opinion, "are not comparable with those affecting the rates to Hoopeston, and the record does not justify condemnation of the rates from the southern Illinois group to Hoopeston or the application to that point of lower rates from the points of origin named (viz., Harrisburg, Ledford, El Dorado, Carrier Mills and Norris City) than those from the group."

## British Miners Agree Provisionally to Join National Coal Inquiry

At a second conference in London, Oct. 9, the delegates of the British Miners' Federation reconsidered their previous decision and voted to participate in the royal commission recently appointed to inquire into the entire coal industry. The federation's participation is contingent upon further efforts to eliminate the cause of their grievances regarding wage reductions in certain regions and the refusal of the employers to grant unemployment benefits.

At the conference of Oct. 8 the delegates rejected participation in the Coal Commission by a card vote of 477,000 to 332,000. The conference was called to consider the situation arising through the interpretation of the truce terms. Two weeks ago Premier Baldwin, after lengthy consideration, accepted the contention of the mine owners in their dispute with the Miners' Federation of their right to reduce wages in certain regions.

The miners argued that this decision was at variance with the governmental subsidy granted to enable mine owners to maintain the current scale of wages pending an inquiry by a royal commission.

A majority of the miners' executives were opposed to drastic action, but the delegates themselves were sharply divided and a heated debate ensued. The miners' secretary, A. J. Cook, was absent through illness.

The voluntary organization for the maintenance of supplies in the event of a general strike was condemned at a conference of the Scottish miners at Glasgow, Oct. 8. In protest against such a body being formed in the United Kingdom, a resolution was passed expressing the view that such an organization would be used against the miners if an industrial conflict occurred in which the miners were involved.

Robert Smillie, Member of Parliament and president of the Scottish Miners' Federation, in an address said it was the government's business to protect the people and not the business of a private body of men. He regarded the "O.M.S.," as the organization for the maintenance of supplies is coming to be known, as a menace to organized labor and intended to help the capitalists "continue the enslavement of the workers."

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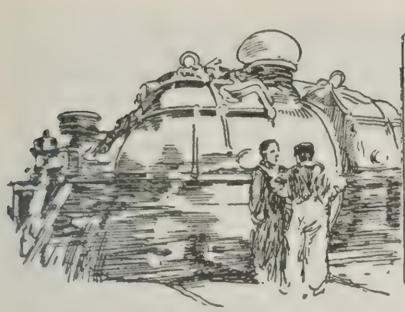
Westbound coal movement through the canals at Sault Ste. Marie, Mich., and Ontario, in September, 1925, totaled 1,389,595 net tons of bituminous and 58,490 tons of anthracite.

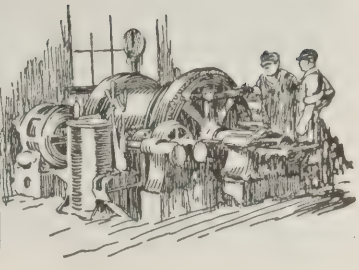
## Strikes and Lockouts in Pennsylvania Anthracite Region, 1920-1924

| District | 1920 | | 1921 | | 1922 | | 1923 | | 1924 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Days | Men | Days | Men | Days | Men | Days | Men | Days | Men |
| Lehigh | 15 | 15,666 | 18 | 10,847 | 137 | 19,066 | 19 | 18,593 | 15 | 10,145 |
| Schuylkill | 17 | 41,945 | 5 | 5,523 | 137 | 41,893 | 19 | 43,524 | 7 | 12,333 |
| Wyoming | 23 | 39,229 | 17 | 35,747 | 138 | 80,753 | 20 | 72,772 | 19 | 48,795 |
| Sullivan County | .. | ...... | .. | ...... | 144 | 730 | 18 | 696 | .. | ...... |
| | 19 | 96,840 | 16 | 52,117 | 138 | 142,442 | 19 | 135,585 | 16 | 71,273 |

Compiled by U. S. Bureau of Mines.



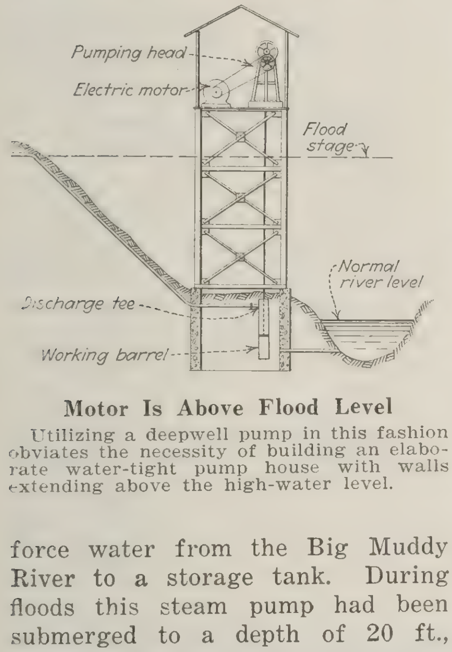
# Practical Pointers For Electrical And Mechanical Men



## Electric-Driven Deepwell Pump Installed on Top of Tower

Electrification of a mine often brings up interesting problems concerning the outside pumping equipment. A. W. Spaht, of Christopher, Ill., electrical engineer of the Old Ben Coal Corporation, solved one of these problems by installing an electric-driven deepwell pump in a rather unusual position.

At one of the Old Ben mines, about three miles from Herrin, a direct-acting steam pump had been used to force water from the Big Muddy River to a storage tank. During floods this steam pump had been submerged to a depth of 20 ft., which, of course, did no harm to such a pump. When the question of installing an electric pump came up for discussion, the first consideration was to provide protection from floods.



**Motor Is Above Flood Level**

Utilizing a deepwell pump in this fashion obviates the necessity of building an elaborate water-tight pump house with walls extending above the high-water level.

The usual but rather costly solution would have been to build a pumping station of water-proofed concrete, with the walls carried to a point well above the flood level. Instead, a geared, deepwell pump of the reciprocating type, with double-acting working barrel, was employed, and the pumping head and motor installed on the top of a 20-ft. steel tower.

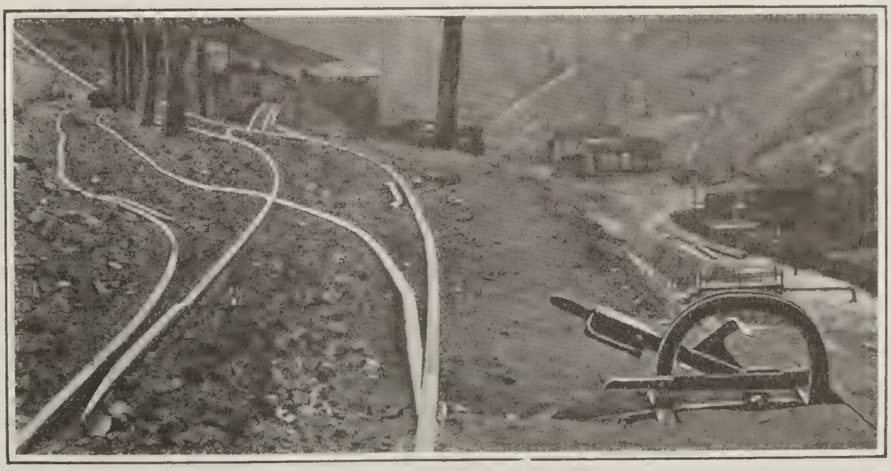
This arrangement has proven to be a satisfactory and economical method of protecting the motor, and in cold weather has the advantage that the water piping is protected from freezing. The latter feature is provided by having the discharge outlet located in the well several feet below the ground level.

### Hammer Blow Completes Throwing of Switch

Ten years ago, P. A. Tice, at that time the blacksmith, but now the chief electrician of the Hazard Blue Grass Coal Corp., Hazard, Ky., built the semi-automatic switch stand illustrated in the photograph reproduced here. This type of stand has since been copied for use at a number of mines in the Hazard field.

The weighted handle of the stand is pivoted so as to have several inches of play with respect to the operating lever. When a locomotive or mine car runs through the switch the movement of the rail points raises the weighted handle to a position beyond dead center. The handle then falls to the other side and the resulting hammer blow completes the throwing of the switch to the opposite position.

The weight of the handle continues to hold the switch points tightly. A distinct advantage of this switch stand is that the operating lever's range of movement is greater than that normally required. This feature automatically takes up any play and thus eliminates the necessity of frequent adjustment of the switch rod.

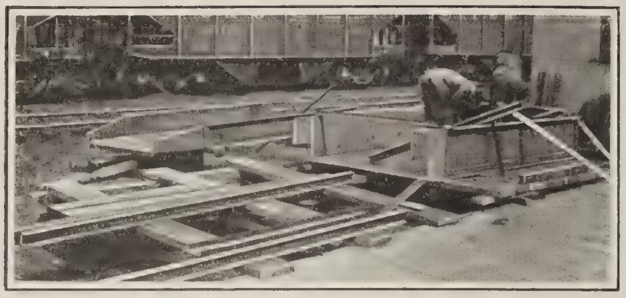


**The First Switch of Its Kind in the Hazard Field**

This home-made switch stand has been copied for use at a number of mines. A mine car or locomotive running through the switch raises the weighted handle to a point beyond dead center. The handle then falls to the other side hitting the short lever a blow which completes the movement of the switch points.

### How Arc Welding Proves Its Value

Arc welding has been used to a great extent, both for repairs and construction at our properties. The accompanying illustration shows a recent construction job which was a rush order for a shaker screen for one of our tipples that formerly had only plain bar screens. This screen has a capacity of more than 1,000 tons in 8 hr. of run-of-mine over $2\frac{3}{8}$-in. perforations and was made up of structural shapes and sheets. The fabricating was done entirely by means of arc welding. No bolts were used in any part of the equipment except to hold down the perforated sheets and to secure a removable end plate. The whole job



**Saving**

Nearly all this structural work was made by arc welding. Quick, inexpensive jobs save both time and money. When the parts are welded together there is no bother about different size drills and bolts.

cost only about half as much as a similar set of screens which were recently purchased.

When a chute is needed, or it is necessary to make alterations to existing chutes, the arc welding rheostat is a most satisfactory device for the job. It is only in cases of absolute necessity that we ever use bolts or rivets for such work. We are now building an automatic substation in a location rather difficult of access, and the framing of this building is entirely arc welded.

Another rather interesting application of arc welding is in the salvage of broken mine car wheels. In cases where the tread is broken out between two spokes it is a relatively easy matter to save the wheel. A short piece of flat iron is bent to the proper shape and fitted in between the spokes. It is held in position by a deposit of metal on each spoke and the broken part of the tread is then built up on this bar as a base.

R. R. SCHELLENGER,
Electrical Engineer.
Elkhorn Coal Corporation,
Wayland, Ky.

## Glass Guard Protects Eyes From Stray Particles

The adage, "Familiarity breeds contempt," applies well to the average mine mechanic. However, if he happens to be so unfortunate as to have an eye seriously injured when grinding at an emery wheel or when doing some other job where chips are liable to fly, then such close familiarity with the danger of losing his eyesight invariably turns his contempt into caution.

The wearing of approved goggles is the best way of protecting the eyes, but unfortunately few have been converted to this idea and even those who have will sometimes neglect to put on the goggles when there is but a short job to do such as a bit of grinding. For this reason there are advantages in equipping grinders with a plate glass guard.

An example of a convenient homemade guard is that in use in the shop of the North East Coal Co., Thealka, Ky. As shown in Fig. 1 this device serves as a lamp bracket as well as a guard. The pipe on which the lamp and guard are mounted is supported from the ceiling and can be swung into a position to serve either of two wheels. Fig. 2 is a close-up of the leather-lined friction disks, at the ceiling, which ordinarily hold the pipe in a fixed position but which will slip when a small force is applied to the lower end to change the location of the lamp and guard.

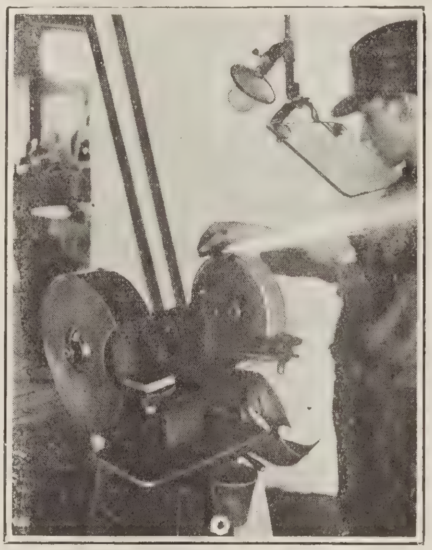


**Fig. 1—No Danger to the Eyes**

The plate-glass shield is adjustable to any desired position or angle and is high enough so as not to interfere with the work. It is a distinct advantage to have the lamp and guard combined in one.

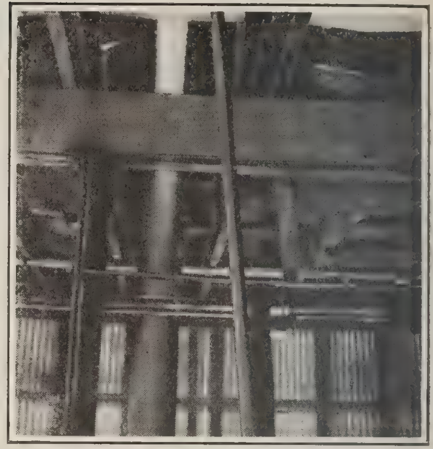


**Fig. 2—Friction Disks at Ceiling Hold Lamp and Guard**

A length of ¾-in. pipe forms the arm to which the lamp and guard are fastened. The leather-faced disks are clamped together tightly enough to hold the arm in any desired position.

Referring again to Fig. 1 it can be seen that the bracket supporting the piece of plate glass is mounted on the pipe in such a way that it can be rotated through a complete circle. A leather washer acts as a friction to hold it in a set position.

## Refuse Bank Retained by Cement-Filled Wall

One of many uses to which a cement projector might be placed is clearly indicated in the accompanying illustration. A fan house had been erected at the bottom of a refuse bank but the rock tended to slide down the slope of the bank and crowd around the building. What really is the equivalent of a concrete retaining wall was erected to prevent further encroachment of the bank on the fan house. Large pieces of slate were laid in a pack wall, the interstices of which were filled with cement discharged under pressure.

**Cement-Filled Wall Holds Bank from Sliding**

This pack wall of slate was strengthened and held by a cement mortar which was applied by machine.

# Problems In Underground Management

## In Double Freeport Seam, Clay Is Better Than Rock Dust for Stemming

By J. H. Zorn

Safety Engineer, Ford Collieries Co.,
Curtisville, Pa.

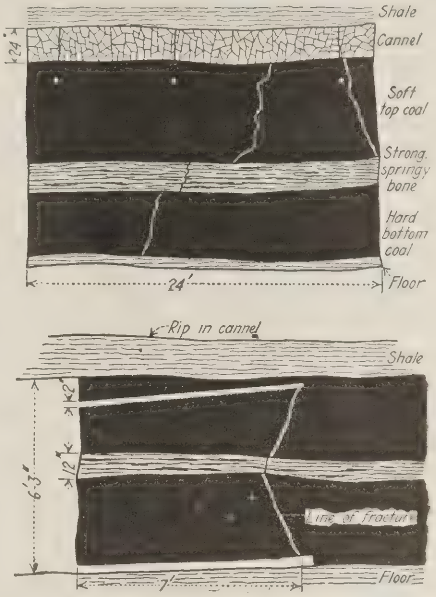
At the Berry No. 3 mine, of the Ford Collieries Co., tests with rock-dust stemming in the double Freeport seam proved that this method of charging powder was entirely unsatisfactory. The Freeport seam at that mine is about 6 ft. 3 in. thick with 12 in. of hard, tough, springy bone in the middle. The coal above this bone is spongy and that below is hard. Above the top coal is a 2 ft. layer of cannel coal which must be left in place in order to support the roof. Above that is a bed of shale.

The rock dust used was limestone pulverized so that 75 per cent of it would pass through a 200-mesh screen. It was packed in waxed-paper shells to form dummies measuring 1¼ x 9 in. The tests were made through a period of two weeks in fifteen rooms located in two sections of the mine. The boreholes were about 2 in. in diameter and 7 ft. long. The shots were made with the permissable powder regularly in use in this mine and the charges, which were of the customary size, consisted of from three and one-half to four cartridges, 1¼ x 8 in. in breaker holes and from one and one-half to two cartridges in rib holes.

In the course of the tests three different methods of tamping were tried. First, the dummies were pushed back to the powder, and the hole was filled to the collar, the last three dummies being firmly tamped. This gave about 8 in. of solid tamping at the mouth of the borehole. When the charges, tamped in this way, were shot, the rock dust was blown from the boreholes and was distributed over the floor for a distance of about 25 ft. back from the face. The paper containers, in which the rock dust had been confined, were found on the floor within the dusted area but minus the wax coating. These shots gave clear evidence of having blown out.

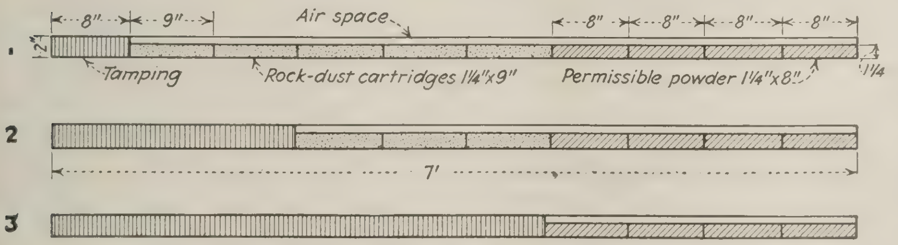
### Prevent Blownout Shots

Now such shots are dangerous whether rock dust stemming is used or not, and it is my theory that they always indicate poor blasting practice. Therefore, a second method of tamping was tried in an effort to prevent the charges from blowing out. The first dummies were pressed back lightly against the charges as before, but the later ones were tamped firmly to increase the length of the solid stemming to about 2 ft. With this method there were no blownout shots but the coal was improperly blasted. The strong bone and some of the coal hung at the back of the cut, so that much pick work was required in every place to square up the face for the next shot. This showed that there was still a tendency for the gases of the explosion to work forward toward the mouth of the hole instead of exerting their greatest energy on the back of the cut.



Method of Placing Shotholes at Face of Room

The illustration shows how the coal is ripped irregularly by the shot and the cannel is cut by the explosive. The fracture in the upper half shows the effect of the buster shot and of a rib shot, respectively.



Three Methods of Charging All of Which Gave Poor Results

In the first instance with 8 in. of tamping the shots blew out but scattered rock dust for a radius of 25 ft. In the second case with 2 ft. of tamping the strong bone and part of the coal back of the cut hung and had to be dislodged by heavy blows of a pick. In the last of the three cases, the results approached those with clay stemming but were always inferior to those obtained when clay was employed. In every case where rock dust was used, the cannel coal was badly ripped.

### Clay Stemming Best

Consequently, a third method was tried, in which the hole was tamped solidly from the explosive charge to the collar. This gave the best execution, coming nearest to the results obtained where clay stemming is used, but in no case were the results as satisfactory as are obtained when the hole is stemmed with clay.

In all these shots with rock-dust stemming, moreover, the cannel coal was badly damaged, a most undesirable feature. Although 2 ft. thick, the cannel ripped along the length of the borehole where the stemming was compressed by the explosion, the cutting in many cases being from 5 to 5½ ft. long. This weakened the roof alarmingly.

In every case the rock-dust stemming seemed to leave too much air space for the explosive to work effectively. In every shot the charge spent its entire force in the spongy top coal and cannel, allowing the bone and bottom coal to settle down in one big piece and leaving an irregular face. In consequence, the loader had to clean and square up the place for the next cut of the machine at the expenditure of much labor.

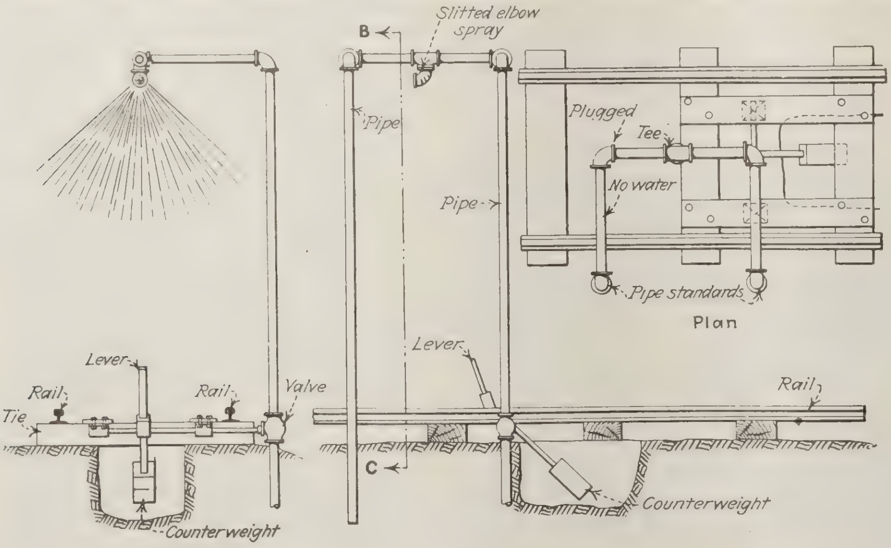
As a whole these tests indicated somewhat conclusively that the use of rock-dust stemming offers no advantages in the double Freeport seam. In the first place it proved not to be a practical means of dusting the face and thus it was not a safety measure. In the second place, it created in this seam a tendency toward blownout shots—a hazard which good blasting practice seeks always to avoid. Third, it did not decrease the quantity of explosive required. Fourth, shots with rock-dust stemming did not square up the face nor bring down the bottom coal in good condition for loading. And lastly, the shots thus stemmed so damaged the roof that the timbering expense and the danger of mining were increased. For these reasons, in the double Freeport seam the standard method of tamping shots with clay seems preferable to the use of rock dust.

**Keeps Him Thinking Daily**

To keep safety always uppermost in the thoughts of the mine worker seems impossible. The best that can be done is to jog his memory daily. This picture shows a bulletin of the Old Ben Coal Corporation posted conspicuously at the shaft mouth, just above the signal code. The messages which the bulletins carry are changed daily. It is the endeavor to keep them terse, concise and to the point.

## Car Operates Its Own Spray

At a mine of the Union Pacific Coal Co. at Reliance, Wyo., John Holen, the superintendent, takes good care of the watering of his empty mine cars. As they come up the grade from the tipple one or two at a time they strike a lever at a certain point in the road. This engages with the bumper of the car or cars and is held down till it or they have passed, when a counterweight brings the lever back into position. As the lever is rigidly attached to the stem of a water valve, its operation by the passing of a car projects a stream of water over the wagon, thoroughly wetting the bottom and what dust remains after dumping. That is why dust in the roadways of Reliance retains that grayish cast which is indicative of the presence of an excess of inert material. The flow of water is shut off as soon as the car has passed, which is an item of no little importance where all the water comes from deep wells and has to be pumped long distances.

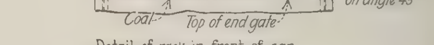


**No Attendant Is Needed to Wet Down Cars.**

The automatic arrangement of operating this spray saves time as well as men and sends trips of coal out with a minimum of dust spillage along roadways and slopes.

## Steel Siding Adds Capacity To Mine Cars

Machine loading has brought home forcibly to coal operators in Wyoming, as elsewhere, the need for large cars. Small cars might be satisfactory so long as men had to push them, but where they are handled mechanically a larger unit is desirable, especially as machines will not top a car with coal as miners have been in the habit of doing. At the Sweetwater mine of the Gunn-Quealy Coal Co. the car sides have been raised in the manner shown in the accompanying illustration, a 12-in. girdle of steel plate being erected on four channels attached to the old wooden sideboards. In the front the girdle is only 6 in. deep and it is the lower 6 in. that is omitted, thus giving the large lumps an opportunty to escape without hindrance when the car is dumped. The addition of this girdle increases the capacity of the car from 3,000 lb. to 4,000 lb.

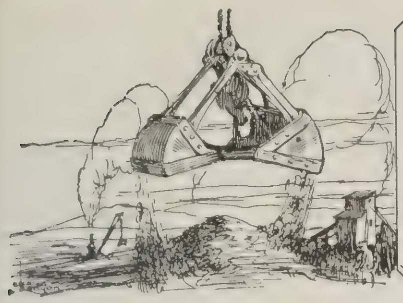

1½" Angles
No. 8 B.&S. gage
1½ Angle
2" Channel
12"
Rivets
Bolts
Flare board
Vertical side board, wood
Inside El. of side of car
1½" Angle
Side plate cut on angle 45°
Coal
Top of end gate
Detail of rack in front of car

**This Aids in Car Loading**

A steel "girdle" 12 in. high at three sides and 6 in. high at the car's dumping end makes it possible to use the old cars with mechanical loaders without a reduction in the average load.

## Use Grease Gun in Fall

So that a reasonably stiff grease and yet one which will flow freely from a grease gun may be used to lubricate mine cars, the Union Pacific Coal Co. greases its cars in autumn. Thus one application serves to keep the cars well lubricated during the winter. The heat resulting from the turning of the wheels and the mine temperature is sufficient to keep the grease of the proper viscosity. If this work is left until winter it becomes difficult.



# Production And the Market

## Soft Coal Market Feels Stimulus of Cool Weather; Anthracite Substitutes Catching On

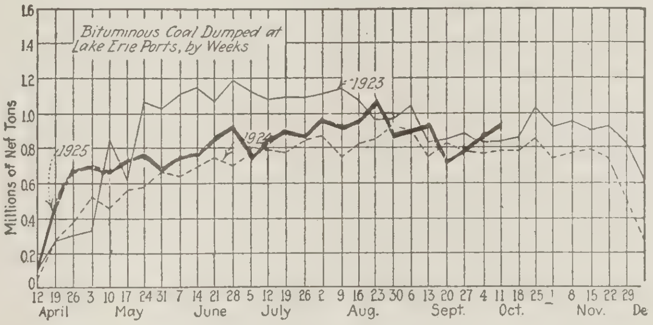
The soft coal market having practically settled down to a weather proposition a cool wave was perhaps the most pressing need to give stimulus to the trade, and, strange to say, this was forthcoming last week, and over a rather broad area, too. As a result the demand for coal has picked up noticeably after a distinct letdown following the spurt coincident with the suspension of work at the anthracite mines. A falling off in operating time at some of the mines has helped to bring about a notable firmness in West Virginia smokeless, except in the New England market, where indifference of steam coal consumers has made it difficult for shippers to place spot fuel. Introduction of the new all-rail rate on low volatile from West Virginia to the Northeast, on Oct. 15, is being awaited with interest.

The call for prepared sizes, especially 6-in. lump, has been quite brisk in the Middle West, but southern Illinois is having some trouble with steam coals, consumers being able to get all the 2-in. screenings they want at their own price. Business has been lively in the Northwest, coming from a broad territory and all classes of consumers. Unaided by seasonable weather, the trade in Kentucky has had a slight sinking spell, domestic being the weaker side. Demand is good in the Southwest. Utah has been handicapped by unseasonably warm weather, however.

A new record for October in the movement of coal to the lakes was made at Cincinnati last week, most of it at higher prices. Heavy domestic bookings also are a feature, smokeless egg in some instances bringing better prices than lump. The other Ohio markets likewise are doing better. Eastern markets as a rule are comparatively easy, having been but little affected by the weather.

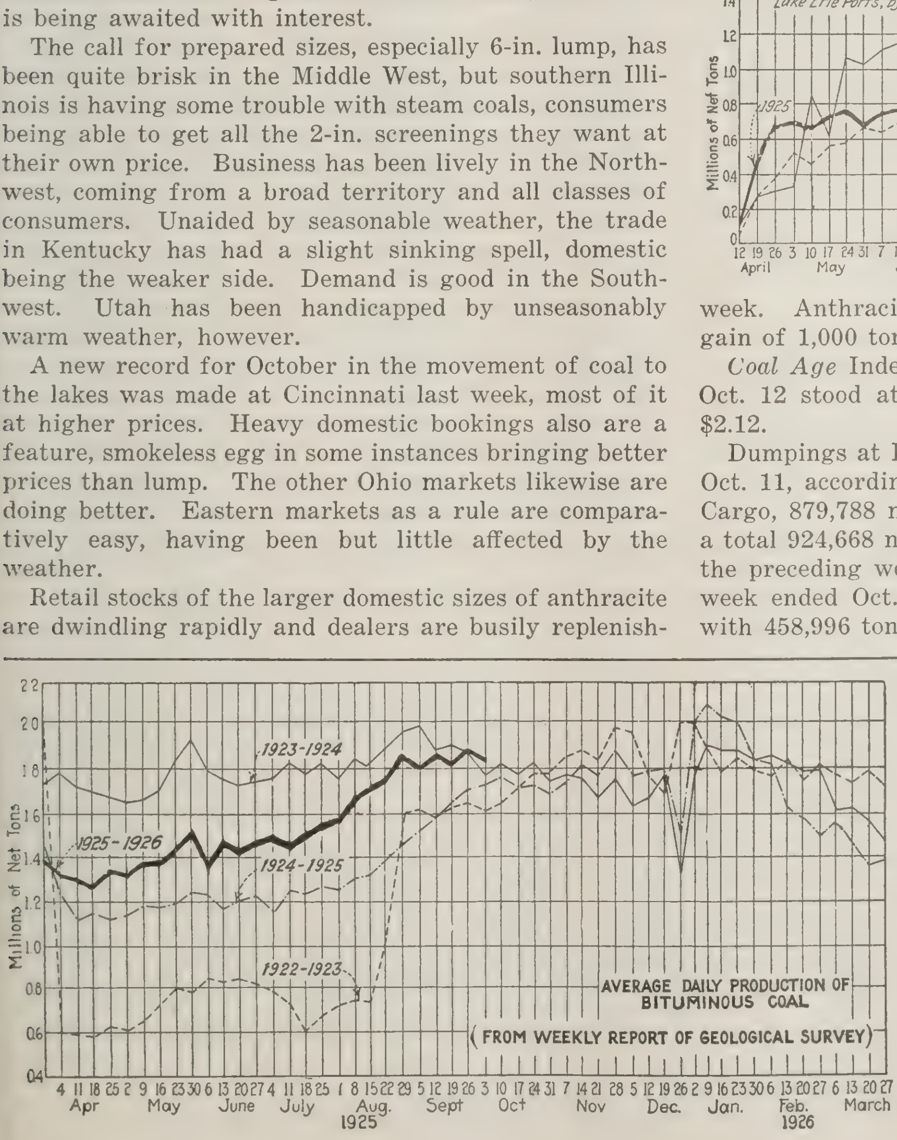
Retail stocks of the larger domestic sizes of anthracite are dwindling rapidly and dealers are busily replenishing stocks with substitutes. Coke is in such strong demand that a number of manufacturers are booked well into November. The call for screened bituminous coal has been comparatively light thus far. Domestic sizes of hard coal are virtually off the wholesale market except for a few boatloads of egg, stove and chestnut at New York, quoted up to $22.50 alongside. Quotations on stock pea are reported at $8@$9 f.o.b. mine and $11@$13 alongside; No. 1 buckwheat, $2.60@$2.85.

Output of bituminous coal in the week ended Oct. 3 is estimated by the Bureau of Mines at 10,979,000 net tons, compared with 11,211,000 tons in the previous week. Anthracite production was 14,000 net tons, a gain of 1,000 tons over the week before.



*Coal Age* Index of spot prices of bituminous coal on Oct. 12 stood at $1.75, the corresponding price being $2.12.

Dumpings at Lake Erie ports during the week ended Oct. 11, according to the Ore & Coal Exchange, were: Cargo, 879,788 net tons; steamship fuel, 44,880 tons—a total 924,668 net tons, compared with 837,410 tons in the preceding week. Hampton Roads dumpings in the week ended Oct. 8 totaled 423,430 net tons, compared with 458,996 tons the week before.



### Estimates of Production

(Net Tons)

| BITUMINOUS | 1924 | 1925 |
|---|---|---|
| Sept. 19 (*a*) | 10,156,000 | 10,880,000 |
| Sept. 26 (*a*) | 10,458,000 | 11,211,000 |
| Oct. 3 (*b*) | 10,614,000 | 10,979,000 |
| Daily average | 1,769,000 | 1,830,000 |
| Cal. yr. to date | (*c*) 349,641,000 | 371,303,000 |
| Daily av. to date | 1,500,000 | 1,589,000 |
| ANTHRACITE | | |
| Sept. 19 | 1,851,000 | 9,000 |
| Sept. 26 | 1,942,000 | 13,000 |
| Oct. 3 | 1,425,000 | 14,000 |
| Cal. yr. to date | (*c*) 68,796,000 | 61,680,000 |
| COKE | | |
| Sept. 26 (*a*) | 132,000 | 176,000 |
| Oct. 3 (*b*) | 138,000 | 185,000 |
| Cal. yr. to date | (*c*) 7,519,000 | 7,275,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Trade Feels Snap of Weather

Demand has picked up in Chicago and the Middle West in the last few days, with the appearance of some reasonably cold weather. Two or three weeks of warm weather had caused the buying spurt engendered by the anthracite strike to die a lingering death. The idea is firmly intrenched in the minds of Illinois operators that the market from now on will largely depend upon the weather.

The recent cold snap brought about a brisk demand for prepared sizes, with 6-in. lump, as usual, in the lead. Southern Illinois operators were able to maintain their prices uniformly at $3.25, and report they have enough lump business on hand to keep them busy two or three weeks. The demand for 6x3-in. furnace and 3x2-in. small egg was good, although not as strong as for lump.

Steam coals continue to furnish a vexing problem to operators, as buyers are able to procure all the 2-in. screenings they want and at a price they are willing to pay, namely, $1.65@$1.75 for a high grade 2-in. coal. It is thought that steam coal from southern Illinois is kept at this low level by pressure through lower prices on non-union coal from western Kentucky, and on strip coal from the central districts of Indiana and Illinois. Non-union coals appear to be spreading into this market in increased volume.

No one appears to be taking any interest in the anthracite strike, as retail dealers are devoting all their time and energy in pushing suitable substitutes. Low-volatile smokeless coals are in fair demand, with the market anywhere from $4 to $4.50, according to the grade. Smokeless lump is plentiful and can be had in almost any quantities. Smokeless egg coal appears to be scarce. High-volatile coals from West Virginia and Kentucky are moving in fair volume, but with prices not too firm.

A slight drop in temperature in southern Illinois has brought about some activity in the movement of domestic sizes, which had been lagging; as a matter of fact, egg and nut are still slow. Only a few mines are getting as much as five days a week and all mines have "no bills" of some sizes on track. Steam shows a little improvement, but the smaller nut sizes are slow. Railroad tonnage at the shaft mines is light. Strip mines get good working time when the weather permits, recent rains having interfered with stripping activities. There is an available market for their production although prices are pretty low.

In the Duquoin district work continues about three to four days a week with plenty of "no bills" on track, no railroad tonnage and prospects not good. In the Mt. Olive district working time is better on account of increased demand for middle grade coals; steam is going principally on contracts. Railroad tonnage is fair in this district and domestic prospects are better. In the Standard field conditions are bad; movement is below normal and prices are below cost. There

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Oct. 13 1924 | Sept. 28 1925 | Oct. 5 1925 | Oct. 12 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $4.35 | $4.60 | $4.60 | $4.50@$4.75 |
| Smokeless mine run | Columbus | 2.20 | 2.55 | 2.55 | 2.40@ 2.75 |
| Smokeless screenings | Columbus | 1.20 | 1.50 | 1.50 | 1.40@ 1.60 |
| Smokeless lump | Chicago | 3.85 | 4.25 | 4.10 | 4.00@ 4.25 |
| Smokeless mine run | Chicago | 1.90 | 2.25 | 2.10 | 2.00@ 2.25 |
| Smokeless lump | Cincinnati | 4.50 | 4.75 | 4.35 | **4.25@ 4.75** |
| Smokeless mine run | Cincinnati | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Smokeless screenings | Cincinnati | 1.30 | 1.85 | 2.00 | *1.85@ 2.00* |
| *Smokeless mine run | Boston | 4.30 | 5.20 | 4.85 | *4.65@ 4.90* |
| Clearfield mine run | Boston | 1.90 | 1.90 | 1.85 | **1.70@ 2.10** |
| Cambria mine run | Boston | 2.30 | 2.10 | 2.15 | **2.00@ 2.40** |
| Somerset mine run | Boston | 2.05 | 2.00 | 2.00 | **1.85@ 2.30** |
| Pool 1 (Navy Standard) | New York | 2.75 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pool 1 (Navy Standard) | Philadelphia | 2.70 | 2.65 | 2.65 | 2.50@ 2.85 |
| Pool 1 (Navy Standard) | Baltimore | 2.60 | 2.30 | 2.30 | 2.25@ 2.35 |
| Pool 9 (Super. Low Vol.) | New York | 2.10 | 2.20 | 2.20 | 2.10@ 2.30 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 1.95 | 1.95 | 1.95@ 2.00 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.85 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.90 | 2.00 | 2.00 | 1.85@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.85 | 1.85 | 1.75@ 2.00 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.65 | 1.90 | 1.90 | 1.85@ 1.95 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.80 | 1.80 | 1.75@ 1.90 |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.70 | 1.70 | 1.60@ 1.80 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.70 | 1.70 | 1.70@ 1.75 |

| High-Volatile, Eastern | Market Quoted | Oct. 13 1924 | Sept. 28 1925 | Oct. 5 1925 | Oct. 12 1925† |
|---|---|---|---|---|---|
| Pool 54-64 (Gas and St.) | New York | 1.55 | 1.55 | 1.55 | **1.55@ 1.65** |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.60 | 1.60 | 1.50@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.40 | 1.65 | 1.65 | 1.65@ 1.70 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.50 | 2.50 | 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.25 | 1.55 | 1.55 | 1.50@ 1.60 |
| Kanawha lump | Columbus | 2.10 | 2.60 | 2.60 | 2.45@ 2.80 |
| Kanawha mine run | Columbus | 1.40 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings | Columbus | .90 | 1.30 | 1.30 | 1.25@ 1.35 |
| W. Va. lump | Cincinnati | 3.25 | 2.60 | 2.60 | 2.50@ 2.75 |
| W. Va. gas mine run | Cincinnati | 1.50 | 1.60 | 1.60 | **1.60@ 1.75** |
| W. Va. steam mine run | Cincinnati | 1.40 | 1.55 | 1.55 | **1.50@ 1.65** |
| W. Va. screenings | Cincinnati | 1.00 | 1.15 | 1.25 | **1.15@ 1.40** |
| Hocking lump | Columbus | 2.50 | 2.70 | 2.70 | 2.50@ 2.90 |
| Hocking mine run | Columbus | 1.60 | 1.65 | 1.65 | 1.50@ 1.85 |
| Hocking screenings | Columbus | .90 | 1.30 | 1.30 | 1.25@ 1.35 |
| Pitts. No. 8 lump | Cleveland | 2.35 | 2.35 | 2.35 | 2.00@ 2.75 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.85 | 1.85 | 1.85@ 1.90 |
| Pitts. No. 8 screenings | Cleveland | 1.05 | 1.40 | 1.35 | *1.20@ 1.30* |

| Midwest | Market Quoted | Oct. 13 1924 | Sept. 28 1925 | Oct. 5 1925 | Oct. 12 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $3.35 | $3.25 | $3.25 | $3.25 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Central, Ill. lump | Chicago | 2.85 | 2.85 | 2.85 | 2.75@ 3.00 |
| Central, Ill. mine run | Chicago | 2.20 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central, Ill. screenings | Chicago | 1.15 | 1.55 | 1.55 | 1.35@ 1.75 |
| Ind. 4th Vein lump | Chicago | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Ind. 5th Vein lump | Chicago | 2.85 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.25 | 1.20 | 1.40 | 1.35@ 1.50 |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.25 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.85 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.80 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | .80 | 1.15 | 1.15 | 1.15 |
| West Ky. block | Louisville | 3.85 | 1.90 | 1.90 | *1.65@ 1.85* |
| West Ky. mine run | Louisville | 1.70 | 1.35 | 1.35 | *1.10@ 1.50* |
| West Ky. screenings | Louisville | .80 | .95 | .95 | **.85@ 1.10** |
| West Ky. block | Chicago | 2.85 | 2.05 | 2.05 | 1.85@ 2.25 |
| West Ky. mine run | Chicago | 1.65 | 1.25 | 1.25 | 1.15@ 1.35 |

| South and Southwest | Market Quoted | Oct. 13 1924 | Sept. 28 1925 | Oct. 5 1925 | Oct. 12 1925† |
|---|---|---|---|---|---|
| Big Seam lump | Birmingham | 3.00 | 2.25 | 2.25 | 2.00@ 2.50 |
| Big Seam mine run | Birmingham | 1.60 | 1.75 | 1.80 | 1.60@ 2.00 |
| Big Seam (washed) | Birmingham | 1.85 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block | Chicago | 3.10 | 3.00 | 3.00 | 2.75@ 3.25 |
| S. E. Ky. mine run | Chicago | 1.60 | 1.95 | 1.95 | 1.85@ 2.10 |
| S. E. Ky. block | Louisville | 3.60 | 2.85 | 2.60 | 2.50@ 2.75 |
| S. E. Ky. mine run | Louisville | 1.55 | 1.60 | 1.60 | *1.40@ 1.65* |
| S. E. Ky. screenings | Louisville | .90 | 1.25 | 1.20 | 1.10@ 1.35 |
| S. E. Ky. block | Cincinnati | 3.35 | 2.85 | 2.85 | 2.50@ 3.25 |
| S. E. Ky. mine run | Cincinnati | 1.55 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Cincinnati | 1.00 | 1.15 | 1.25 | 1.15@ 1.40 |
| Kansas lump | Kansas City | 5.00 | 4.35 | 4.50 | 4.50 |
| Kansas mine run | Kansas City | 3.25 | 3.00 | 3.00 | *2.75@ 3.00* |
| Kansas screenings | Kansas City | 2.35 | 2.40 | 2.40 | 2.35@ 2.50 |

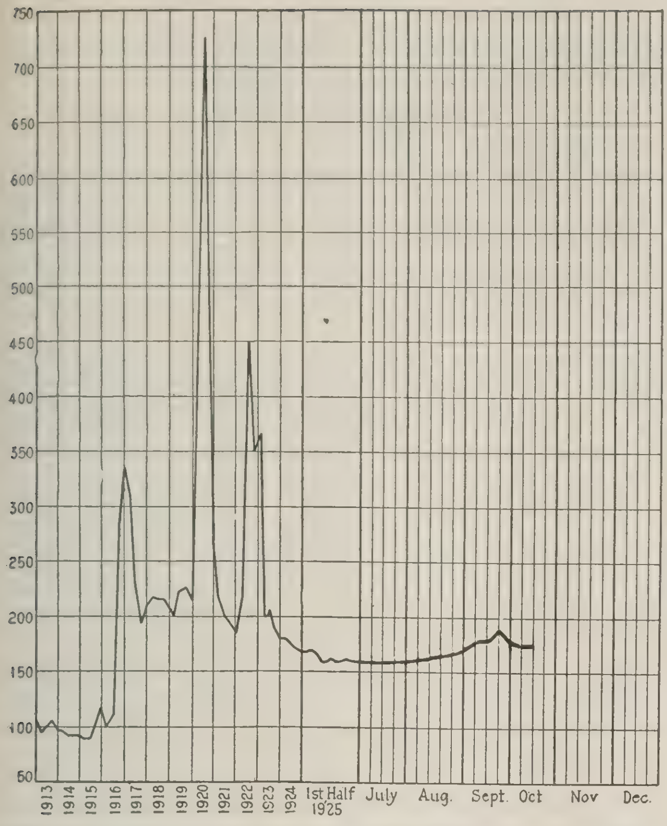
* Gross tons, f.o.b. vessel, Hampton Roads.

† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Oct. 13, 1924 | | Oct. 5, 1925 | | Oct. 12, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ............ | $8.00@$9.25 | ............ | $8.20@$8.95 | ............ | $8.20@$8.95 |
| Broken | Philadelphia | 2.39 | ............ | 9.15 | ............ | ............ | ............ | ............ |
| Egg | New York | 2.34 | $9.25@$9.75 | 8.75@ 9.25 | $14.00@$15.00 | 8.65@ 8.90 | ............ | 8.65@ 8.90 |
| Egg | Philadelphia | 2.39 | 9.25@ 9.75 | 8.80@ 9.25 | ............ | ............ | ............ | ............ |
| Egg | Chicago* | 5.06 | 8.17@ 8.27 | 8.14@ 8.20 | 9.50@10.00 | 8.03@ 8.28 | $9.50@10.00 | 8.03@ 8.28 |
| Stove | New York | 2.34 | 10.00@10.50 | 8.75@ 9.50 | 14.00@15.00 | 9.15@ 9.40 | ............ | 9.15@ 9.40 |
| Stove | Philadelphia | 2.39 | 9.85@10.25 | 9.15@ 9.50 | ............ | ............ | ............ | ............ |
| Stove | Chicago* | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@11.00 | 8.48@ 8.80 | 10.00@11.00 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 9.50@10.00 | 8.75@ 9.25 | 14.00@15.00 | 8.65@ 8.95 | ............ | 8.65@ 8.95 |
| Chestnut | Philadelphia | 2.39 | 9.65@10.00 | 9.15@ 9.25 | ............ | ............ | ............ | ............ |
| Chestnut | Chicago* | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@11.00 | 8.50@ 8.75 | 10.00@11.00 | 8.50@ 8.75 |
| Pea | New York | 2.22 | 5.25@ 5.50 | 5.50@ 6.00 | 6.50@ 7.00 | 5.00@ 6.00 | ............ | **5.00@ 6.25** |
| Pea | Philadelphia | 2.14 | 5.75@ 6.35 | 5.75@ 6.00 | ............ | 5.00@ 6.25 | ............ | 5.00@ 6.25 |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 |
| Buckwheat No. 1 | New York | 2.22 | 2.25@ 3.00 | 3.00@ 3.15 | 2.60@ 3.00 | 2.50@ 2.60 | ............ | 2.50@ 2.60 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | ............ | 2.50@ 2.60 | ............ | 2.50@ 2.60 |
| Rice | New York | 2.22 | 1.85@ 2.25 | 2.00@ 2.25 | ............ | 2.25 | ............ | 2.25 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | ............ | 2.25 | ............ | 2.25 |
| Barley | New York | 2.22 | 1.25@ 1.50 | 1.50 | ............ | 1.50 | ............ | **2.25** |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | ............ | 1.50 | ............ | 1.50 |
| Birdseye | New York | 2.22 | 1.35@ 1.60 | 1.60 | ............ | 1.60 | ............ | ............ |

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**: declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Oct. 12 | Oct. 5 | Sept. 28 | Oct. 13 |
| Index | 175 | 175 | 176 | 174 |
| Weighted average price | $2.11 | $2.11 | $2.13 | $2.10 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

are "no bills" of all sizes every day at most mines, which get from two to four days a week with the usual exceptions. Prices in all these fields are unchanged since last week.

Colder weather has stimulated demand in St. Louis, principally for middle grade coals, although there is some activity in Carterville product. Anthracite, smokeless and coke are still slow. Country domestic shows a little improvement and will be a weather proposition. The report that buying is not up to normal is due to dealers not knowing that oil burners are going in at the rate from 100 to 150 a month in St. Louis. Country steam is quiet and local carload is fairly active. There has been a decided improvement in wagonload, which from now on will be fairly good. No change in prices.

## Weakness Appears in Kentucky

Kentucky coal markets are weaker as a result of inability to absorb prepared coal in the face of the heavy offerings and abnormally mild autumn, which has retarded stocking by retailers and domestic consumers. Demand for steam coal continues active, and a lot of screenings as well as some steam nut, mine-run and egg is moving. But 4- and 6-in. block and large egg are not showing much. In western Kentucky production has eased off on prepared and screenings are firmer. In eastern Kentucky screenings are about the only thing that have held firmly.

There has been an accumulation of "no bill" cars at mines, resulting in shading and price cutting to get cars moving. This situation has been especially bad in western Kentucky.

Western Kentucky 6-in. block coal is weaker by 20c. a ton, at $1.65@$1.85; lump and egg, $1.45@$1.60; nut, $1.35@$1.50; mine-run (from small mines) as low as $1.10 and running up to $1.50 for best grades; screenings, 85c.@$1.10, including both pea and slack at up to $1 and nut and slack at $1@$1.10.

In eastern Kentucky best block is around $2.50@$2.75; lump, egg and nut, weaker, at $2@$2.25; mine-run $1.40@$1.65; weaker by 10c.; screenings firm, at $1.10@$1.35.

The utilities, gas plants and industries continue taking a lot of coal, principally screenings, with some mine-run. Brick and clay working plants, cement plants, steel and automotive industries are all busy and taking on fuel and railroad consumption is picking up, with crops starting more active movement.

## Colder Weather Helps Northwest

Dock operators at the Head of the Lakes have had a good volume of business in the last ten days, orders coming from a wide territory and from commercial, industrial and domestic consumers. The late rush was due to colder weather over the Northwest.

Demand for Pocahontas and other smokeless is steadily increasing and the tonnage ordered by dealers over this territory is estimated to be 50 per cent larger than last year. Consumers show a greater disposition to order smokeless on account of the wide price spread between it and anthracite. Prices in both anthracite and bituminous are firm through the list, no changes being noted except that Pocahontas mine-run is up 25c. at $5.50. Shipments from the docks in September totaled 24,032 cars, as compared with 20,778 in August.

Receipts from Lake Erie ports in September were 968,658 tons of bituminous and 58,603 tons of anthracite. That brought bituminous receipts for the season up to 6,445,822 tons and anthracite to 786,848 tons. Hard coal receipts showed a falling off of 344,675 tons as compared with last year and bituminous receipts an increase of 1,334,244 tons. Thirty cargoes, all bituminous, were unloaded at the docks last week and 18 cargoes of bituminous coal were reported en route.

Supplies of anthracite on the docks now are estimated at 500,000 tons, of which more than half is held by one of the companies with docks at Duluth and Superior. Present supplies of anthracite are estimated to be ample to take care of the demand up till around Feb. 1 next.

Cold weather for a few days has served to start consumer demand in the Twin Cities at a faster pace. But steam buying is not following the weather to any extent, and buyers are in the market for as little as they can get along with. Those having water power, however, have not been able to make normal use of it because the dry season has kept down the head and the flour mills, after a prolonged period of dull business, are running heavier than for several years. The price situation is steady and fairly firm.

## Kansas Has Rush Orders

A drop in temperature has brought a brisk business to the Southwestern district in prepared sizes of coal. The market over several weeks had been showing the normal seasonal increase, but on the second day of the recent cold snap dealers, their stocks rapidly dwindling, began to put in rush orders. Mines in Kansas are working more than 85 per cent of normal time and there are many more mines open this fall than in recent years. Unsettled conditions in Arkansas and Oklahoma, throwing to Kansas much business ordinarily controlled by those two states, is largely responsible. Screenings are dragging a bit behind the market for prepared sizes, but as yet there is no threat of an embarrassing surplus.

In the Colorado market there is a good demand for steam sizes and domestic lump, the call for anthracite being abnormal. In fact anthracite mines are working full time and orders are booked thirty to forty days ahead. Nut sizes over 1¼ in. and through a 3-in. screen are a drug on the market. The mines are operating about 85 per cent and production is on the increase. The operators are preparing to take care of increased demands. Prices are: Walsenburg lump, $5.50; nut, $4.50; Trinidad lump, $4.25; nut, $3.75; Crested Butte anthracite, baseburner size, $9.50; chestnut, $7; Dawson-Raton domestic lump, $4; fancy egg, $4; fancy nut, $3.75; fancy pea, $3.25; coke, baseburner size, $6.

The coal market in Utah is weaker again, due to warmer weather. This has helped the car situation, which is generally described as easier. Mines are operating a little better than 50 per cent of capacity. Prices continue steady and the labor situation is excellent. The sugar companies are entering the coal market in a more serious way and the metal mining and smelting industries continue to consume considerable coal.

## Lake Movement Soars at Cincinnati

With 3,150 carloads of coal reported as en route to the lakes last week a new record was made for October. This was 555 more cars than the week before. Most of this is going at higher prices, egg and nut having risen to $2@$2.25. Current business has not changed much, but an outstanding feature of the market is the heavy volume of domestic coal booked for delivery in the last ten days of the month. It would appear that the free coal will be cut away down and the upturn of four or five weeks ago will be unescapable.

Heavier demand for egg is the feature of the smokeless market. Prices on this in some instances have been forced higher than lump. Where low-volatile lump has been obtainable at $4.25@$4.50, egg has taken on a price of $4.40@$4.75. Producers are watching to see the effect of the all-rail rate to New England which goes into effect Oct. 15. The demand for mine-run is just normal and for screenings it has fallen off just enough for the market to ease to $1.85@$2.

Immediate high-volatile business has been just "so-so," with supply easily taking care of demand. Some Hazard block eased as low as $2.50 and Elkhorns down to $2.65, but the general run of the market on the southeastern Kentucky stuff is $2.50@$2.75 with the specialized coals selling right on up to $3.25. Generally speaking, both this district and West Virginia have found it a little harder to keep mine-run moving and a slight concession was made on the steam, in that better grades could be had down around the minimum. Slack business for steam purposes continues strong.

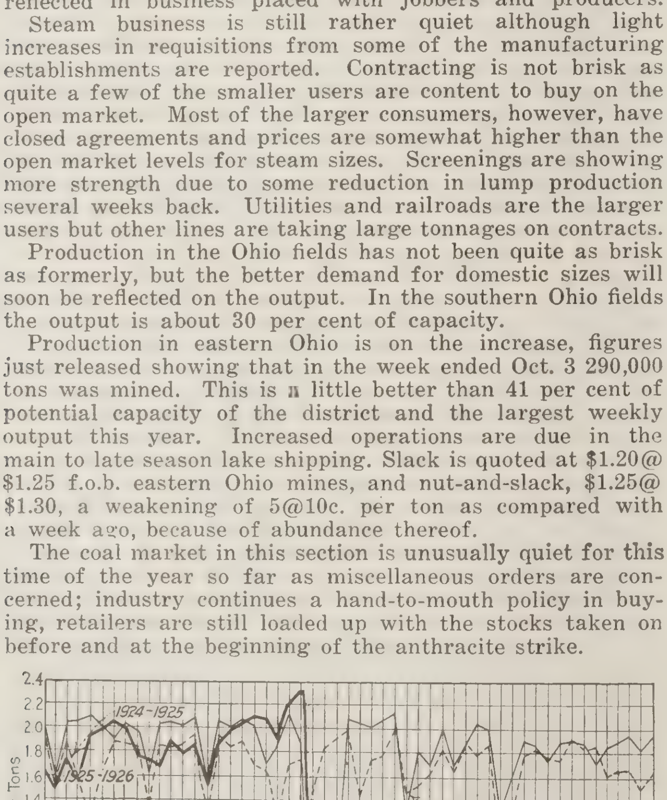
With the river stage bettered tows are again coming down with deliveries as far south as Louisville. No change in the retail situation.

With slightly colder weather at Columbus there is more activity in the domestic coal trade. Retailers have been able to move a portion of their heavy stocks and this is reflected in business placed with jobbers and producers. Steam business is still rather quiet although light increases in requisitions from some of the manufacturing establishments are reported. Contracting is not brisk as quite a few of the smaller users are content to buy on the open market. Most of the larger consumers, however, have closed agreements and prices are somewhat higher than the open market levels for steam sizes. Screenings are showing more strength due to some reduction in lump production several weeks back. Utilities and railroads are the larger users but other lines are taking large tonnages on contracts.

Production in the Ohio fields has not been quite as brisk as formerly, but the better demand for domestic sizes will soon be reflected on the output. In the southern Ohio fields the output is about 30 per cent of capacity.

Production in eastern Ohio is on the increase, figures just released showing that in the week ended Oct. 3 290,000 tons was mined. This is a little better than 41 per cent of potential capacity of the district and the largest weekly output this year. Increased operations are due in the main to late season lake shipping. Slack is quoted at $1.20@$1.25 f.o.b. eastern Ohio mines, and nut-and-slack, $1.25@$1.30, a weakening of 5@10c. per ton as compared with a week ago, because of abundance thereof.

The coal market in this section is unusually quiet for this time of the year so far as miscellaneous orders are concerned; industry continues a hand-to-mouth policy in buying, retailers are still loaded up with the stocks taken on before and at the beginning of the anthracite strike.



Since the arrival of cooler weather last week, certain plants have been putting in some fuel for heating purposes, but the volume on this account is small.

## Pittsburgh Relatively Quiet

Last week in the Pittsburgh district coal market was relatively quiet. Trade on the whole is considerably more active than for months prior to August, but the change from an improving market has given sellers quite a disappointment.

The steel industry is maintaining the high operating rate reached in August and railroad movement has increased. Demand for domestic coal is fair, but not altogether up to expectations.

Market prices are not quotably changed but possibly are a shade easier in spots. However, steam slack, which is subject to the depressing influence of more shipments of domestic lump, has not declined particularly, and that is easily the most sensitive line in the matter of prices.

The trend of production in the central Pennsylvania field is still upward, but the increase is not what might be expected under existing conditions. Gains are being made in the Broad Top region, where a number of the leading operations are almost on a normal running basis. About 400 mines in the entire district are still idle. The demand is stiffening, however, particularly for prepared sizes for domestic consumption in the Eastern states.

Not much change is discernible in the Buffalo soft-coal market, except that prices are weaker than they were when the hard-coal strike began. Slack is hard to get rid of and if there were not some interest in coke and smokeless coal the trade would be slow indeed.

## Trade Lags in New England Market

In New England the steam coal market shows no improvement. Buyers are quite indifferent, and the agencies are again canvassing in every direction to place spot coal. Coastwise movement is only fair, being restricted largely to shipments on contract, and accumulations at Hampton Roads continue heavy enough to make difficult anything like stable prices. The range therefore is from $4.65 to $4.90 per gross ton f.o.b. vessel at Norfolk and Newport News, with indications that the level will drop another notch during the current week.

On cars Boston and Providence also there is only moderate inquiry. While some factors are holding for $6.25@$6.40 others are selling at $6 and even less. A few rehandlers are now being pressed to take deliveries from Hampton Roads to such an extent that they are obliged to send coal inland to make room. Boston retail prices to the steam trade are now $8 per net ton, having been advanced from $7.50, but this is because of a situation purely local and does not reflect any improvement in demand. It means simply that the retailers are trying to recoup their losses of the summer months.

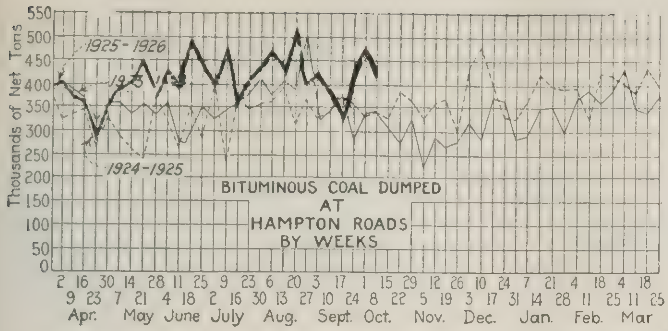
The absence thus far of any cold weather has very much relieved the pressure on retail dealers in anthracite. There is more and more talk of substitutes, and numbers of Pennsylvania operators are profiting by the moderate current demand for screened coal. Minimum prices for lump and egg are somewhat higher than last week, there being very little now offered at less than $4 per net ton at the mines.

## Trade Easy at New York

The bituminous coal market at New York remains practically unchanged from last week. Output is moving in fair shape, with the better coals in good demand, some operators reporting heavy bookings. Prices, however, continue on the old basis.

Soft coal dealers do not expect a big demand in this territory for prepared soft coals to take the place of anthracite users, the trend being toward coke. Increased buying usually attendant upon the approach of winter has been absent so far, although industrial consumers are taking the opportunity of adding small tonnages to their reserve stocks.

Local houses quote Preston County coals at $1.45@$1.50; some grades of Somerset County coals as high as $1.85, and Indiana County coal (Pool 15) at $1.70@$2.25. Stocks at the local piers have not been heavy and free coals move easily.



The Philadelphia market is disappointing to shippers, as cooler weather has made but little change in the situation. Producers of hard-structured coals are going strongly after the anthracite market, but not much progress has been made in inducing dealers to take in soft coal. In this section coke is first tried in an emergency and soft coal comes later.

Spot buyers are taking only ordinary quantities, but contract coal is moving in good volume to add to stocks. Prices remain unchanged and there is no immediate prospect for an increase.

At Baltimore the coal supply continues in excess of demand. Surpluses at tide are noted, and purchasers, knowing that competition is keen, play one supply point against another in order to get minimum quotations. Industrial demand continues light, and prices even for better grade coals are the football of an over-keen salesmanship. Contracting is not on a general scale, as many purchasers continue in the open market in carrying out a hand-to-mouth supply policy. The export situation is fluctuating and uncertain.

There has been no change of note in market conditions at Birmingham during the past week. Comparatively little domestic coal is being bought in the open market and hold-up orders are largely delaying movement against contracts. While there has been some moderation in the heat wave, midsummer temperatures still prevail and there has not been sufficient rainfall to have any material effect in breaking the drought.

Steam coal is being bought fairly well, there being a good demand for high grades of mine-run and washed from the Cahaba and Warrior fields. The volume of spot business being placed along with contract commitments is enabling the mines to operate from three to six days per week in the commercial field. The ice season is holding up to the peak longer than usual, while oil mills, cement plants and ginneries are running full time and requiring a good aggregate tonnage. Some of the rail lines are taking slightly above the minimum contract figure, but, generally speaking, there has been little fuel placed in reserve by year-around industrial plants and utilities as yet. There is no material change in the bunker situation.

Quotations are without change and within the range last quoted on the different grades.

Demand for foundry coke is about keeping pace with output, beehive being quoted at $5 per ton and byproduct 4.75 per ton ovens. Domestic sizes are in fair demand at $3.50@$3.75 for nut and $4@$4.25 per ton ovens for egg.

## Domestic Hard Coals Dwindle

New York anthracite users are not yet complaining of the lack of their favorite sizes. Supplies are dwindling rapidly, however, and retail dealers are already looking after their supply of substitutes. So far the preference seems to be for coke, which is in heavy demand, some manufacturers reporting heavy bookings through November.

There has been comparatively little call for screened bituminous coal, which had a good demand here during the last strike in the anthracite fields.

Domestic coals are practically out of the market so far as operators are concerned. Several loaded boats of egg, stove and chestnut are still available for those willing to pay the prices quoted, which range as high as $22.50 alongside. Stock pea coal was heard quoted at $8@$9 f.o.b. mine and $11@$13 alongside. Buckwheat No. 1 was quoted at $2.60 @$2.85. Rice and barley were not quotable.

Egg, stove and nut sizes of byproduct coke were quoted at $7.50@$8 and run-of-oven furnace at $6.50@$7.

Some Philadelphia retail coal yards present a rather bare appearance, few having anything but pea coal. Of this the supply is good and shipments from the leading company shipper continue to roll along in moderate volume to regular customers.

All dealers have numerous calls for the larger sizes and when pea is offered as the only available fuel, the would-be purchaser frequently declines to take it, but the number who ultimately come back is increasing.

Dealers have been offered stove at $16, nut at $15, and pea at $9.50 per ton, the understanding being that this is coal stored by a small producer near Sunbury, Pa. To make it profitable dealers would have to sell the stove and nut at close to $20 retail, and it is doubtful if any has been sold. The demand for coke is good and prices are advancing.

Demand for buckwheat is increasing, although there is no rush for it. This is the only steam size on the market.

Baltimore consumers are cutting into the supply to some extent, although there is no rush for fuel. Dealers have been advising customers in many cases not to take more anthracite than for immediate needs. The president of the Baltimore Coal Exchange also made a public announcement that he saw no grave danger in the situation to householders, as, even if the supply of anthracite ran out here, there would be no difficulty in getting high-grade soft coal, which could be burned in the majority of heating apparatus in this city.

At Buffalo a little anthracite above pea size is to be had, but the customer has to put up a pretty strong plea to get any and some companies are running short of pea.

Meanwhile coke runs up in price, with different quotations in every office. The sale of smokeless has not run up very fast yet, but that is merely because the people do not know how to use it. When they do there is going to be a sharp competition between it and anthracite.

## Connellsville Coke Trade Gains Slightly

The turnover in furnace coke at Connellsville has undergone an increase in the past ten days, after a marked lull. The market is not yet nearly as active as might have been expected from the little rush of buying recently, which came so early as to lead to expectations that when the anthracite suspension had lasted a few weeks coke would be in heavy demand.

Eastern makers of water gas, who bought in August for short periods, have not been buying lately, but are expected to be in the market again within a few weeks. Their buying amounts to more than that of dealers expecting to distribute for house consumption. There has been a fair amount of this buying in the past week.

One steel company, which does not usually buy coke, has purchased some prompt coke, presumably for a reserve, and is said to have paid up to $4, though several weeks ago some operators said the market was already $4 and ready to go higher.

Miscellaneous lots, which a fortnight ago could sometimes be picked up at as low as $3.50, are now going at $3.65@$4, depending on quality and, it would seem, also on the information the purchaser has as to what he ought to pay. The spot market thus shows quite a range.

There are reports that one or two operators are holding coke on track for a further advance. If they have guessed wrong this may cause a reaction.

The regular crushed coke having become well sold up some time ago, with asking prices shoved up to $7, several operators are undertaking to crush coke by manual labor, using sledges, etc., producing material of doubtful quality.

Spot foundry coke remains dull, and therefore quotably unchanged at $4@$4.50. Lately there has been a little loaded on track. Foundry coke, being large, is particularly unsuited to heating use. Labor troubles in the region are on the wane.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Sept. 26, 1925 | 1,120,645 | 178,463 |
| Previous week | 1,098,428 | 171,601 |
| Week ended Sept. 27, 1924 | 1,087,954 | 162,726 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Sept. 30, 1925 | 140,842 | 61,370 | ....... | ....... |
| Sept. 22, 1925 | 150,453 | 63,320 | ....... | ....... |
| Sept. 30, 1924 | 116,689 | 58,375 | ....... | ....... |

# Foreign Market And Export News

## British Coal Market Disappoints But Trade Is Hopeful

Although prospects in the Welsh steam coal trade were a little more favorable for orders at the beginning of the week, the slight improvement anticipated was not realized. With enormous quantities of coal standing, exceptionally stormy weather prevented steamers from reaching port without much delay, and this has hampered prompt shipment. Colliery owners offer concessions to buyers to take quick delivery, but with the supply of ready tonnage limited it is almost impossible for buyers to take advantage of opportunities of this kind. Several producers have decided to close down small collieries. Negotiations for the reopening of the Clydach Vale Collieries are expected to begin soon.

There has been a very small upturn in the Newcastle coal trade. Inquiry from the Continent has broadened considerably, though actual business is slow to mature. The better classes of Durham coal are a little steadier, although the inferior classes of coking and bunkering are still offered rather freely. Washed smalls and sized coals continue in fairly good request. On the whole the outlook is regarded as a little more cheerful. The fall in prices seems to have been arrested and the collieries refuse to make further concessions. With the colder weather and the longer nights setting in the demand for gas and house coal is expected soon.

Production of coal by British mines during the week ended Sept. 26, according to a special cable to *Coal Age*, totaled 4,395,000 gross tons, compared with 4,435,000 tons in the previous week.

Coal exports from Great Britain in August, 1925, totaled 3,272,110 gross tons, valued at £3,159,952 as compared with 5,074,744 tons valued at £5,732,629 in August, 1924. For the eight months ended Aug. 31, 1925, the total is 33,562,809 gross tons, valued at £34,537,380 as compared with 41,693,690 tons, valued at £50,099,242, for 1924 and 53,156,546 tons, valued at £67,571,441, for 1923.

### French Industrial Demand Easy; Domestic Call Gains

Demand in the French coal market remains moderate for industrial fuels but is gaining for household grades. Bituminous large coals are more sought, especially by Belgian consumers in the neighborhood of the frontier.

Last week several cargoes of Welsh anthracite were received at Rouen. The Soviet commercial delegation were asked whether they intended to continue shipments of anthracite to France. They answered that all depended upon their ability to obtain sufficient orders from French importers and merchants, and added that they were prepared to increase their tonnage in that event.

Like every other year when autumn sets in, there is an increasing scarcity of empty trucks, and barges are far from plentiful. The freight rate for coal from Bethune to Paris has risen to 26 fr.

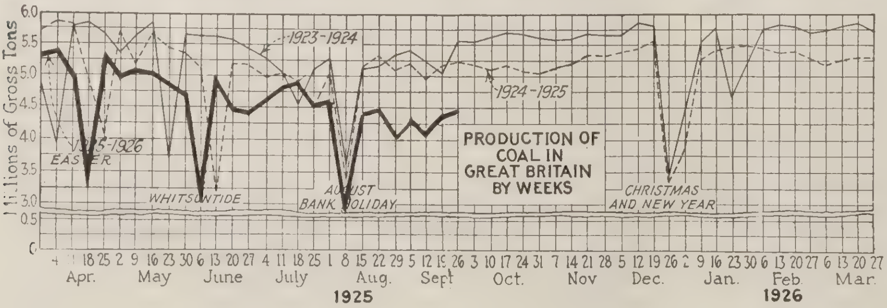
During the first twelve days of September France received from the Ruhr 254,900 tons of indemnity fuels, including 146,400 tons of coal, 97,400 tons of coke, and 11,100 tons of lignite briquets, a daily average of about 21,250 tons. During the first twenty-one days of September the O. R. C. A. received from the Ruhr 154,673 tons of coke, a daily average of 7,400 tons.

### Competition and Iron Strike Hamper Belgian Trade

There is really no change in the situation in the Belgian market. The iron works strike is still on and continues to affect the consumption of industrial coals, already none too good, and, notwithstanding the exchange rate, foreign competition is unabated.

Full-sized briquets continue to be in rather poor request.

Domestic fuels, on the contrary are extremely firm. Anthracite in particular, is rising steadily and is quoted at the Brussels Bourse 5 fr. above the price of last week. All other domestic grades, as well as ovoids, are enjoying the same favor. Foreign demand in domestic fuels is active at firm prices.



### Movement Slow and Scattered At Hampton Roads

Movement at Hampton Roads was slack last week, the slow-down of the Western market having had a similar effect on New England shipments. Many mines serving this port, which took on big activity a month ago, again are down to a three-day schedule.

Scattered foreign shipments have been recorded and bunker trade is holding its own.

### Export Clearances, Week Ended Oct. 10, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Newfoundland: | |
| Nor. Str. Certo, for St. Johns | 3,225 |
| For New Brunswick: | |
| Nor. Str. Landvard, for St. John | 4,285 |
| Br. Schr. Cutty Sark, for St. John | 981 |
| For Brazil: | |
| Br. Str. Dovenby Hall, for Santos | 5,777 |
| For Cuba: | |
| Amer. Schr. Thann, for Cay Frances | 3,207 |
| Dan. Str. Nordstjernen, for Havana | 3,450 |
| Dan. Str. Jelling, for Havana | 3,006 |
| For Argentina: | |
| Br. Str. Blythmoor, for Buenos Aires | 8,830 |
| For Canada: | |
| Br. Str. Poliki, for Montreal | 2,025 |
| For Porto Rico: | |
| Amer. Str. Isabela, for San Juan | 4,012 |
| For Nova Scotia: | |
| Br. Schr. Coral Spray, for Lockeport | 131 |
| For Peru: | |
| Br. Str. Dunstaffnage, for Callao | 2,973 |

FROM BALTIMORE

| | |
|---|---|
| For Italy: | |
| Ital. Str. Valtellina, for Civita Vecchici | 7,695 |

### Hampton Roads Pier Situation

(Gross Tons)

| N. & W. Piers, Lamberts Pt.: | Oct. 1 | Oct. 8 |
|---|---|---|
| Cars on hand | 1,841 | 1,537 |
| Tons on hand | 113,938 | 94,851 |
| Tons dumped for week | 162,229 | 135,199 |
| Tonnage waiting | 15,000 | 5,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 1,370 | 1,569 |
| Tons on hand | 107,600 | 123,200 |
| Tons dumped for week | 95,558 | 81,235 |
| Tonnage waiting | 3,682 | 6,000 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,990 | 2,539 |
| Tons on hand | 151,610 | 119,845 |
| Tons dumped for week | 152,031 | 162,431 |
| Tonnage waiting | 17,940 | 3,515 |

### Pier and Bunker Prices, Gross Tons

PIERS

| | Oct. 3 | Oct. 10* |
|---|---|---|
| Pool 1, New York | $5.35@$5.60 | $5.35@$5.60 |
| Pool 9, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 10, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 11, New York | 4.45@ 4.70 | 4.45@ 4.70 |
| Pool 9, Philadelphia | 4.85@ 5.05 | 4.85@ 5.05 |
| Pool 10, Philadelphia | 4.55@ 4.75 | 4.55@ 4.75 |
| Pool 11, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 1, Hamp. Roads | 5.00 | **5.00@ 5.15** |
| Pool 2, Hamp. Roads | 4.65 | **4.65@ 4.85** |
| Pools 5-6-7, Hamp. Rds. | 4.50 | 4.50[illegible] |

BUNKERS

| | Oct. 3 | Oct. 10* |
|---|---|---|
| Pool 1, New York | $5.60@$5.80 | **$5.60@$5.85** |
| Pool 9, New York | 5.25@ 5.50 | 5.25@ 5.50 |
| Pool 10, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 11, New York | 4.70@ 4.95 | 4.70@ 4.95 |
| Pool 9, Philadelphia | 5.05@ 5.25 | 5.05@ 5.25 |
| Pool 10, Philadelphia | 4.75@ 4.85 | 4.75@ 4.85 |
| Pool 11, Philadelphia | 4.60@ 4.75 | 4.60@ 4.75 |
| Pool 1, Hamp. Roads | 5.10 | *5.00@ 5.15* |
| Pool 2, Hamp. Roads | 4.75 | 4.65@ 4.85 |
| Pools 5-6-7, Hamp. Rds. | 4.60 | 4.60 |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Oct. 3 | Oct. 10* |
|---|---|---|
| Admiralty, large | 24s. | *23s.6d.@24s.* |
| Steam smalls | 11s.3d. | *10s.@10s.3d.* |
| Newcastle: | | |
| Best steams | 16s.6d. | *15s.@16s.6d.* |
| Best gas | 16s.6d. | 16s.6d. |
| Best bunkers | 15s.@15s.6d. | *14s.6d.@15s.* |

* Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

The Montevallo Coal Mining Co. is planning extensive improvements in its plant facilities at Aldrich Mines, in Shelby County, a large steel washery and tipple being under consideration, in which will be installed the most modern machinery and equipment for handling and preparation. An 800-hp. electric hoist is now in process of installation, which will take the place of the steam engine in use at present. A substation has been provided at Aldrich by the Alabama Power Co., which will provide ample power facilities for the operation of the electrical equipment to be added. The mines are now operating at capacity on full-time schedule.

## ARKANSAS

Samples of coal are being collected from all the working mines in the State by N. T. Bourke, research engineer with the University of Arkansas engineering experiment station, so that the Arkansas coals may be analyzed, the heat content computed, the sulphur determination made and the fusing point of the ash found. There are approximately 100 working mines in the state.

## COLORADO

John Riffey has acquired an interest in the Valley View coal mine, Mancos, hitherto owned and operated by Karl Hauert. The owners are putting in a 600-ft. tram to convey the coal from the mine to wagon road on the lower level. They also are taking steps to put in a fan and ventilating system and to hire the necessary mine foreman in compliance with the new law regulating the operation of coal mines.

## ILLINOIS

The Illinois Miners' Examining Board will hold examinations at Johnston City, Oct. 15; West Frankfort, Oct. 16, and Duquoin, Oct. 17.

Decreased coal production, unemployment among miners and idle equipment are pictured by the annual coal report of the State Department of Mines and Minerals for the year ending June 30. With an output of 66,144,361 tons, Illinois mines fell 6,164,304 tons short of last year's total. The mines employed 81,605 men this year, a decrease of 18,160 from the previous year. Only 898 mines were operative during the last year, a loss of 134. District No. 10, with a gain of 1,065,111 tons, was the only one showing an increase in production.

Announcement has been made by the Saline County Coal Corporation that its big Harco mine will resume operations at once after several months of idleness. The shaft employs 750 men and is one of the largest in the Harrisburg district.

The Worthuskey Coal Co., operating near Cambria, south of Duquoin, has resumed operations.

The Ward coal mine, at DeSoto, which has been idle for nearly two years, has been sold to a company which will handle its output to the Illinois Steel Co. Preparations are being made to put the mine in working condition. Practically all of the homes destroyed at DeSoto in the great cyclone last March have been rebuilt.

With less than two fatalities for each million tons mined during the year ending June 30, Illinois now leads all the states in the Union for safety in coal mining operations. The annual report of the state department of mines and minerals says only 117 fatalities were reported during the year in coal mines. Falls of roofs and sides took the heaviest toll, killing 57 miners, and accidents in the handling of pit cars and motors came next with a grist of 30 lives. Electricity caused ten deaths and explosives nine.

The Coal Mine Service Co., 307 North Michigan Avenue, Chicago, was incorporated in Illinois recently to supervise, superintend and act in an advisory or directing capacity in connection with the operation of coal mines and by-products plants. The capital is $10,000. The incorporators are D. Harold Davis, John M. Tueby and M. Hayes Kennedy.

After being closed since early last spring the Brewerton Coal Co., Lincoln, opened for operation late in September. The decision to open came following a conference between the pit committee of the local and the officials of the mine. Immediately following the conference the seals were broken and the fans started for the clean-up.

The properties of the St. Louis Coke & Iron Co., at Granite City, will be offered for sale Oct. 20 by Special Master in Chancery Edward P. Allen to end the receivership of the company and pave the way for its reorganization. The company was organized by financial interests largely identified with the National Enameling & Stamping Co., headed by George W. Niedringhaus, to manufacture coke from bituminous coal from the southern Illinois fields under a new process. The original organization was the St. Louis Coke & Chemical Co., but the name was later changed to the present one. The company's properties are valued at $12,000,000 and the plans for reorganization contemplate $3,000,000 in improvements and enlarging the plant. It is understood that the bondholders will bid in the property when it is offered for sale.

Charles Sulski, Spring Valley, has been appointed county mine inspector of Bureau County. Mr. Sulski was mine manager at No. 1 mine of the Spring Valley Coal Co. until that mine was abandoned last May.

## INDIANA

A heavy slate fall in Binkley Mine No. 3, south of Jacksonville, Oct. 1, killed four men and seriously injured two others.

The Sunlight Coal Co., owning extensive strip mines near Boonville, is working to its full capacity as are the Enos and Gray strip mines of Oakland City.

Among mines which have reopened recently are Somerville No. 2, at Somerville, where the management has promised miners steady employment for an extended period: Fork Ridge mine, near Oakland City, which was closed four years ago. The Pike County Coal Co. mine No. 3, at Petersburg opened Oct. 1 with a full force of men. The mine has a capacity of 900 tons and normally employs 100 men. No. 1 mine, owned by the same company and the largest in Indiana south of the B & O. R.R., has been in operation since Aug. 1, employing a force of 475 men.

Announcement has been made that Jackson Hill mine No. 6, in the Terre Haute field, has resumed operations. The mine has been down for several months and about 300 miners were put to work.

A campaign to induce manufacturers, business men and citizens generally to use Indiana coal has been inaugurated at Brazil. Officials of the United Mine Workers of Indiana plan to begin a statewide campaign to have residents of the state to use coal mined in Indiana. Ora Gasaway, board member of the union, told a meeting of business men at Brazil that they had been preaching to miners to trade at home and that the miners now ask them to trade at home and start by using Indiana coal. A slogan "Trade at Home by Using Indiana Coal" was proposed by him. He will go before the Indiana State Chamber of Commerce in his first step to start a state campaign.

Sale of approximately 6,117 acres of

coal lands in Sullivan County to the Connery Coal & Investment Co., of Chicago, Ill., has just been announced by the law firm of Hays & Hays, of Sullivan, who acted as agents for the Indiana Coal Co. and R. R. Hammond, of Chicago, in the deal. The consideration was not given. Hinkle C. Hays, of the law firm which acted as attorneys for both buyer and sellers in the deal, said that no time had been fixed for opening of the new property, but that it was certain that the sale presaged additional coal mines in Sullivan County.

Miami mine No. 6, in the Clinton field, was closed recently for an indefinite period. Another mine operated by this company in the same field will be continued in operation. This company's business virtually is all railroad business and can be handled by the one mine. Mine No. 6 is said to be nearly worked out.

## KANSAS

One hundred and twenty-five miners employed at No. 21 mine, near Scammon, leased from the Western Coal & Mining Co., and 150 employed at No. 18 of the Clemens Coal Co., four miles west of Pittsburg, went on strike Oct. 5. At both mines the cause assigned was that the companies have increased the charge for explosives and supplies, notably raising the price of fuse from 40 or 45c. to 70c. The miners contend that no greater charge should be made than prior to the signing of the Jacksonville agreement. Matt L. Walters, president of District 14, United Mine Workers, stated that the strike has the approval of the district executive board.

The strike at Mine No. 2 of the Young Coal Co., near Weir, which had lasted five months, was ended Oct. 3 by agreement between the operator and the miners' union. The cause of the strike was the allegation of the union that the company advanced new men ahead of their turn on the waiting list.

James Sherwood, state mine inspector of Kansas, has issued a warning to all coal operators in the state to take special precautions against explosions. Atmospheric conditions augment the natural hazard of dusty mines at this season, Mr. Sherwood said, and strongly urged wetting down the dust.

The Sheridan Coal Co. has leased its mine No. 18, near Arma, to Andrew Gaslein, of Arma, E. M. Roberts, Sr., superintendent of the Sheridan, announces. The mine, which has been idle since February, will have to be cleaned and extensive repairs made before production is resumed. Throughout most of last winter this mine employed 200 men. Mr. Roberts stated that mine No. 20, in the northern part of Crawford County will be leased soon if the coal market continues to show improvement. Several prospective lessees are negotiating for the mine. Having been sunk in recent years, the mine is capable of one of the largest productions in the district, but has not yet been developed to that point. This mine is located on a 1,000-acre tract on which the coal is said to be of good quality and thickness.

**The Colored Section of a Southern Mining Town**

Contrast the appearance of this street in Edgewater, Ala., with the negro section in many a Southern community of 25 or 30 years ago and it is easy to understand the present urban trend of the colored man. Like anyone else the negro will seek the place where conditions in general are most nearly to his liking. And logically he prefers such dwellings and other surroundings as are here depicted to the back-alley abodes which have long been considered as his natural habitat.

The Domestic Fuel Co.'s mine No. 3, near Gross, has been leased to the George T. McGrath Coal Co., which is speeding up repairs on the property preparatory to operating. This shaft has not been worked since the World War and is practically unexploited. Labor and market conditions caused it to be shut down soon after the shaft was sunk.

Negotiations are under way for the lease by the Central Coal & Coke Co. of its mine No. 49, near Frontenac, to Mark Knott and Frank Cumiskey, both of Pittsburgh. The mine, one of the largest in the district, employing normally between 300 and 350 men, has been idle since the general strike of three years ago. In the meantime its smokestacks have been blown down and other damage of unknown extent has resulted. A smokestack now is being built to permit the operation of fans to rid the shaft of gas. As soon as it is considered safe to venture into the mine an inspection will be made which will determine the lease.

## KENTUCKY

At Madisonville, preparations are being rushed for the opening of the Rich Coal Co. mine No. 11, which, when completed, will have a daily capacity of 1,000 tons. Northern and Middle-Western railroads are reported as furnishing the largest market for coal mined in that vicinity.

With the fall elections drawing close more and more is being heard regarding the proposed legislation featuring a coal tonnage tax in Kentucky during the 1926 legislative session starting in January.

After a long argument for better passenger train service in the Hazard district, on the Eastern Kentucky Division of the Louisville & Nashville R.R., in which coal operators were quite active, the road has agreed to give better service on the First Creek and Lotts Creek branches, and between McRoberts and Hazard. Heretofore much time was lost by sidetracking the passengers for coal trains and running mixed freight and passenger trains, which meant that operators from Cincinnati, Louisville, Lexington and other points were subjected to delay and inconvenience in efforts to visit their mine properties.

The Hatfield-Reliance Coal Co. has been busy in having the mine plant of the Mitchell-Willis Coal Co., at Gorman, on First Creek, cleaned up and placed in condition to start operations after a long shutdown. The Adkins mines, at Dakota, and Alex McIntyre mines at Fusonia also are getting ready to resume.

The Cornett Lewis Coal Co., Harlan Collieries Co., Kentucky Cardinal Coal Co., Creech Coal Co., Harlan Wallins Coal Corporation and R. C. Tway Coal Co. recently answered a call sent out by H. A. Robinson, field representative of the Kentucky Childrens' Home, at Lyndon, for fuel supplies. Each of these companies donated a car of eastern Kentucky coal.

It is reported from the Elkhorn and Hazard fields of Eastern Kentucky that the Kentucky & West Virginia Power Co. is enlarging its transmission lines in that district to reach more mines and give better service in the Kentucky coal fields. Considerable improvement is under way also in West Virginia, connecting into the Charleston, Logan and other districts and with some points in Southern Ohio. The company is operating a large central power plant at Lothair, near Hazard, and is furnishing about 90 per cent of the mine power in the Hazard and Elkhorn fields. The company recently entered a contract to furnish power to the Consolidation Coal Co. plants, which will add considerably to its output. Connections have recently been made to a power plant at Betsey Lane, in Pike County; Appalachian Power Co., at Bluefield, W. Va., and Norton, Va., so that surplus power can be transferred from one section to another.

Ray Moss, of Whitesburg, when in Cincinnati recently, confirmed the report that he had purchased the holdings of the White Star Coal Co., operated by the Detroit City Gas Co. at Wilhoit. These properties were taken over during war times at a figure said to be in the neighborhood of $450,000. Though the repurchase price was not disclosed it is said to have been considerably less than the former transaction involved.

A. L. Allais, president of the Columbus Mining Co., of Chicago, at the late September term of the Perry County

Court was appointed receiver for the Montgomery Coal Co., at Vicco. It is understood that the liabilities causing the receivership amount to $53,000 while the mines are valued at four times that amount. Mr. Allais is receiver also for the Daniel Boone Mines, also in the Hazard district.

Under the direction of J. S. Oldham, of Whitesburg, the new owners of the Mitchell Willis Coal Co., on First Creek, near Typo, have cleaned up the company's mines and resumed operation. These properties were obtained from the Hatfield Reliance Coal Co., of Cincinnati, and the work of putting them in shape for operation required four months. A new name will be used by the corporation.

## MINNESOTA

Formal notice has been served upon the railroads of Minneapolis that the city ordinance against the use of soft coal other than smokeless in switching engines will be enforced hereafter. The ordinance was passed in 1909 and was upheld as constitutional by the State Supreme Court in 1911. It declares the use of other soft coal to be a nuisance and carries a fine of $25 to $100 for violation.

The Superior coal dock at Duluth, operated by the Henry Ford interests, is now nearly full of Kentucky coal, which is still being handled on this market through the auto sales agency. The company has taken steps to obtain ownership of the Duluth dock through bond foreclosure proceedings and after title has been obtained it is understood that steps will be taken to increase the coal handling and storage capacity of the dock in addition to providing handling facilities for autos and auto parts.

## MISSOURI

A. M. Boudinier has just installed a new coal shed, scales and office building to be used in the operation of a coal mine at Perry.

A new mine has been opened at Crescent Lake and coal is being taken out. The mine is owned by the Fair Play Mining & Development Co. The coal was found at a depth of about 200 ft. and the bed is about 26 in. thick and said to be of good quality. Mining operations are being pushed and just as fast as the excavation is enlarged men will be added to the working force.

## NEW YORK

In connection with the application of Burns Bros. to list on the New York Stock Exchange 16,421 additional shares of Class A common stock and 16,427 shares of Class B common stock, it was reported that the proceeds from these issues is to pay for Steamship Fuel Corporation and the Wyoming Valley Coal Co. and subsidiaries, recently acquired from S. A. Wertheim.

## OHIO

The tipple at the Fort Pitt mine of the Central Coal Co., operating at Dillies, opposite Moundsville, W. Va., was destroyed by fire last week, entailing a loss estimated at $30,000, partly covered by insurance. According to A. H. Smitherman, superintendent of the company, the mine has been closed down for some time and the cause of the fire is therefore unknown.

David Watkins, of Buffalo, Ohio, was named Oct. 1 to succeed William Roy, Bellaire, as vice-president of the Ohio Mine Workers' union. Watkins was nominated by Lee Hall, president of the union, and the executive committee approved the nomination. Roy recently resigned.

Coal is being mined in the Vulcan Coal Co.'s mine at Pomeroy on a co-operative basis. Coal will be shipped in the current week. Prior to its shutdown because of the Jacksonville agreement it empolyed 350 men. A number of Pittsburghers own the mine.

A meeting in connection with the old Interstate Coal & Dock Co.'s financial affairs, which have been more or less involved since a receivership four or five years ago, was held in the Business Men's Club in Cincinnati on Oct. 2. Present were C. H. Mead, of the Mead Coal Co., of Beckley, W. Va.; M. M. Tyree, of Huntington, W. Va., and J. A. Teegarten, of the Low Volatile Coal Co. of Columbus, and others from the east. What further steps were taken or what plans were outlined were not made public.

Reports from the four mines of the Pittsburgh Coal Co. in the Pomeroy field operating under the 1917 wage scale show that output is increasing rapidly. About 500 men are employed at the four openings and production is in excess of 8,000 tons weekly.

The international office of the United Mine Workers has revoked the union charter of the local at Bellaire. Two unauthorized strikes at the Franklin mine of the Cleveland & Western Coal Co., at Stewartsville, within four days led to the action. The same coal company has started up its Johnson mine.

The Webb mine of the Cambria Collieries Co., Shadyside, resumed operations Oct. 1 after being idle for two years. Seven hundred and fifty men are employed at the plant. United Mine Workers officials were informed by the company that operations are expected to be continued at capacity throughout the winter. Announcement was made that 200 men have been added to the force of the Elm Grove Coal Co. mines, also operated under union scale.

Because of changes made in their Sullivan-Pond Creek holdings the Corey Mann George Co., of New York City, has decided to discontinue its Cincinnati offices as of Nov. 1, according to notices sent to Frank and Ed. Holyoke, in charge there.

A deed containing 39,200 words, but lacking internal revenue stamps to indicate the value, has been filed at St. Clairsville, covering transfer of several thousand acres of coal land in Washington and Wayne townships, Belmont County, by S. H. Robbins, Cleveland coal operator, to the Cleveland Trust Co. The consideration is given as $10.

## PENNSYLVANIA

The first violence in the anthracite strike was reported Sept. 29 in the dynamiting of the pump house at the Quinn mine in Dunmore. The blast caused a loss of $3,000. Blame has not been fixed.

An increase of three mines shipping by rail is shown in the operations of the Pittsburgh district during the week ended Sept. 26. There were 75 mines working which produced a total of 316,479 tons of coal, compared with 290,395 tons in the preceding week. The Pittsburgh Coal Producers' Association reports production of 15 mines out of 78 for that week as 74,388 tons, which is 12.2 per cent of capacity. This figure compares with 10.1 per cent in the preceding week and 40.5 per cent in the corresponding week last year.

A new steam tipple is being put in at the Adrian mine of the Rochester & Pittsburgh Coal & Iron Co., now operated by the Jefferson & Indiana Coal Co., which will much increase its handling capacity.

At a meeting of the Central Pennsylvania Coal Producers' Association directors and the board of managers of the Bituminous Coal Operators' Association held in the headquarters of both concerns in Altoona, Pa., on Sept. 29, an answer to the recent inquiry of John Hays Hammond relative to prepared sizes of bituminous coal for use in New England states was prepared and sent. The reply signed by Charles O'Neill, secretary, stated that the district was ready to supply the New England States with 1,106,917 tons of prepared sizes monthly, the mine-run capacity being 5,420,000 tons per month.

**This Lamp Rack Saves Time and Steps**

At Dawson, N. M., the Phelps Dodge Corp. has worked out this arrangement of revolving hangers in front of the charging racks. Thus the clerk brings every man's lamp to hand readily.

## UTAH

A local mining engineer named J. B. Jensen has completed a process that he believes will make Utah coal smokeless. Experiments were begun years ago. The process is to be exploited by a company which is being formed. A plant is already under consideration for the preparation of coal for the local market. Mr. Jensen says that at a cost not to exceed 30c. a ton Utah coal can be made smokeless without detracting from its fuel properties.

Miles L. Jones, prominent Ogden coal retailer and former city commissioner, is running for office again this fall.

## WEST VIRGINIA

Brooks S. Hutchinson, of Fairmont, vice-president of the West Virginia Coal & Coke Co., announced Oct. 7 that M. Benton Mitchell, formerly Marion division superintendent of the Bethlehem Mines Corporation, in charge of the Barrackville and Dakota mines, had joined the operating forces of that concern. Mr. Mitchell will be located outside of Fairmont, although no definite announcement is made as to his location or position with the concern, which has mines in 12 counties in northern West Virginia and four divisions—the Kanawha, Logan, Elkins and Bower. Mr. Mitchell was formerly connected with the Consolidation Coal Co. at Jenners, Pa.; in the Elkhorn field in Kentucky and in Utah.

L. E. Linkous and Joseph Ponton on Oct. 2 purchased the Vulcan mine from the receivers of the Brady-Thacker Coal Co. The Vulcan mine was one of the largest owned by the defunct company and employs 75 men when operating at normal capacity. The sale was given the sanction of Judge George W. McClintic, of the U. S. District Court for the southern district of West Virginia. The mine will be placed in operation at once by the new owners, it has been unofficially announced.

Miners from the Pittsburgh area, according to J. A. Martindale, examiner of the U. S. employment office in Huntington, are turning to the mines in southern West Virginia and eastern Kentucky for employment.

September will rank as one of the best coal tonnage months the railroads serving southern West Virginia have ever enjoyed. The total output of the mines served by the Norfolk & Western for September will equal almost four million tons, breaking all previous records. The Pocahontas district shipped 1,737,550 net tons, but did not reach its record of May, 1922, when 1,919,289 tons were shipped. The Chesapeake & Ohio handled about five million tons and the Virginian transported over 600,000 tons.

The Mercantile Trust Co., Fidelity Trust Co., Robert Garrett & Sons, of Baltimore, and Spencer Trask & Co. and Hambleton & Co., New York City, have underwritten an issue of $4,500,000 Elk Horn Coal Corporation six-year 6½ per cent first mortgage bonds. The issue will be offered publicly in the near future. Proceeds will be used to retire the $6,000,000 issue of ten-year 6 per cent bonds of the corporation which mature Dec. 1, 1925. The New York Stock Exchange has received notice from the Elk Horn Coal Corporation of its intention to change the authorized issue of common stock from $22,000,000 of $50 par to 440,000 shares of no par value.

Negotiations are in progress for the purchase by the Ford interests of Detroit of about 50,000 acres of coal and timber land on Elk River, in Webster and Braxton counties. Among those active in conducting negotiations have been Former Senator W. E. Chilton, of Charleston; Cary Hines, attorney, of Sutton; G. E. Kesterton, of Huntington, and John Newton, of Sutton. Engineers and geologists representing the Ford interests have made a survey of the land and have reported their findings to the Detroit office.

## WYOMING

The coal companies' payroll in the Rock Springs district on Oct. 1 was the largest to be distributed among the miners in the past year and a half. Steadily increasing railroad traffic, with resultant increased tonnage demands upon the mines supplying railroad coal, has had much to do with this increase in production.

The Inland Coal Co. has opened a wagon mine near Saratoga for production of domestic coal for local consumption.

The Blazon Coal Co. has added a night shift at its mine south of Kemmerer. Recently fifteen men were placed on night shift and on Oct. 1 several more men were employed for that shift. This is said to be the first night force to be worked in the Lincoln County field for many years. The Blazon camp, the youngest in the Kemmerer district, now employs more than 100 men underground.

No. 6 Mine at Sublet, owned by the Kemmerer Coal Co., which was the scene of Wyoming's last explosion disaster, was reopened for production recently. This mine has been on the non-producing list since the blast on Sept. 16, 1924, which claimed 39 lives. At that time the mine was badly wrecked and several months' work was required to place it in condition for operation.

## CANADA

A seam of coal has been discovered at Tranquille, near Kamloops, British Columbia, and the Tranquille Mining Co. has been organized by local interests to develop it. Details as to size of seam and quality of coal are lacking. Efforts to develop a coal field at Chu Chua, near Kamloops, have been futile to date, owing to the poor quality of the coal and the lack of continuity of the seams.

The government of Nova Scotia has announced that the British Government has designated Sir Andrew Duncan, K.C., M.L.A., LL.B., formerly Coal Controller for the British Government and now chairman of the Advisory Committee of the British Mines Department, to be chairman of the Commission of Inquiry into the coal industry of Nova Scotia. The commission will be composed of a chairman and two associate members.

The Princeton (B. C.) Collieries are preparing to open a new seam of coal, which is expected materially to increase the company's output.

Charles McCarthy, a Toronto barrister, claims to have discovered coal deposits near Smoky Falls, in the Nipissing District of Ontario, within a short distance of railway facilities. For the past five years Mr. McCarthy has been conducting diamond drilling operations and states that he has struck a bed of coal at a depth of about 115 ft. varying in thickness from 7 to 11 ft. The known area of the coal, according to his statement, is about two miles long by three-quarters of a mile wide. The quality of the coal is described as between a bituminous and a lignite. Samples have been brought to Toronto for analysis.

Fred De Sieyes, manager of the Canadian Coal Sales Co. Ltd., of Winnipeg, Man., was on Oct. 2 committed for trial by the Winnipeg Police Magistrate on a charge of fraud in connection with the supplying of coal to the military barracks. He was released on bail for $50,000. A second charge for fraud in connection with a coal contract is pending.

Since the resumption of work in the coal mines of the British Empire Steel Corporation operations have been speeded up and maximum production is being maintained. The report for September shows a total output of 447,111 tons, as compared with 385,061 tons for September, 1924.

A. Slade, director and secretary of the British Colonial Coal Mines of Canada, Ltd., states that reports from the Larchwood basin property, in the Sudbury district of Ontario, have been so encouraging that the company has decided to sink a shaft.

## Recent Patents

**Mining Machine;** 1,544,076. Edmund C. Treese, Huntington, W. Va., assignor to the Sullivan Machinery Co., Chicago, Ill. June 30, 1925. Filed Oct. 12, 1921; serial No. 507,344.

**Mine-Car Coupling;** 1,544,203. Andrew J. Baldwin, Pikesville, Ky. June 30, 1925. Filed April 26, 1923; serial No. 634,789.

**Feeder and Scale for Kickback Dumps;** 1,544,475. James A. Nolan, Bowerston, Ohio. June 30, 1925. Filed Sept. 30, 1924; serial No. 740,828.

**Mine Hoist;** 1,544,758. Frank E. Hulett, Cleveland, and Leif Lee, Youngstown, Ohio. July 5, 1925. Filed Oct. 15, 1920; serial No. 417,115.

**Overturning Cage;** 1,544,998. Daniel F. Lepley, Connellsville, Pa. July 7, 1925. Filed Oct. 22, 1921; serial No. 509,651.

**Clamshell Bucket;** 1,545,098. Edward L. Harrington, Erie, Pa., assignor to G. H. Williams Co., Erie, Pa. July 7, 1925. Filed Sept. 25, 1924; serial No. 739,942.

**Process of Producing Coke;** 1,545,620. Walter E. Trent, Washington, D. C. July 14, 1925. Filed Oct. 6, 1923; serial No. 667,046.

## Coming Meetings

**Electric Power Club.** Fall meeting at Briarcliff Manor, N. Y., Oct. 19-22. Secretary, S. N. Clarkson, B. F. Keith Bldg., Cleveland, Ohio.

**American Welding Society.** Fall meeting, Oct. 21-23, Massachusetts Institute of Technology, Boston, Mass. Secretary, M. M. Kelly, 33 West 39th St., New York City.

**American Iron and Steel Institute.** Twenty-eighth meeting, Oct. 23, at Hotel Commodore, New York City. Secretary, Howard H. Cook, 40 Rector St., New York City.

**American Society for Testing Materials.** Committee meetings, Oct. 27-29, Hotel Cleveland, Cleveland, Ohio. Coal and Coke Committee at 2 p.m., Oct. 28; A. C. Fieldner, chairman.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting, Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**Illinois Mining Institute.** Fall meeting, Nov. 6 and 7 at West Frankfort, Ill. Secretary, Frank F. Tirre, St. Louis, Mo.

**Harlan County Coal Operators' Association.** Annual meeting, Nov. 18, at Harlan, Ky. Secretary, E. R. Clayton, Harlan, Ky.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering.** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

## New Companies

**The Conveyor Sales Co., Inc.**, New York City, has been chartered at Albany, N. Y., with 400 shares of no par value to manufacture coal and mineral mining machinery. J. E. and N. A. Hurwitz, Manhattan Beach, and C. L. Young, 532 West 111th St., New York City, are the incorporators.

**The Connery Coal & Investment Co.**, an Illinois corporation, has qualified to transact business in Indiana. Harry V. Sherburne, Terre Haute, Ind., has been named state agent.

**The Portsmouth Coal & Mining Co.** has been chartered with an authorized capital of $10,000 to mine and sell coal. Incorporators are: John P., Ben H., Raymond F., Walter L. and Matilda Jones.

Articles of incorporation have been filed in Jefferson City, Mo., by the **LeFlore Coal Co.**, of Kansas City, Mo., capitalized at $12,000. W. L. A. Johnson, general commissioner of the Southwestern Interstate Coal Operators' Association, and his sons, L. W. Johnson and L. M. Johnson, were the incorporators. The company owns and is operating a shaft mine at LeFlore, Okla., where it has a branch office.

**The Empire Coal Sales Corporation**, Wilmington, chartered under Delaware laws, capital $50,000. G. W. Shillingford, president, has filed a certificate of statement and designation in the office of the Secretary of State of New York. The New York office is at 1 Broadway.

**The Process Fuel Co.**, Covington, Ky., capital $50,000, has been chartered by E. O. Martin, W. G. Eston and E. P. Hettinger.

**The Chelsea Coal Co.**, incorporated for $25,000, has been granted a charter by the Kansas State Charter Board. The company consists of L. E. Compton, W. O. Myers, and J. F. Downs, all of Pittsburgh, and J. A. Holland, of Mulberry, Kan. A steam shovel has been ordered and will be installed on 600 acres of land owned by the company near Chelsea, Okla. The Frisco will lay a switch to the mine. Sale of the coal will be through the Security Coal Co., with which Holland is connected, and which has an office in Kansas City. Myers is secretary and treasurer of the Pittsburg & Midway Coal Co.

**The Ford Coal Co.**, Cleveland, Ohio., has been chartered with an authorized capital of $10,000 to mine and deal in coal. Incorporators are J. C. Herbert, J. F. Wieser, K. Wirching, M. L. Deaver and M. Rush.

# New Equipment

## Air Cone Prevents Spray From Wasting Paint

In the accompanying illustration is shown a type of pneumatic painting outfit that is rapidly gaining favor with mining companies particularly throughout the West and Middle West. It is manufactured by the W. N. Matthews Corporation of St. Louis, Mo., and can be employed for painting a great variety of surfaces both wood and metal ranging all the way from machinery to dwellings.

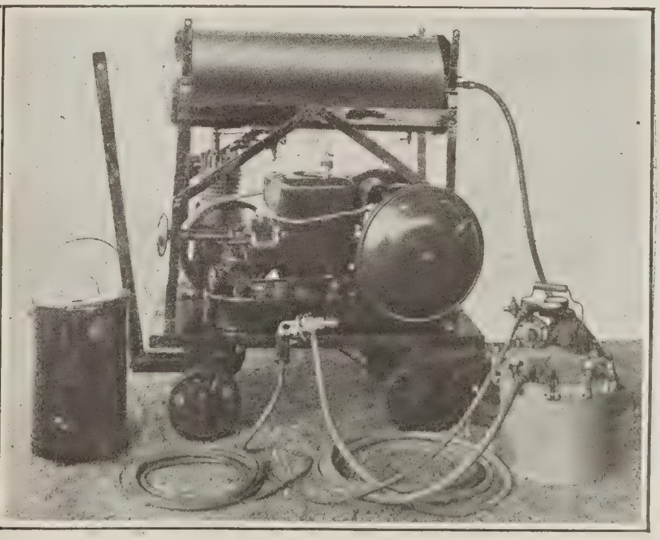
As normally constructed and here illustrated the outfit consists of a small gasoline or kerosene engine, an air compressor, a storage tank, a paint reservoir and a pneumatic brush or gun together with the necessary hose, regulating valves, pressure gages and the like. With an outfit of this kind one man can cover from four to six times as much surface as can a man with a hand brush. Furthermore, the paint is applied more evenly and is driven into every crack and crevice of the surface coated, thus affording a degree of weather protection impossible of attainment by hand-brush methods.

One of the chief advantages of this equipment is the "Volume F" gun. This is a patented air brush so constructed that a cone of air at high velocity completely surrounds or envelops the paint spray. By this means the mist or fog common to most pneumatic painting devices is reduced to a minimum and paint waste practically eliminated. This is particularly advantageous in outdoor work where paint sprays are liable to be affected by the wind.

There is no question but that mechanical painting is rapidly gaining in favor throughout the country. At first this method was applicable only to large single-color surfaces. With improvement in the equipment employed and a closer control of the paint spray has come a better appreciation of the advantages of this method of surface preservation and a wider adoption of pneumatic painting.

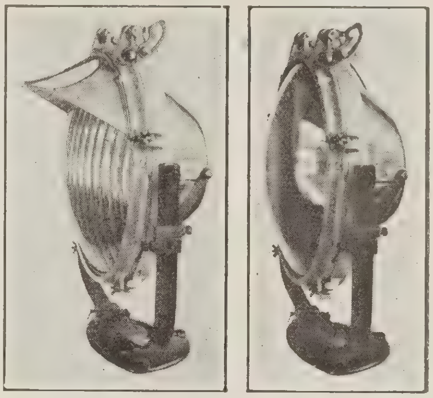
**Complete Paint Outfit**

*Engine, compressor and air tank are all permanently mounted on an easily portable truck. The balance of the equipment, paint container, hose, gun and the like may also be placed on this truck for transportation over short distances if desired.*



## Floodlight Projectors Have New Features

More or less of a radical departure from usual floodlight projector design is represented by the projectors shown in the accompanying illustrations and manufactured by the Pyle-National Co. of Chicago. In these devices ventilation has been dispensed with and the case made tight by means of a lead gasket. Dust, gas, moisture and insects are thus entirely excluded.



**Tight-Case Projectors**

These projectors, which may be turned and tilted into any position, are made air tight, thus effectively excluding all foreign material. Ventilation of these projectors is unnecessary.

The case is of cast aluminum alloy fitted with a drawn aluminum back and small parts of either this metal or bronze. Either crystal or "non-glare" glass reflectors 23 in. in diameter are provided and rectangular divergence lenses may be employed if desired. This projector is the latest addition to a line of similar lighting devices built by this manufacturer.

## Motor and Control Passes Bureau Tests

A new type of totally inclosed motor with control, especially adapted for use in gaseous mines and designed by the General Electric Co., has successfully passed the tests of the U. S. Bureau of Mines. This equipment, the first to pass the tests, will be approved by this bureau as a permissible motor when used with a suitable mine pump or other device to which it may be applied as a means of drive. The primary use for which the motor was designed is for driving mine gathering pumps, but it is expected that other uses will be developed.

The motor is a direct-current machine and, so far, has been made in but one rating—5 hp., 900 r.p.m., 550 volts, compound wound. Other ratings, however, are to be designed and submitted for approval as required. The General Electric Co.'s designation for the new motor is Type ME-6, Class BM construction.

The development of the motor followed insistent demands from the mining industry for a permissible motor for small pump work. The construction is such that all current-carrying parts are totally inclosed. Wide machined flanges are used at all joints, rather than the baffle plates for cooling escaping gases from internal explosions. There are no through bolt holes, all bolt holes being bottomed. The control switch is built on the same principle and is mounted directly on the motor.

The motor is started by being thrown directly across the line. No fuses are used in the control circuit, protection being secured by a thermal overload relay.

When the cover is removed from the controller all circuits are automatically de-energized except two shielded terminals of the incoming lines. Thus it is impossible to start the motor or draw an arc with the controller cover removed unless it is done maliciously.

By means of this construction no heat, from any cause, whether sparking or explosion, can be transmitted to the outside of the motor in such intensity as to ignite any gases surrounding the equipment.

## Safety Switch Design Gives Full Protection to Operator

A study by Westinghouse Electric & Manufacturing Co. of industrial switch requirements brought to light many definite ideas concerning the features required in a safety switch that was to give full protection to the operator and motor under all conditions.

As a result of this survey, the Westinghouse WK-55 full safety industrial switch was designed, embodying many important and practical features. The result is a switch that can be designated as both "fool proof" and "ignorance proof."

One of the problems which had to be contended with was that no live parts be within reach of the operator when he finds it necessary to change fuses. This requirement led to the development of the distinctive double door construction of the WK-55 switch. Within the main door of the switch is a smaller door giving access to the fuse compartment. This fuse-compartment door is interlocked with the operating handle in such a way that it will not open until the switch is thrown to the off position. In this position, even with the door open, no live parts are accessible and as long as the door remains open the switch can not be thrown on.

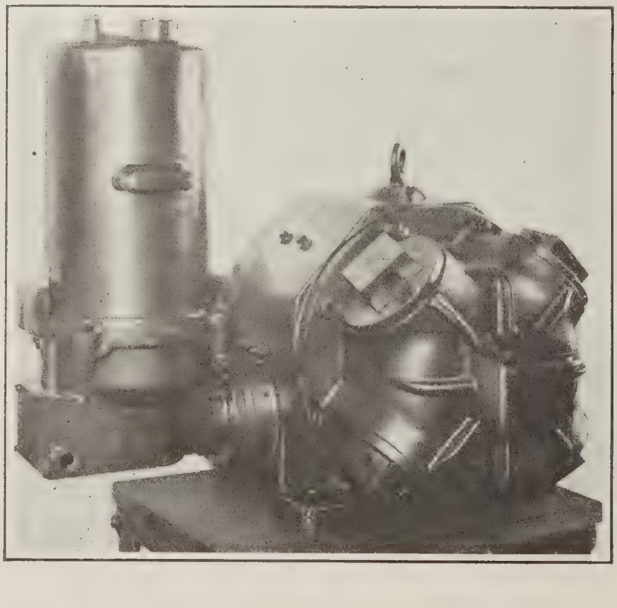
While the fuse-compartment door gives access to the fuses only, the outer door covering the entire switch inclosure is arranged for padlocking so that it can be opened only by an authorized person. This door can thus be opened for inspection and testing without interrupting the service.

Another requirement to be met was the simplification and elimination of parts within the switch box that would be subject to failures and thus form a hazard for dangerous short circuits. This problem was solved by designing a new make-and-break mechanism that is entirely contained in the operating handle outside of the cabinet. This innovation removes the danger of loose parts coming into contact with current-carrying parts of the switch and leaves more space for wiring.

**A Safe Industrial Switch**

Besides being safe to operate, a switch should be constructed so that it will not short circuit or start fires. Both personal injury and fire hazards are eliminated by the construction of this switch.

Probably the most difficult requirement was that of developing an arc quencher of simple design that would serve to extinguish the arc quickly and efficiently when the circuit was opened. Westinghouse engineers studied this problem and evolved a quencher which consists of metal laminations, separated by layers of insulation and air space. As the blade traverses the quencher, the arc is broken into a series of sparks that are cooled by the metal plates and by the air currents between them. As the blade passes through the quencher, the arc is dissipated and cooled to such an extent that the current drops to zero and the circuit is interrupted without danger or damage. The arc quencher of the WK-55 switch is capable of breaking circuits carrying from 50 per cent more current in the larger sizes to 300 per cent more in the smaller sizes than the rated amperes of the switch, even at 600 volts.



**Inclosed Motor And Control**

Here is a motor and starter designed for pump service in gaseous mines. It is started by being thrown directly across a direct-current 550-volt line. A thermal relay protects equipment from excessive overloads.

## Industrial Notes

**Foote Bros. Gear & Machine Co.**, Chicago, Ill., is about to place on the market a new series of reduction units equipped with the Sykes generated continuous tooth, herringbone gears. They will also publish a list of Sykes herringbone gears, which gives standard sizes and prices.

A one-reel motion picture entitled "Letting Dynamite Do It," has just been made by the explosives department of **E. I. du Pont de Nemours & Co.**, Wilmington, Del., and can be had for distribution on application to the company. The scenes show the use of explosives in many lines of industry and under many conditions without particular reference to coal.

**The Joseph Dixon Crucible Co.**, Jersey City, N. J., has added an aluminum graphite paint to its paint line. This paint is for use on all metal surfaces exposed to weather, gases, acids and smoke. It is composed of aluminum combined with the flake silica-graphite pigment and boiled linseed oil. Aluminum when used for paint making is of flake formation and, when combined with the Dixon pigment, each flake laps over, after the manner of fish scales, forming a covering of great elasticity and durability.

COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
E. J. MEHREN, *Vice-President*

Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. DAWSON HALL
*Engineering Editor*

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## Climbing the Backstairs to Victory

THE PRESIDENT of the United Mine Workers has a genius for extricating himself from dangerous positions by unexpected rear-guard attacks planned to divert public attention from fundamental issues. Mr. Lewis succeeded measurably in 1922 by berating the operators of western Pennsylvania and southern Ohio for refusing to meet him in joint conference, and the technical charge of contract-breaking obscured discussion of the real issue of wages. He is attempting to repeat that strategy in his present campaign to wrest an undeserved victory from the anthracite operators. Afraid to submit the justice of his cause to an impartial tribunal, he resorts to his old tactics and endeavors to heighten public distrust of his opponents in the hope that the public will forget the intrinsic weakness of his own case.

Mr. Lewis' onslaught upon the standardization program adopted by the anthracite operators last April is part of his campaign to becloud the issues and win victory from panic and prejudice. When he says "the retailers feared that, if they protested, they would be cut off and given no more coal to sell," he feigns an amazing ignorance of the history of the events leading up to the promulgation of those standards. Not that the standards are perfect: they are merely the first steps in a program of sounder merchandising that must progress upward and onward if Mr. Lewis will be content with a reasonable wage for his followers and will support the producers in their efforts to discipline the workers who load dirty coal.

The whole question of sizing is still in a state of flux. The final answer must be reached by experiment and experience. The question cannot be solved by denunciation. The facts are that before the anthracite operators made the new schedule of sizes there was no general standard. Each company had its own. The retailer was in doubt as to what he was receiving when he specified any given size of coal.

Before the sizes were determined they were made a matter of conference between retailers and operators and the making of them was heralded by the former with acclaim, first because it replaced uncertainty by definite standards and secondly because on the whole it constituted an increase in size over the current practice. What the new standards provided was broadcast when they were announced. What is more the public which is the best judge, by its satisfaction shows that the new standards in general have improved the product, despite Mr. Lewis' belated discovery that their effect was harmful.

Time and accumulated experience must settle the question of what will prove the most satisfactory sizes. Attacks so palpably insincere as that unloosed by Mr. Lewis at Atlantic City last week will contribute nothing to a constructive decision in the public interest.

Of course, the public interest is a matter of no concern at all to the G.H.Q. strategists of the union. Their sole concern is in devising ways and means to so alarm the public that the consumer will set up a wail for anthracite coal at any price. That is why Mr. Lewis' attack on standardization was coupled with a warning that the public was living in a fool's paradise and was due for "a rude awakening" when the last ton of anthracite had been scraped from the planks in the dealers' yards. If Mr. Lewis and his aides can again sell the public the idea that a cessation of anthracite production means freezing to death in the New England and Middle Atlantic states, Mr. Lewis will again triumph. The selling talk sounds thin to those who know the facts, but Mr. Lewis knows the effectiveness of outmoded slogans—especially when fighting opponents so cursed with modesty in the expenditure of money on publicity that that very virtue is vicious.

## Getting Their Due

A NEW POLICY has been pronounced by the American Federation of Labor with great *éclat*—that hereafter the workman in industry shall be permitted to enjoy the benefit of the decreased cost of production. As a matter of fact he has been enjoying it. Only the other day an eminent barrister in Illinois pointed out how in Washington's time a wealthy planter would leave to his daughter three pans and a large boiling kettle and to his son six chairs and a table. After all the nicknacks which today we would never mention had been distributed in the will, the eldest son was left several thousand acres of land. So much did they think in that day of forms of wealth which in these times everyone can have in abundance and no one values. The working man has his phonograph, his radio, his automobile. Who shall say he has not benefited and rightly from the cheapening of manufacture?

But if the profit of all this cheapening is to go to the man in the industry thus developed, the miner and the farmer will be greatly disadvantaged. They have proved themselves little more productive than they were several decades ago. The miner being in an industry where large masses must be handled and faced with greater depth and distance has not increased his output a thousandfold like the makers of pins, horseshoes and knives. The farmer confronted with soil of diminished fertilitiy does little better than his forbears or barely as well. The profit of invention, systematization, power, simplification and standardization must go to consumers generally and not solely to these industries that are peculiarly adapted to such development.

So long as we have the unlimited action of supply and demand whether as to labor or capital, the consumer (subject of course, to patent intervention) will get the full advantage of cheapening processes. The principle of wage control favored by the Federation would try to keep from the public and give to the worker in any given industry the advantage of progress for which he was in nowise responsible. Such a restricting to certain persons of the advantages of changes in method of manufacture, by depriving the consumer of participation in the profits, would result often in there being no changes.

If, for instance, when pins were made by hand hammers, a machine had been invented to make them by the gross, that machine would have never been constructed had this rule been in force; first because there would have been no advantage to the constructor, because only the workman who used it would profit and second because if someone were willing to build and exploit the machine the cost of the pins being no lower than that of the hand-hammered variety would be so high that no one would have been willing to purchase a gross of them. The new principle of the Federation is none too clear but, if it is just what it appears to be, it will put an end to a progress that has been quite helpful to the health, wealth and happiness of all mankind including above all the workman.

If it simply means that the laboring man must share in economies of production without regard to the industry in which he may be employed then there is no new principle involved. Because it is alleged to be new it is natural to assume that it reserves to the men in any industry the economies in that industry, a principle which seems fair till the conditions are examined. Had this been the old rule our mechanics would have lived in palaces, our railroad men in fine houses and our masons, carpenters and miners, and especially our farmers would have nothing but the sky as a covering for their heads.

## Repeal of Certification Law

ALL THAT HAS BEEN said by John Hays Hammond as to the need for a repeal of the certification law in the anthracite region is correct. A law requiring the specific instruction of the miner before forminig his duties would be more efficacious in promoting his safety and would not act as a barrier to prevent those men who desire such work from entering the industry.

The certification law prevents any prospect of introducing men into the mines to replace those who are striking, but after all if the law were taken off the statute books the attempt of the other men to accept work would be just as effectively prevented by the violence of the strikers, so its annulment would serve but little purpose. However, if removed, it would give a Governor, determined to keep order and maintain the rights of the individual, an opportunity to solve the anthracite puzzle by some other and better way than by another surrender to the demands of the mine workers.

The protection of the right to work for whom one will is believed to be inherent under the Constitution, but the exercise of that right would be as foolhardy in the anthracite region as it was in Herrin, and if the law restricting the right to work to certificated miners were repealed, much would need to be done before it would be prudent for a man to accept work from a coal company prior to a settlement of the present wage dispute.

Our practices are defective in that they wait till a dangerous condition arises before an attempt is made to correct it. To draw an analogy: Suppose a rule were somehow enforced prohibiting the rock dusting of a mine till it had been the scene of a disaster. Similar to this is the requirement that martial law shall not be declared or troops introduced till the sheriff confesses the situation is beyond his control, which means until acts have been committed by which the lives and properties of the citizens are destroyed. We have so safeguarded ourselves against the misuse of laws that they are not preventive of damage till much damage has already been done.

## Hope for the Oil-Burners

SAD IS THE FATE of the consumer of oil whose apparatus smokes and spoils the interior and exterior of his house, for his insurance does not protect him. Anyone who has burned oil in an oil lamp recognizes this danger. If the flame is ill-adjusted it does not have enough heat to consume the carbon and a greasy, nonremovable smut covers everything. Nevertheless the householder cannot make a claim for damages to the company that carries his insurance.

But there is hope. The Insurance Department in New York State by James A. Beha, the superintendent, has ruled that a rider specifically stating the purpose of protecting the insurer from the effect of the smoke and indicating plainly the additional coverage applicable can be added to the policies of underwriters.

A householder in New Jersey recently left his home for a day without shutting off his oil-heating equipment. The draft of his flue carried the smoke and soot out of the chimney to fall as a pall all over his newly painted roof. Incidentally it settled on the roofs of his neighbors and on the wash hung out to dry.

With some such new clause as is to be provided he can be protected, even if his neighbors are not, by the payment of additional insurance. Thus is the damage done by oil-burning apparatus recognized commercially. Another way to obtain protection is not to use oil at all, thus protecting, if the fuel is a suitable one, not only the householder but his neighbors also and preserving peace in the community.

## Speculation Must End

TO MAKE A STAKE has been the aim of too many operators. They rush into the enterprise during a strike or shortage, borrow all they can and plunge deeper and deeper in the hope of making big profits, interfering with the old timers in the industry. They go up like a rocket and descend like one. After the inflation of the industry ends, as it does, in a few short months, they flounder in debt and being burdened with many obligations, having agreed to pay all manner of royalties, and having mines ill-equipped and badly laid out, they mine and sell solely to keep up an appearance before their creditors. Having "high-price" mines, they have to sell coal below cost. They embarass everybody and by their shoddy construction, their poor housing and their accidents they disgust all good operators and the public.

Coal mining should be an investment. The operating company should be ready to shut down and should shut down the moment operating proves unprofitable. No royalties, bond payments or debts should make it fearful of such a wisely conceived suspension. However, a company that has invested in a plant and not merely taken a flier in coal will be likely to be able to run steadily through a depression at a little profit. If the industry is to attain the stability that sound financing requires, bankers must refuse to back fliers in coal.

# These Mines Run On Schedule As Railroads Do

## Island Creek Has Room-and-Pillar Plan Much Concentrated—Haulage Timed with Precision

**By Alphonse F. Brosky**

Assistant Editor, *Coal Age*,
Pittsburgh, Pa.

MINING AND HAULAGE in the group of 12 Island Creek Coal Co. mines in West Virginia have been developed systematically to meet the conditions in those properties. Room-and-pillar mining on a panel basis proceeds with noteworthy concentration and extraction has been improved considerably over that obtained with old-time methods. Wide rooms and double tracks at the faces plus a haulage system timed to give every man a full opportunity to load coal have combined to keep output up to maximum. The various operations within the mines are scheduled to occur with the precision of railroading and the results of this system are uniformly good.

The 25,000 acres of Island Creek coal owned outright, together with the 5,000 acres of the same measure held under lease by the company constitute practically one unbroken tract. This lies chiefly in Logan but partly in Mingo County, W. Va. Although this bed is fairly level there is an extreme variation amounting to 474 ft. in the relation between the bottom of the coal and the tipple-track grade. This disparity reaches its limits at mines Nos. 18 and 20. At the former operation on Mud Fork, the coal lies 189 ft. above the railroad tracks under the tipple, whereas at the latter it is 285 ft. below them.

Conditions underground, however, are fairly uniform over a considerable area of the property except for those variations which accompany differences in the thickness of cover. In the four mines on Mud Fork, where the roof has a tendency of flake, conditions are least favorable but on the whole permit adherence to the uniform system and methods of mining which have been adopted for all the mines.

### SEAM IS 80 IN. THICK

The average thickness of the Island Creek seam under this property is 80 in. The seam is composed of splint and gas coal in approximately equal proportions. Roughly, it is divided into two benches separated by a 1- to $1\frac{1}{2}$-in. slate parting which does not crumble in shooting and is easily separated from the coal. Above this parting and in the upper bench is a 30-in. thickness of hard splint coal topped by a 4-in. thick softer coal.

Below the parting and in the bottom bench is a 42-in. bed of semi-splint coal underlaid by about 12 in. of softer coal. The bottom is of hard slate, the top of massive slate 40 ft. thick. The entire property is free from drawn slate and the cover over it varies in thickness from nothing at the outcrop to a maximum of 1,200 ft. under the highest mountain peak. Strata of sandstone in this cover are estimated to aggregate a thickness of 140 ft.

These massive strata make possible the driving of wide rooms without support by timbers. At the same time, particularly under heavy cover, they interfere with economical drawing of pillars by usual methods, no matter what proportion between first and second mining might be established.

### ROOF HAD BEEN TROUBLESOME

In days gone by in all its mines the company drew pillars methodically in a concentration system. Great pains were taken to maintain straight robbing lines on a 40-deg. angle to the room entries. Despite every precaution toward successful pillar extraction associated with room-and-pillar mining, difficulties in holding the roof were encountered; and almost without exception the quantity of timber required in pillar sections was greater than would be justified today by the additional recovery which the standard room-and-pillar system yields.

The company has modified its earlier methods. Rooms are now driven as wide as the cover will permit without the use of timbers and the pillars are made only wide enough to hold this cover until parts of the pillars can be extracted by honey-combing. Recovery in first mining is 67 per cent. Second mining in the future is expected to bring up the total recovery to a minimum of 80 per cent.

The mining system which has been approved for standard practice is a true panel system in that the room workings are completely surrounded by barriers of solid coal, which are broken through by butt entries on one side only.

Main entries are projected in groups of four or six headings, depending on the haulage and ventilation requirements. These are driven 16 ft. wide on 50-ft.

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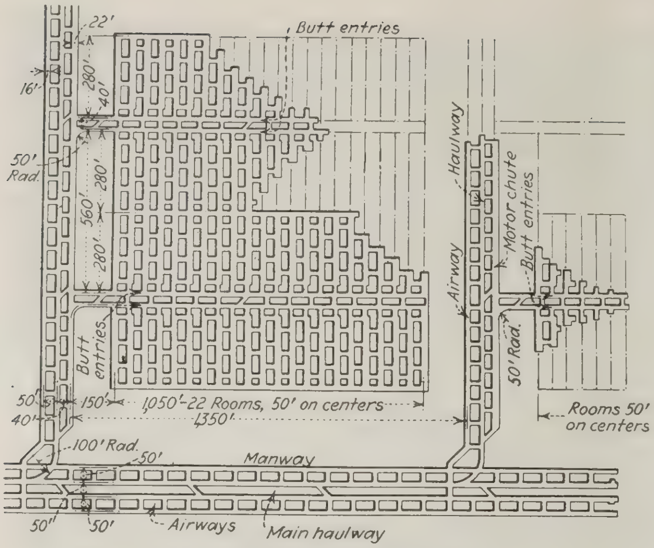
In the headpiece is shown a wide span of unsupported roof in No. 8 mine. From rib to rib along a line making equal angles with the sides the distance is about 35 ft. Under such sound roof it is possible to lay turnouts on large radius curves. Rail braces back the right-hand switch point.



**Standard Mining System Layout**

Between cross entries are panels which are pierced from only one side by the butt entries from which wide rooms are driven in two directions. The company intends, when it can get to it, to install rock dust barriers at the outlets of each of the panels. Rooms are 28 ft. wide on 50-ft. centers leaving room pillars 22 ft. wide which later will be partially recovered by "honeycombing." Recovery is now 67 per cent but the second mining is expected to raise this to 80 per cent.

centers and are protected by 280-ft. wide barriers. Crosscuts driven through the middle chain pillar of the main entry at the widely separated intervals of 420 ft., eliminate many expensive stoppings and minimize leakage of air from the intake to the return. Cloth brattices and sometimes a blower with flexible canvas tubes are used for conducting fresh air to the heading faces being advanced.

Cross entires are driven at intervals of 1,440 ft., center to center, in groups of three headings which are flanked by 150-ft. wide barriers. The airway and haulway are 16 ft. wide on 50-ft. centers. Adjacent to the haulway and on its inby side is a car storage entry termed the "motor chute." It is on 40-ft. centers with respect to the through haulway and is mined 22 ft. wide. Between live butt entries the motor chute is double tracked.

Pairs of butt entries are driven 16 ft. wide on 40-ft. centers at intervals of 560 ft. On each side of the butt entries are turned 22 rooms. These are 28 ft. wide on 50-ft. centers and are 280 ft. in length They are driven to their extremities on a front of 45 deg. to the butt entries.

Undercutting machines with 7½-ft. cutterbars are standard in these mines. Seventy-three of these machines are in current use. In 25 working days during May of this year these machines in the 12 mines cut 527,000 tons of coal, or an average of 289 tons per machine per day. This is a remarkable average for a large number of machines over a month's period in so many mines, the more so because the Island Creek bed of coal is hard to cut.

### Operates 34 Electric Drills

Mine operation is not truly modern unless shotholes are drilled either pneumatically or electrically. The Island Creek company uses 34 electric coal drills for this purpose. Holes are started with a 24-in. stub auger having a diameter of 2¼ in. A standard 2-in. auger with an effective length of 7 ft. is then inserted in the drill for the completion of the hole. The use of the stub auger enables the driller to start the holes in this hard coal without difficulty and with a saving of time. All drilling is done at night by contract. From 600 to 700 tons of coal per shift is drilled by each drill crew of two men.

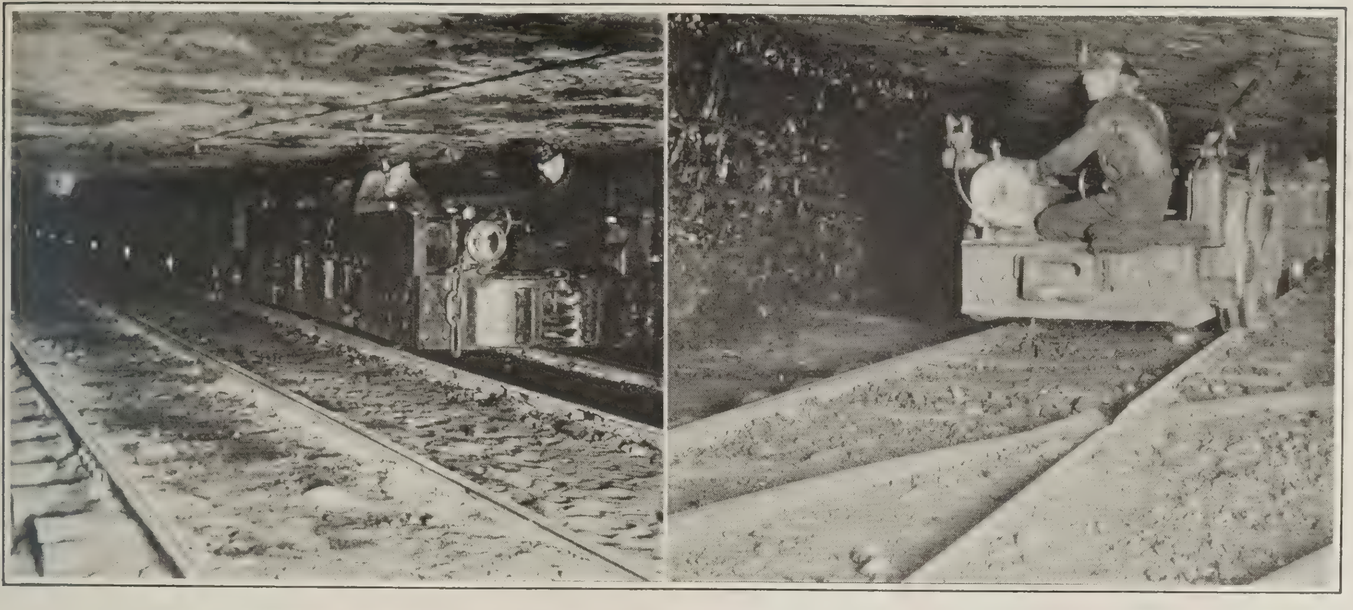
Each room is shot with three holes. The center hole is shot first and the coal which it yields is loaded before the rib shots are fired. This hole is started about 3½ ft. from the bottom and is angled slightly upward. It is charged with 16 in. of black powder in the non-gassy mines and four sticks of permissible in the gaseous operations. The two rib shotholes are started 4½ ft. from the floor, about 6 in. from the rib, and are angled upward and outward toward the roof and rib. These are charged with 8 to 12 in. of black powder or 1½ to 2 sticks of permissible.

The same general specifications cover the drilling and shooting of heading coal except that in narrow places the charges are correspondingly decreased. All stemming is of yellow clay hauled into the mine from the outside. Electric detonators, of course, are used for discharging permissible explosives.

Every advantage and facility is given the miner to

**Face of Island Creek Seam**

This miner is easily a 6-footer and, though he is standing slightly above the mine floor, above him is head room to spare, showing how thick is the seam. The characteristic slate parting is clearly seen about 3 ft from the roof. The miner is charging a center shot hole while cross-cutting a room pillar.



**Main Line and Gathering Haulage Are Both Operated on Schedule in These Mines**

At the left is a view of the main double track leading to the bottom in Mine 21, a shaft operation. A standard trip of 20 cars pulled by a 15-ton locomotive is shown. The last 2,000 cars purchased by the Island Creek company are lower than the ones in this picture. At the right is a 6-ton gathering motor at work on a butt entry. The soundness of the heavy main track and of the side-entry tracks where 25-lb. rails are laid is evident from a study of these illustrations.

enable him to do a good day's work. With sound roof above him it is the exception rather than the rule to set timbers. If the need for them is pressing they are set by company men. Practically the only duties of the loaders are to shoot and load coal. The miner is not required to drill shotholes. He is assured an adequate supply of cars, thanks to the concentration of the workings and the system of distribution and gathering which is scheduled with surprising precision.

Rooms are provided with double tracks so that loading from rib corners into the low cars provided is a comparatively easy task. Face tracks are extended by company men. Generally only one man is assigned to a room which, when newly cut, provides him with ample work for two or three days, depending on his speed of loading. If he is a good loader, conditions and facilities are such as to enable him to load 20 tons or more a day. Only the best loaders are assigned singly to faces of entries. One cut per day must be taken from each advancing entry.

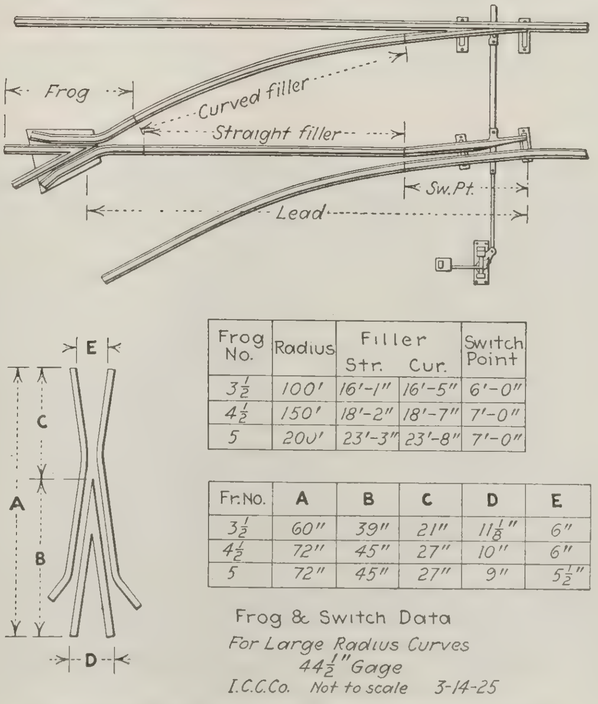
The company assumes full responsibility for safety and regularity in haulage. In the mines of few other companies is haulage arranged with any better eye for safety and efficiency or scheduled with any greater precision.

### HAULAGE OPERATES ON SCHEDULE

Modern rolling stock, straight, and rigidly secured track and easy curves, in a haulage system closely co-ordinated with the more actual mining operations, eliminate from the mines of this company many of the uncertainties of balanced production, which the difficulties in mining engender. Trips are standardized as to number; gathering locomotives are assigned only as much territory as they can traverse in a specified time and, most important of all, haulage equipment is so carefully inspected and so exactingly maintained that breakdowns and derailments are rare. In fact the system is worked out to that nicety which enables a mine official to predict with a fair degree of certainty the time of arrival of a main-line locomotive at any station.

The track gage is 44½ in. Tracks on the main haulways are laid with 60-lb. rails, on the cross entries with 40-lb. rails and on butt entries and in the rooms with 25-lb. rails. In the main and cross haulways the tracks, which in the first instance are laid with 25-lb. rails, are relaid with 60- and 40-lb. rails, respectively, with each advance of 300 ft. Rails of 40- and 60-lb. weight are supported by 7x9- or 5x7-in. wooden ties as conditions require.

In butt entries the 25-lb. rails are held in place by 4x6-in. wooden ties. Normally these ties are placed on 18-in. centers; but where conditions are such as to



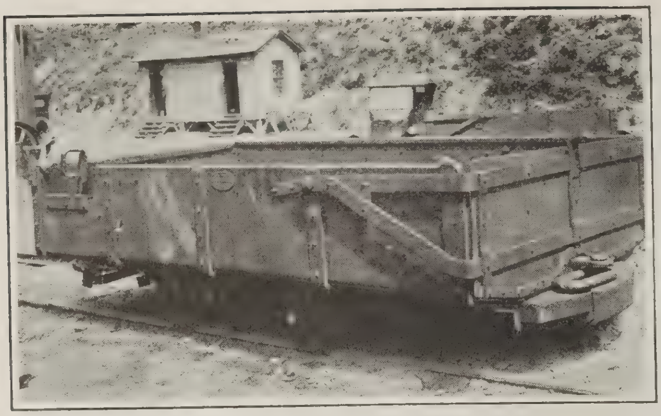
| Frog No. | Radius | Filler | | Switch Point |
|---|---|---|---|---|
| | | Str. | Cur. | |
| 3½ | 100′ | 16′-1″ | 16′-5″ | 6′-0″ |
| 4½ | 150′ | 18′-2″ | 18′-7″ | 7′-0″ |
| 5 | 200′ | 23′-3″ | 23′-8″ | 7′-0″ |

| Fr. No. | A | B | C | D | E |
|---|---|---|---|---|---|
| 3½ | 60″ | 39″ | 21″ | 11⅛″ | 6″ |
| 4½ | 72″ | 45″ | 27″ | 10″ | 6″ |
| 5 | 72″ | 45″ | 27″ | 9″ | 5½″ |

Frog & Switch Data
For Large Radius Curves
44½″ Gage
I.C.C.Co. Not to scale 3-14-25

**Specifications for Frogs, Switches and Curves**

The Island Creek company finds it pays to adopt standards like these for the construction and laying of turnout track equipment.



**A New Low-Type Mine Car**

The top of this car is about 33 in. above the rail. It has a 35-in. wheelbase. Because of this it is well balanced and comparatively free from rocking. Grades in these mines are easy so that steel strap brakes applied to only one pair of wheels supply adequate friction to check the motion of, or stop, the car. Acid-resisting steel is used in its construction.

require more support under the rails the ties are spaced closer. Those ties also which do not quite measure up to specifications as to size are more closely spaced. Room track is anchored by steel ties and room switches are laid on 3x5-in. wooden ties. The latter serve their purpose effectively for just about the time required (four to six months) to drive a room in these mines, after which they are discarded.

On the main haulways the rails are braced from the ribs by ties, which are staggered, on 50-ft. centers and closer where necessary. This practice has been found especially useful during the time required by a new track to settle completely. It also tends to keep in alignment those stretches of track which are flanked by drainage ditches.

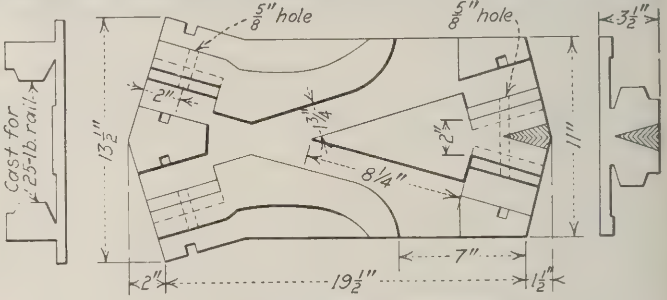
In those sections which are not level and where track is laid with 40- and 60-lb. rails, the average grade is about 1½ per cent. All humps and swags on main-line haulways must be graded to, or below, this limit. The mine floor is of slate which is so hard as to make extensive ditching prohibitive. Fortunately, not much water finds its way into these mines and where it tends to collect, shallow drains provide sufficient grade for the run-off. Wide entries permit plenty of clearance between mine cars and ribs. At no point is this clearance less than 2 ft.

**Drilling Shot Holes Electrically**

The time is not far off when shotholes will be drilled by power in all mines. This company has drilled holes in this way for several years past and has appreciated the many advantages of this practice. This crew can drill about 700 tons of coal a shift.

The radii of curves at switches vary from 50 to 200 ft. In turnouts to flats the curves are made either 150 or 200 ft. in radius. Butt turnouts have a radius of 100 ft. and those to rooms 50 ft. Data relating to frogs and switches in entry turnouts and details of the standard room frog appear in accompanying illustrations. Frogs Nos. 5 and 4½, respectively, rest on four 7x9-in. and four 5x7-in. hewn ties to provide greater support where haulage moves swiftly on turnouts.

It is customary in these mines to elevate 2 to 3 in. the outer rail of curves traversed by the main-line locomotives. Curves in room switches are slightly banked. This practice may seem far-fetched but actually it has been found justifiable because it lessens the thrust which tends to throw switch curves out of alignment and reduces wear and tear on track equipment and mine cars generally. This feature is particularly helpful where mine cars with a comparatively long wheelbase are used.



**Cast Frog for Room Switches**

This type of room frog has been made standard because it has caused the least trouble. Resistance to wear and easy assembly are its chief merits.

Under rails which are curved tie plates are sometimes inserted. Where excessive lateral thrust is likely to be imposed upon a rail, pressed steel rail braces are used.

In the twelve operating mines of this company are approximately 5,000 mine cars, each with a capacity of 2½ tons and all equipped with roller bearings. They are of composite construction, the steel being acid-resisting. Not all of these are of the same general design though all are of the end-gate type. Within the last year the company has installed about 2,000 new mine cars to replace those which were considered antiquated.

The tendency in the design of the new cars is to lower the height and to increase the wheelbase. Thus the latest car installed has a height of about 33 in. and a wheelbase of 36 in. giving a well-balanced car which has little tendency to rock or jump the track—as against a height of about 40 in. and a wheelbase of 31 in. on the older cars.

The height of the new car is lowered 1 in. by the use of 14-in. wheels instead of 18-in. wheels. It is further lowered by incorporating wheel housings in the bottom of the car allowing the wheels to extend through the flare plates of the bottom. Inasmuch as excessive grades are not encountered in these mines brakes are applied only to one pair of wheels The brake shoe is of the flexible steel band type, the first and maintenance costs of which are lower than those of a wood-block brake shoe. On this car the brake lever is on the side, and in the clear.

**Nearest Approach to the Immaculate In a Coal Mine**

Many accidents can be avoided by keeping clean the roadways of mines. The haulage entries in these mines are not always as clean as the one here shown, but an attempt is made to keep them so. Clean-up men are constantly employed for this purpose.

A "motor chute" increases the efficiency of mine car gathering and distributing operations. Of the three headings composing a cross or flat entry from a main entry, that heading on the side from which butt or room headings are turned is driven 22 ft. wide and is referred to as the "chute." Within the limits of the live workings this heading carries a through track and parallel side tracks. These are laid as required between live butt entries and, of course, are maintained only so long as sufficient coal to warrant their existence is hauled from the butt entries at their extremities. After that they are torn up and moved to an advance position in the same motor chute. Each side track is 375 ft. long, allowing a storage capacity for 25 cars.

Although generally it is the practice to drive butt entries and work rooms from only one side of a flat entry, a double flat entry of six headings may be driven to pierce an extensive body of coal. This digression has been followed in the layout of the Main Flat East entry in the new No. 20 mine which in the future will reach a capacity of 4,000 tons a day. The variation is limited only to a large mine area which of itself requires a main flat entry in every way equivalent to a true lateral main entry. In the haulway of this main flat entry, track similar to that of a lateral main entry will be laid to serve as a cross-mine thoroughfare from distant parts of the mine.

As the double flat entry is advanced, butt entries are turned and rooms worked to the right and left of it. Of the six headings in a double flat entry, the two outer headings are driven 22 ft. wide as "motor chutes" and the remaining four which are 16 ft. wide are devoted one to a main haulway and three to man travel and airways.

Trips from the side tracks to the dumping points are handled by 15-ton locomotives; gathering is done by 6-ton locomotives of the cable-reel type. Each of the former will haul an average of 1,000 tons and each of the latter 300 tons of coal in an 8-hr. shift. A standard trip consists of 20 cars, though in the larger mines, as in the new Mines Nos. 20 and 21, it may be increased to 40 cars coming from large mining areas. The maximum speed of main-line locomotives is 12 m.p.h.; that of the gathering locomotive is 8 m.p.h.

### REQUIRE DEFINITE TONNAGE PER SHIFT

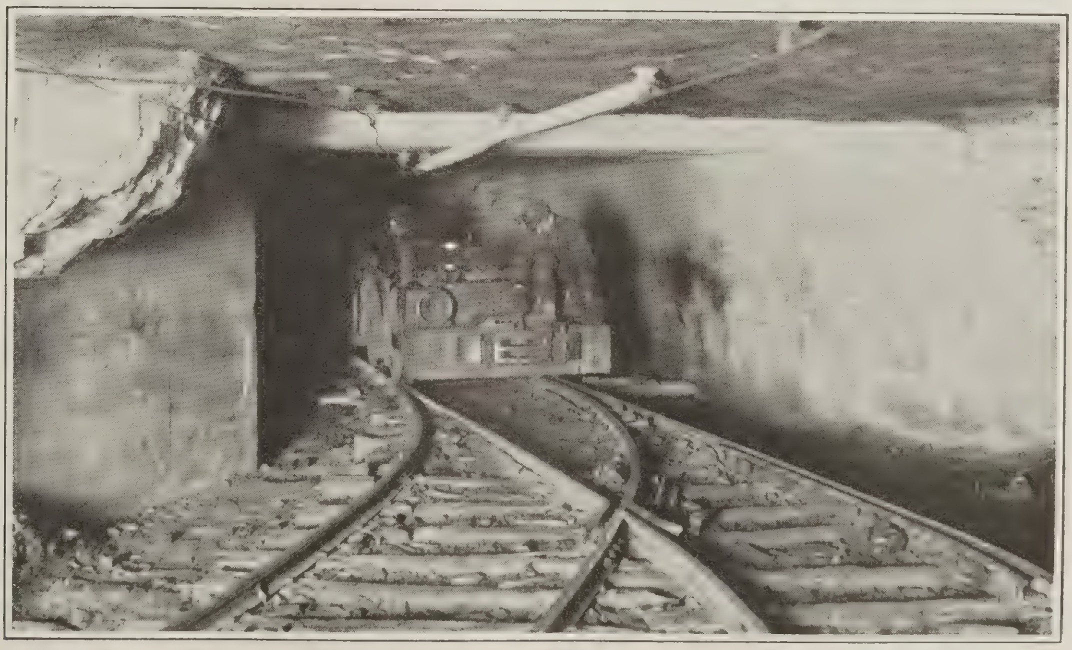
Promiscuous gathering operations are not tolerated. Working places are concentrated to facilitate the work of the gathering locomotives. Each locomotive is assigned definite places which it must serve and the schedule is so arranged as to require of each crew a definite tonnage per shift. For this tonnage a crew is paid a contract rate by the car with compensation for time lost due to delays beyond the control of the crew.

In the make-up of a 20-car trip, gathering locomotives may work singly or in pairs. A cycle in which 20 cars are distributed and 20 gathered by a single locomotive requires an average of 1⅓ hr. However, where hauls are long, gathering locomotives work in pairs, each gathering simultaneously 10 cars for the make-up of a 20-car trip. This arrangement is favored and is practiced wherever it is feasible. A pair of locomotives thus working will make up a 20-car trip every 40 min.

A haulage system is no more efficient than the job it serves. Realizing this, the Island Creek company maintains schedules in mining as well as in haulage.

**Trolley Guard Is Rubber Hose**

Though its first cost is higher than a wooden guard, the company leans toward the hose trolley guard because it is flexible and requires no further attention after it is once installed. The sturdiness of track construction is obvious in this illustration.



A loader is given only as many cars as his records show he can load in a shift. The wide rooms which yield as much as 60 tons per cut and the double track help loaders to maintain high average tonnages.

As far as possible loaders on heading work are provided with reserve cars. Gathering locomotives make frequent visits to these places. Where a heading is not double tracked the reserve car is stored in the nearest room neck or butt-off. In advancing the 22-ft. wide "motor chutes," which are always double tracked, it is customary to work two miners.

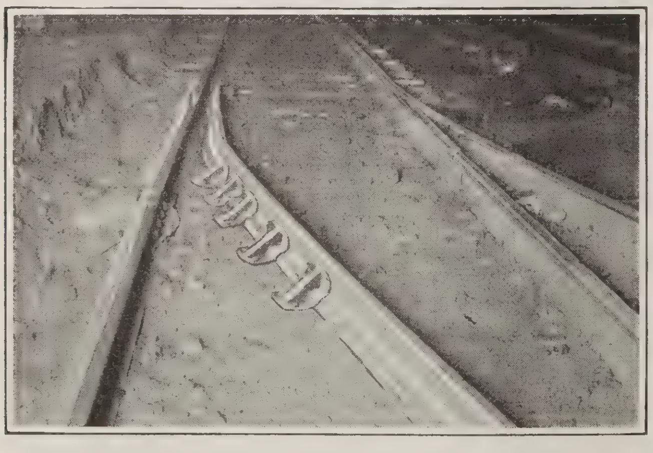
### Discipline Aids Efficient Haulage

Haulage accidents are few and far between in these mines. Before a man is assigned a job as a motorman by the company, regardless of his experience elsewhere, he must have served an apprenticeship as a trip rider so as to learn the company's system. Then he must pass a test on an easy haul before he is allowed to assume the responsibilities of a regular motorman. Absolute discipline is required and a man guilty of malicious misconduct is punished by dismissal, not by compulsory layoff. No arguments between miners and motormen are tolerated. If either has a complaint to make it must be to the boss in charge of the section in which the controversy originates.

An electric lamp signalling system informs each motorman before he reaches the main entry track of the moves scheduled for him by a trip dispatcher. Incidentally, by this means also the dispatcher knows when and where to send a locomotive with its trip of empties. The system eliminates collisions and confusion.

The Island Creek safety club, through the agency of which the miners levy fines upon themselves, has done much to decrease fatal and lost-time accidents generally and those in haulage in particular. Good illumination where it is required along main entries has lessened the hazards of haulage. Electric lamps are installed at all junction points and switch-throw stations. Rock dusting, which is beginning to be a practice of the company, will do much for safety by bettering illumination.

Crossover tracks are never employed; so their dangers do not exist. On permanent haulways, rerailers are placed along each rail abreast of groups of timber sets and in the approaches to automatic doors.



**Steel Braces Stiffen Transfer Rail**

A derailment on this double-track landing in No. 7 slope mine would curtail production temporarily, particularly if both tracks should be tied up by a mishap at the transfer point. To prevent spreading of the transfer rail, braces are used where the thrust is greatest.

**Sound Track in a Wet Place**

The Main West haulway in No. 8 mine passes under a creek. Water from the stream finds its way to this entry; but even so, the presence of water is no excuse for poor track. This stretch of track is probably as good as any to be found in any mine in the country. It is laid with 60-lb. rails.

All trolley wires at junctions are guarded either by boards or by a covering of flexible hose. This hose guard is much preferred though its first cost is higher. It is the equivalent of a 2½-in. diameter fire hose and is made of rubber-reinforced fiber especially for the purpose.

Equally as influential for safety in haulage are factors which have to do with inspection and maintenance of haulways and rolling stock. Responsibility for the condition of track in a mine section is vested in the boss of that section. It is incumbent upon him, therefore, to inspect closely and regularly that part of the track which is allocated to his care. The permanent track is watched by all men of official capacity and in particular by the mine boss who is held directly responsible for its condition.

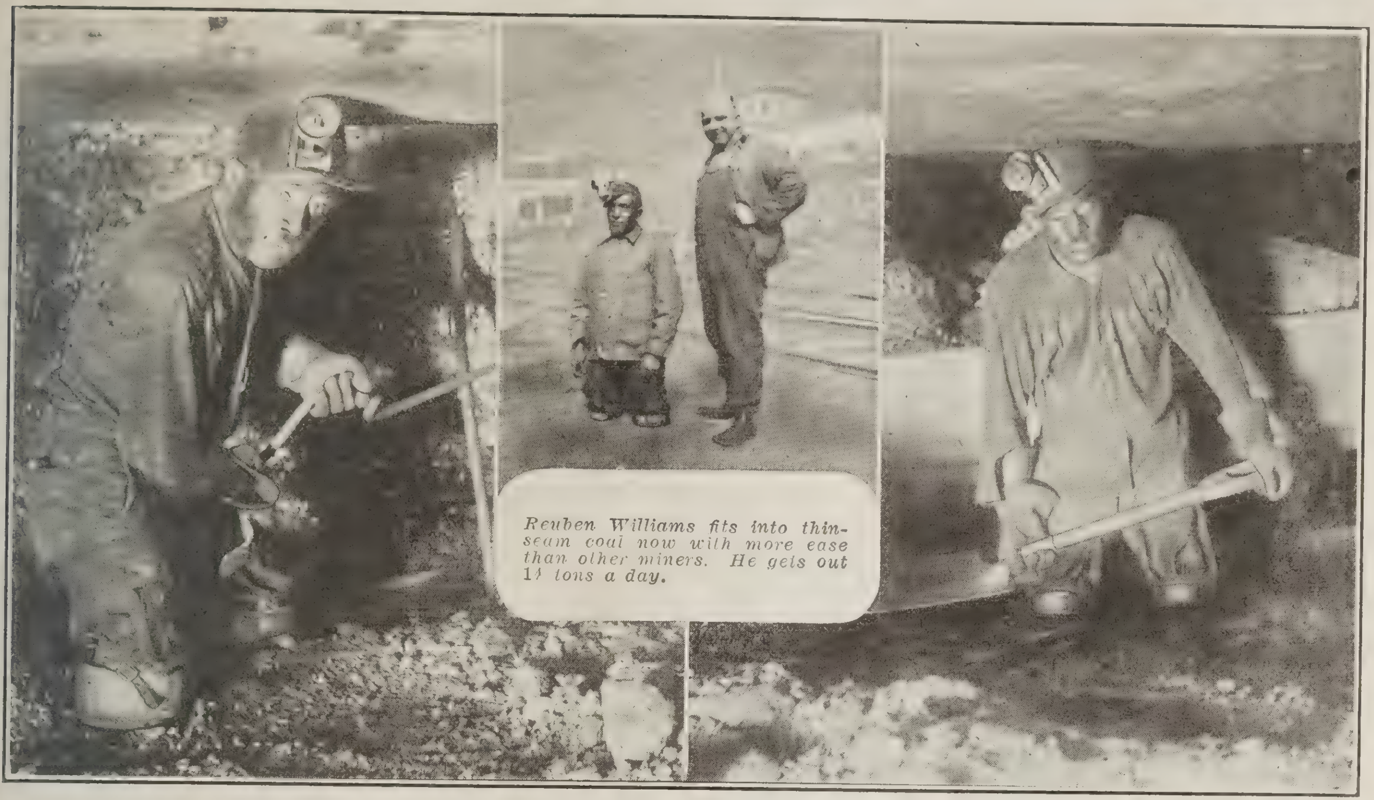
### Track Crews Organized

The maintenance, repair and extension work on 40- and 60-lb. track is executed by crews of as many men (usually three) as are required for a given length of track, headed by a track boss. Butt entry and room tracks are repaired and extended and otherwise maintained by crews of two men. As a general rule one such crew is employed for each gathering locomotive in service. In the precinct of a gathering locomotive where rooms only are being driven, one man is sufficient for the maintenance of the required track.

Perhaps the most important factor in maintaining safety is the effort exercised by the mine bosses to keep the haulways clean. Every day is "house cleaning day," for crews of men are always engaged in shoveling trip spillage from the haulways in one part of a mine or another.

The company is of the belief that the results of inspection are more material than those of repairing and in this it includes the inspection of rolling stock. One man is stationed at the landing at each mine, whose duty it is to inspect all cars before they enter, or after they leave, the dump or cages. Defective cars are marked "shop" and a locomotive side-tracks these for repairs. Trivial adjustments are made by the inspector but cars requiring larger repairs are sent outside to the car shop. The thoroughness of the system in Island Creek mines makes both mining and haulage highly effective.

# Losing His Legs Only Made Him a Better Miner



*Reuben Williams fits into thin-seam coal now with more ease than other miners. He gets out 14 tons a day.*

**By W. J. German**
Huntington, W. Va.

WHEN HE WAS A YOUTH, Reuben Williams worked as a miner in thin coal. The constant stooping soon drove him outdoors as a laborer for a railroad. But fifteen years ago an evil day befell Reuben—or he thought at the time that it was evil. While he was standing in a deep railroad cut a landslide occurred and he was pinned between two boulders. Both his legs were crushed. They had to be amputated just above the knees. Lying in the hospital, Reuben suffered mentally as well as physically. If he ever got out, how would he ever earn a living without legs? Must he beg?

Finally he was discharged from the hospital. He hobbled about on the tender stumps until they became calloused. For awhile he used short crutches. But he hated the crutches. They made a "cripple" of him. He could walk without them but the ends of his poor, short legs hurt him. Finally he had a pair of "shoes" made. These were equipped with springs so that they served him more or less as knee joints. Then he was comfortable and could navigate as sturdily as anybody, albeit slowly.

But he had no job, and his dependents had to be fed. He says he saw two paths to follow: one led to a battered hat and humiliation on a city sidewalk, the other to an endless round of employment offices where nobody would be able to think of a single job he could hold. It was disheartening. But Reuben Williams didn't quit. He thought.

One day he was standing before a mirror viewing his full 42 in. of height. Only 42 in.! What a tragic joke those boulders had played on him! But as he looked, there flashed across his mind a picture of himselm standing under the low roof of a coal mine such as the one out of which he had been driven by back ache. He would be able to stand upright in that mine now. He would just fit! He could work there more comfortably than any man with full-length legs. Why not? Well, he induced them to let him go back to the trade he had quit. He went to mining coal again.

Today Reuben is an expert miner in the Glen Morrison mine of the Morrison Coal Co. in West Virginia. It takes him longer to walk to his working place each morning, but he starts earlier and arrives when the rest do. Not having to stoop so much, he drills, blasts and loads his coal more easily than most men. The short-leggedness which is a handicap on the surface, stands him in good stead underground and his output of coal is as good as anybody's. Over a month's run he is among the leaders of the mine. During two months recently he averaged 14 tons—drilled, blasted and loaded—each working day.

In the illustrations Reuben is seen loading coal at the right with hardly a feel of "crick" in the back. At the left he is drilling a shothole, gaining extra force by bracing his head against the roof. The inset shows him standing beside the author of this article, a man of average height.

When he goes home at night he finds his wife and child—a boy now about six years old—in a neat, comfortable house. They have plenty of food and good clothes and occasionally they take a little trip somewhere. Indeed the Williams family is a good deal envied in a friendly way by some of the other colored folks whose men never have lost so much as a finger. Reuben is a success. Thin seam coal drove him to lose his legs and now it is giving him back an honest, independent living and a lot of personal satisfaction.

# Coal Soon Will Help Supply Nation's Gasoline

**By A. C. Fieldner and R. L. Brown**
Chief Chemist and Organic Chemist, U. S. Bureau of Mines,
Pittsburgh, Experiment Station

### HOW IT CAN BE DONE

SOME DAY—maybe five, maybe twenty-five years hence—coal is going to come to oil's rescue as a producer of gasoline for motor fuel. The question is: What process is to be used? Not byproduct coking, Mr. Fieldner and Mr. Brown conclude, because that would have produced, from the whole 1923 bituminous coal output of the country, a bare 18 per cent of the 7,600 million gallons of gasoline America consumed in 1924. Low temperature distillation, now in its infancy but developing fast, would have made the yield only 20 or 30 per cent. Both these processes may help in the future but the real solution of the motor fuel problem, these authors think, lies in making synthetic gasoline from coal gas and water gas. It is time coal producers delve into this subject, they say.

UNMINED coal of the United States existing within 3,000 ft. of the surface is estimated by M. R. Campbell of the U. S. Geological Survey at 3½ trillion net tons. The exhaustion up to the end of 1918 amounted to only about one-half of 1 per cent of the original total supply. There seems no doubt that most of this great mass of coal, constituting over 60 per cent of the world's reserve, will still be in the ground when all the petroleum available by drilling and pumping methods becomes exhausted in the United States. For the United States, coal is the logical source of liquid fuel substitutes for petroleum gasoline.

It is recognized that shale oil and alcohol from vegetable matter will contribute considerable quantities of fuel, but they can not carry the bulk of the load if we are to continue using anything like the amount of gasoline consumed today.

The processes for obtaining motor fuel from coal may be grouped in three classes:

(1) The carbonization of coal, including the gas manufacturing and coking industry, and low temperature carbonization. (2) the hydrogenation of coal by the Bergius process. (3) The complete gasification of coal and conversion of the resulting gases by pressure synthesis into methanol, "synthol," and other liquid combustibles.

Of these processes only the high temperature carbonization process is in actual commercial use, if we except the distillation of brown coal in Germany which is done at low temperature.

### DEVELOPING LOW TEMPERATURE PROCESS

A number of large-scale, low temperature experimental units still in a developmental stage are operating intermittently in both this country and abroad. The principal object in most of these experiments is the production of a convenient form of smokeless solid fuel. Any considerable increase in the price of liquid fuel would probably make some of these low temperature processes commercially successful.

The partial liquefaction of coal by hydrogen under pressure according to the Bergius method has been under laboratory investigation in a number of European laboratories, and one of us saw a 2-ton-per-day unit operated by Dr. Bergius at Rheinau near Mannheim, Germany. This demonstration took place a year ago.

In the modern byproduct coke oven a ton of coal yields from 3 to 4 gal. of crude light oil of which 60 to 70 per cent, after proper refining, may be utilized as motor fuel. During the year 1923 the total coal coked was 55½ million net tons, of which two-thirds was made in byproduct ovens. The light oil recovered was 135 million gallons, of which 95 millions would have been suitable for motor fuel. This figure is approximately 1¼ per cent of our gasoline requirement of 7,600 million gallons for the year 1924.

If all the coal carbonized in 1923 were put through byproduct ovens, the yield would not exceed 2 per cent of these requirements, and finally if the entire 1923 output of 545½ million tons of bituminous coal was subjected to the byproduct coking process, it would furnish only 1,335 million gallons, or about 18 per cent of the gasoline used in 1924. Obviously the ultimate production of benzol possible can only serve to furnish a limited quantity of blending agent for gasoline-alcohol mixtures. In this connection there is a possibility of virtually doubling the quantity of motor fuel from the carbonization of coal through the conversion of ethylene in coal gas into ethyl alcohol.

Low temperature carbonization, according to many writers, affords a means of replacing our petroleum resources. It is an established fact that the low temperature distillation of coal yields from two to two and a half times as much tar per ton as high temperature carbonization.

Carefully conducted large scale tests by the Fuel Research Station in England gave 1.4 gal. of light oil distilled from the tar and 1.6 gal. scrubbed from the gas—a total of 3 gal. per ton of coal. Fischer and Gluud in Germany obtained 2.0 to 3.8 gal., and Davis and Parry, of the Bureau of Mines, obtained 4.5 gal. of light oil suitable for motor fuel from the low temperature distillation of a Pittsburgh district coal on a laboratory scale.

These yields are of the same order as the benzol yields of high temperature carbonization. However, they can be augmented by the pressure cracking of the low temperature tars as shown by Morrell and Egloff, who report a yield of 17 per cent of the total tar converted into oil distilling below 230 deg. C. Assuming an average yield of 25 gal. of tar, this would mean

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4.25 gal. of motor fuel per ton of coal or a total of 6 gal. including that scrubbed from the gas.

Low temperature coke is not suitable for metallurgical purposes, hence the development of this industry will not reduce the quantity of high temperature coke made. Its logical field is in the processing of our poorly coking and non-coking coals and lignites for the production of smokeless solid fuel. It is reasonable to expect in the relatively near future that 100 million tons of bituminous coal will be carbonized at low temperatures. This amount would yield 600 million gallons of motor fuel, or about 8 per cent of the 1924 gasoline requirement.

Another reasonable expectation is that super power stations will carbonize coal at low temperature, and generate steam from the pulverized residue. The 60 million tons of coal burned in central power plants would thus provide 360 million gallons of motor fuel which added to the yield from plants making domestic fuel would furnish a total of 960 million gallons, or 13 per cent of the annual requirement.

### Must Be a Principal Product

Thus it is evident that the maximum possible development of low temperature carbonization can not serve to furnish more than 20 to 30 per cent of the annual requirements, based on present day consumption. We must turn to processes in which motor fuel is one of the principal products rather than a minor byproduct.

Of these the Bergius process deserves serious consideration since it converts from 25 to 50 per cent of the coal into tar and oils, the yield varying with the type of coal and the conditions of hydrogenation. In this process, pulverized coal mixed with oil or tar to form a thick paste is heated at 400 to 450 deg. C. in an atmosphere of hydrogen under a pressure of 150 to 200 atmospheres of hydrogen. Under these conditions the coal is converted into a black, tarry liquid which, on distillation up to 300 deg. C., yields oils and tar to the extent of 20 to 40 per cent according to various reports.

We may regard the Bergius process as one of the possible future methods for making a petroleum substitute from coal. But it must be emphasized that in this process, a gasoline substitute is only one of the products, the gasoline being in about the same proportion as in a light crude petroleum. From the standpoint of motor fuel production, the direct synthesis from gases seems more economical.

### Investigations Show Possibilities

The investigations of Patart and Audibert in France, and of Fischer and the Badische Anilin and Soda-Fabriken in Germany together with the production of methanol from carbon monoxide and hydrogen on a commercial scale by the latter has put a totally new outlook on the entire subject of our future motor fuel supply. In this process, pure methanol is produced from two volumes of hydrogen to one of carbon monoxide when subjected to pressures of 150 to 250 atmospheres and temperatures of from 300 to 425 deg. C. in a copper lined reaction chamber, containing one or more of a number of catalysts which include zinc oxide or oxides of chromium, vanadium, manganese, tungsten, uranium, lead and bismuth. The cost reported from both French and German sources varies from 18 to 27c. per gallon. About 18 per cent of the heat value of the constituent gases is consumed in the conversion. There are no byproducts. One ton of coke should yield 350 gal. of methyl alcohol.

However, we need not confine ourselves to methanol, the experiments of Franz Fischer, director of the Institute for Coal Research at Mülheim-Ruhr, show that fuel mixtures of higher heating value can also be synthesized from carbon monoxide and hydrogen. Fischer and his associates have produced on a laboratory scale from water gas a mixture which they term "synthol" that consists of a mixture of alcohols, aldehydes and ketones with small quantities of hydrocarbons.

Water gas plus hydrogen is subjected to a pressure of from 75 to 150 atmospheres at 400 to 425 deg. C. in a steel reaction chamber containing a catalyst prepared from iron and a solution of sodium carbonate and consisting presumably of sodium ferrite. Byproducts of this reaction are carbon dioxide, methane and water. By recirculation of the gases, about one-third of the original water gas is converted into liquid products, having a distillation range similar to gasoline, and a heating value of 8,200 cal. per kilogram. This process is yet in its early laboratory stages.

*(Wide World Photo)*

**Dr. F. Bergius**

German scientist whose new process of liquefying coal is attracting wide attention.

Where will these processes fit into our present and future industries? Will the petroleum or the gas and coke industry be in the better economic position to make synthetic fuel?

The large refineries have the organization, financial resources, and the distributing systems to market the fuel. The methanol and synthol processes are peculiarly adapted to this purpose since the entire product can be converted into motor fuel. But the petroleum industry is likely to have strong competition from the manufactured gas industry which has an inherent economic advantage in that it is engaged in the manufacture of water gas, the raw material for methanol and "synthol." The summer months when the need for motor fuel is greatest is the period when gas plants have much idle capacity.

The public utilities distributed in 1924 some 500 billion cubic feet of manufactured gas, of which 74 per cent was carburetted water gas. The estimated annual idle capacity of these water gas plants is 350 billion cubic feet. This amount of gas will produce 1,500 million gallons of methanol or 300 million gallons of the mixture "synthol." Fifteen hundred million gallons of methanol is 13 per cent of the "gas" used in 1924.

The most promising solution of the motor fuel problem of the distant future is in this synthesis from coal gas and water gas, since there are no inherent quantity limitations imposed by the market for other products.

# Why Are Loading Machine Operators Paid $10.07?

### Rate Now Used in Illinois and Indiana Was Fixed At New Orient Mine in 1924—First Loader Scale Was Made at Petersburg, Ind.

IN THE Central Competitive Field, where loading machines are working in several mines, operators of the machines are paid at the rate of $10.07 per 8-hr. day. This rate was agreed upon for New Orient mine of the Chicago, Wilmington & Franklin Coal Co., at West Frankfort, Ill., in a joint conference of operators and miners July 9, 1924, to consider the demand that the miners be paid on a straight tonnage basis. The same rate also applies now at other coal mining properties.

Many operators have asked the question, "Why the seven cents?" To get to the origin of this $10.07 rate takes us back to the earliest contract with the United Mine Workers covering the operation of mechanical loading machines. This contract, signed Jan. 15, 1921, pertained to the experimental mine of the Pike County Coal Corp., at Petersburg, Ind. The body of the contract reads as follows:

> This agreement has been reached between the Simplex Coal & Mining Co., hereafter called the company, and local union No. 5122 U. M. W. of A., to govern a new system of mining undertaken by this company until such times that a scale of wages may be reached between the Indiana Bituminous Coal Operators' Association and the district officers of District No. 11 U. M. W. of A., which will be asked for after the different types of machinery required in this new system of mining have been thoroughly tested out in wide work.
>
> The following conditions of employment will govern all employees of the company under the jurisdiction of the U. M. W. of A.; namely: (1) That all men performing such work as the existing Terre Haute agreement covers will be governed by said agreement. (2) That all men performing such duties not covered by the existing contract will be known as machine operators who will do all work they are called upon to perform by the company. These men will be paid at the rate of $1.50 per hour. (3) That all men being employed by this company will be known either as machine operators or day laborers—it being understood that a day laborer's work and conditions of work are the various types of shift labor covered by the Terre Haute Agreement. (4) That any day laborers called upon to perform machine operators' duties will be paid at the rate of $1.50 per hour while performing such duties. (5) In case of incompetency in the judgment of the company a machine operator may be changed to laborer. Such men, upon being changed, will be paid laborers' wages.
>
> [Signed]..................this 15th day of January, 1921.
> Local Union No. 5122 U. M. W. of A.
> By PHILIP C. SCANLON, President.
> By GEORGE W. BARNES, Secretary.
> By MORRIS YATES, Committee.
> By ED. HARRISON, Committee.
> By GEORGE W. BARNES, Committee.
> SIMPLEX COAL & MINING CO.
> By EARL B. SMITH.

In a recent interview, N. H. McClevey, manager of the Pike County Coal Corp., pointed out that, although the $1.50-per-hour rate ($12 per day) might appear rather high, this is paid to only one man of the five who compose the crews of the Ace loaders which he is using. The other four men are paid the laborers' rate of $7.50 per day. This makes the average rate of the crew $8.40 per man per day.

Some time after mechanical loading was started at the Petersburg mine of the Pike County Coal Corp., the Ingle Coal Co., operating near Oakland City, put Joy loaders into one of its mines. These machines required crews of but two men each. It was only natural that the miners should demand a rate of $12 for the machine operator, as was being paid at Petersburg. This was granted, and the other man paid $8.14 as established by the Terre Haute agreement. These two men began to split their pay, making their earnings $10.07 each. Later the men made an agreement with the company to have the rate split on the payroll.

### RATE ACCEPTED IN ILLINOIS

This rate of $10.07 has spread from the Indiana mines into Illinois and is now the generally established pay for loading machine operators in the coal mines of that state.

The agreement made in conference and now in effect at the New Orient mine follows:

> The undersigned commission created by action of Joint Group Board No. 3 to consider case No. 9,705 from the No. 2 Orient Mine of the C. W. & F. Coal Co., where the miners demand that the mine be put on a straight tonnage basis, met at the mine July 8 and 9 and agree as follows:
>
> The company states that the working of the loading machinery at this mine is still in an experimental stage and for this reason we agree that it will not be possible at this time to place the mine on a straight tonnage basis in its entirety.
>
> In view of the above we agree that the rate of pay for men operating loading machines will be $10.07 per day. These men to be under direct instructions of the managemen and they will work full eight hours at whatever work they are instructed to perform. We would recommend in this connection that where a loading machine is broken down the men operating that machine be given either hand loading or other work for the remainder of the day.
>
> The work being performed by the undercutting machine men is similar in character to that performed by all other cutting machine men throughout the district and we see no reason why these men should not be placed on a tonnage basis, which we agree will be done. The rate of pay per ton for under-cutting machine men to be thirteen cents per tons for all coal cut by them. It being understood that as conditions of employment in this mine differ from the same employment in other mines no specific territory will be assigned to machine men, but all under-cutting machine men will be under the direct instructions of the management.
>
> Further, all under-cutting machine men shall remain in the mine and cut all places that are cleaned up in time to be cut. This is necessary to furnish coal for the loading machines, which under our joint agreement the company is entitled to work full eight hours per day. It is not intended by the above that undercutting machine men will be required to remain in the mine when there is reasonable assurance that they will not have more work to perform that day.
>
> In consideration of the above the company agrees that the cutting machine men shall have the places they cut as near together as it is possible and that all cutting machine men will be treated fairly in this matter, no discrimination will be shown between cutting machine men under this system in assigning them places to cut. With the further understanding that if the men who operate the cutting machines are required to do other work in connection with their ordinary duties as cutting machine men they will have the right to take the matter up in line with section thirteen of the state agreement.
>
> Inasmuch as the company states that it is still experimenting as to methods of mining and nothing definite has been decided upon at this time as to what method of mining will finally be adopted at this mine, we agree that, should the company decide to experiment on any other system of mining it will have that right to pay for same on a day-wage basis, provided the wages paid are equal to the established day-wage rates for similar labor in accordance with the award of the Bituminous Coal Commission.
>
> It is also agreed that should the company desire to place any part or all of this mine on a regular hand loading basis

it will have that right and the miners will be paid for such system the same as at other machine-mining mines where the coal is hand loaded.

When two systems of mining are used—straight machine mining with hand loading and loading machine mining—it is understood that there will be no interference with the amount of coal or the number of pit cars loaded by the loading machine operators, it is further agreed no turn of cars will be kept between the loading machines themselves or against any other system of mining, thereby restricting the number of cars loaded by any loading machine to the same number loaded by the loaders working at any other system of mining. This does not mean that cars will be supplied to any part of the mine that is on hand loading in such few numbers that it will deprive the hand loaders of an opportunity to make a reasonable day's wage in line with Section twenty-eight of the state agreement.

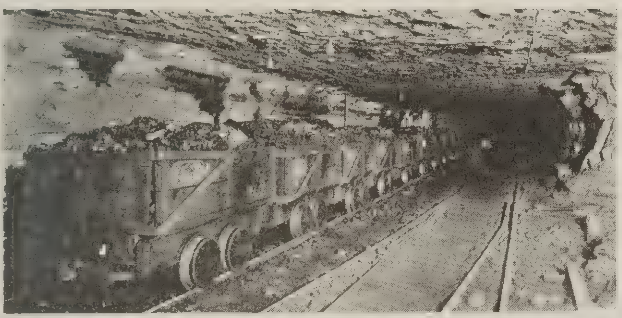
The method of checking coal loaded that has been cut by undercutting machine men under this agreement is left to the machine men involved and to the management to work out some plan that will give the machine men due credit for all coal cut by each of them.

The rate of pay for men snubbing and drilling and shooting will be $8.04 per day.

The above agreement is to become effective July 16, 1924, and extend during the life of our present state agreement. However, in case the company is unable to weigh the coal on and after July 16, the machine men and management will agree upon some system of payment until the coal can be weighed.

| [Signed]: | Rice Miller, | Harry Fishwick, |
|---|---|---|
| | M. S. Coleman, | Harry Madden, |
| | Geo. McArtor, | Hugh Willis, |
| | For the Operators. | For the Miners. |

# Women Officials Run Old Kentucky Operation



*The underground illustration on the left is a view of the Eureka mine of the Reinecke Coal Co., near Madisonville, Ky. The coal at this mine (No. 11 seam) averages 6 ft. in thickness.*

*Top-works of the Reinecke company's Eureka mine. This operation produces 1,300 to 1,600 tons daily.*

*This is one of the oldest operations in the western Kentucky field, the Reinecke company being organized in 1886. Women are prominent in the company's organization. Mrs. Caroline Penn, of Belleville, Ill., is president and Mrs. Grace Reinecke, of Madisonville, Ky., is secretary and treasurer.*

# When Explosion Occurs Men Should Know What to Do

## Davis Coal & Coke Co. Has Schedule of Procedure Which Is Intended to Reduce Confusion Around a Mine During Any Emergency

WHEN A MINE fire starts or an explosion occurs just what is every man connected with the mining company expected to do? In some cases nobody knows definitely. The Davis Coal & Coke Co., operating in Pennsylvania, West Virginia and Maryland, believes a definite program of action should be followed after every such occurrence and has worked out such a program and is instructing its men in it. This line of procedure is expected to cover every emergency so that there will be little danger of confusion and misfunctioning when trouble starts. Here is the Davis schedule in cases of mine fires or explosions:

**Vice-President and General Manager:**

Should be immediately notified by the general superintendent or superintendent if general superintendent cannot be located, in case of mine fire or explosion, no matter how slight or serious, and he should be kept in touch with same at all times.

**General Superintendent:**

1. Should be immediately notified by superintendent or foreman in case of mine fire or explosion, no matter how slight or serious, and he should take charge in accordance to specified duties at the scene of trouble.
2. Notify district mine inspector and chief of department of mines.
3. Notify U. S. Bureau of Mines, if thought necessary.
4. Clerk to remain in your office constantly and one other person for errand duty.
5. Arrange for an operator constantly at the telephone exchange.
6. Arrange for general supply clerk to be near the telephone at all times and an assistant for errand duty.
7. No oxygen breathing apparatus or oxygen equipment be sent from a division at any time unless authorized by general superintendent or safety director.
8. No official or apparatus men be sent from any plant unless authorized to do so by general superintendent or person designated by him.
9. Call any officials necessary for the work at hand.

**Duties**

If possible, two men should be assigned to each position. One from the mine where accident happened and one from the nearest adjoining mine. They should be assigned under duties respective to their regular occupations, and designated by the general superintendent; i.e. outside foreman from another mine with outside foreman, checkman with checkman, etc.

**Superintendent:**

**Guards, Mine Clerk, Outside Foreman, Supply Clerk:**

1. Rope off all mine entrances. Guards stationed along rope and under directions of designated official.
2. Provide general headquarters at the plant and keep a man at the telephone constantly. The mine clerk should be assigned this work and have two men with him for errand duty.
3. The outside foreman to provide for information bureau, mess rooms, emergency hospital, commissary, provisions, rest rooms, sleeping quarters, morgue, etc.
4. The supply clerk to provide for nails, brattice cloth, hatchets, axes, picks, boards, props, shovels, identification checks, electric cap lamps, flame safety lamps, telephones, wire and insulators, rope, blankets, stretchers, first aid cabinet, etc. Also provide for checkmen and lampmen to distribute; overalls, gum shoes, gum boots, gloves, caps, electric safety lamps, flash lights, etc.

**Electrician:**

1. Pull all electric switches where electricity enters the mine and lock same in case of explosion.
2. See that fan is started and kept in operation. Have an attendant stationed at fan constantly.
3. Provide for telephone communications on outside with telephone man, and on inside of the mine if necessary.

**Machinist:**

See that fan is in operating condition. Have an attendant stationed at fan constantly.

**Fire Chief:**

1. Should assemble immediately all available fire fighting equipment, which should be on hand at the mines when needed as the recovery work progresses.
2. Report to superintendent. Consult him for additional apparatus.

**Other Superintendents:**

1. Keep by telephone of your respective plants until advised to leave by the general superintendent, and upon leaving assign a responsible man, possibly the clerk, to your place and have another responsible official with him to perform any errand duty.
2. If called to scene, report immediately to general superintendent for your duties.
3. If advised to bring or send apparatus men, or other crews of five men other than apparatus men, have them report to director safety and inspection immediately.
4. If requested to send or bring other officials; have them report immediately to general superintendent.

**Check and Lamp Men:** (stationed in lamp house with adjoining room)

1. Each man reporting to be equipped for entrance into the mine should be known to the check and lamp men as approved by the superintendent.
2. Each man should be given a check with number and this number, as well as his name, should be recorded in a book.
3. A record should be kept of all equipment issued to each man opposite his name and number in preparation to his entrance into the mine. For example; overalls, gum boots or shoes, caps, safey lamps, flashlights, etc.
4. Each man to carry a safety lamp should be qualified by a responsible official or he cannot so enter, and all safety lamps should be examined by the lamp man.
5. Upon the return of each man so equipped as above, the said equipment should be credited to the name and number that received it.
6. Each man should be examined carefully without exception for smoking articles or combustible material. This examination to consist of going through each pocket or any other place of concealment.
7. Each safety lamp should be of permissible approved lock type. Each man should be equipped with flashlight.

**Final Check Men:** (stationed within the roped-off area at each entrance)

1. At least one check man at each entrance and stationed within the roped-off area.
2. Working crews should only be permitted to enter the mine in groups of five, one of whom should be in charge. The one in charge should be an official, or a person approved by the district mine inspector, but at least one official, who knows the mine or section where party is going, should be in the party.
3. All men entering the mine must be known to the checkmen or be approved by the superintendent.
4. Each man having a check with a number, and said number as well as name recorded in a book.
5. The time of entering and leaving the mine should be recorded in a book opposite his name and number.
6. Each man should be examined carefully without exception for smoking articles or combustible material. This examination consists of going through each pocket or any other place of concealment.

**Attendants:**

Direct all persons equipped for entrance into the mine from the check and lamp men to final check men, and when said persons leave the mine, see to it that they report back to where they originally started.

**State Mine Inspector:**

A mine fire or recovery work after a mine explosion is always in charge of the chief of the Department of Mines followed by the district mine inspector and assisted by other district mine inspectors upon their arrival at the mine.

**Director, Safety and Inspection:** (assist the state mine inspectors)

1. Assemble all the available apparatus for rescue and recovery work in that division.
2. Call all apparatus men as thought necessary promptly.
3. If apparatus men be needed from other plants, call general superintendent immediately, who shall call the respective superintendents at plants designated.
4. If apparatus and men be needed from other divisions, call general superintendent.
5. Assist in picking well balanced crews of five men each for apparatus or other designated work, and do whatever possible until the arrival of state mine inspector, when they will report to him. Assist in making final check on men and equipment and assist the attendants and final checkmen in their duties.
6. If additional apparatus or men are needed other than company equipment and employees, call the general superintendent.
7. Call for ambulance.
8. Call physicians necessary and appoint one in charge.
9. Keep in touch with emergency hospital.
10. Make hospital arrangements with physician in charge at the plant.
11. Call Red Cross county chairman and arrange the duties.

**Official in Charge of Guards:**

Report to superintendent and consult with him in regard to additional duties.

**Chief Engineer:**

1. Arrange for a man in your office constantly. Report to general superintendent.
2. Immediately go to scene with maps showing regular coursing of air, regulators, overcasts and doors in same, stoppings and doors. Also have maps of adjoining mines.

**Chemist:**

Arrange laboratory and report to general superintendent to co-operate with Bureau of Mines officials in handling samples, etc.

**Foreman Central Shops:**

1. Immediately dispatch a man or go yourself to plant and assist machinist and electrician on fan.
2. Arrange for men constantly on duty in the shop.
3. Report to general superintendent.

In case of mine fire or explosion the above procedure must be carried out in detail by those designated for specific duties.

R. P. MALONEY,
Vice-President and General Manager.

# New Coal Cleaning Plant Has A Pneumatic Process

### Gulf Smokeless Coal Co. at Covel, W. Va., Sizes Output Carefully Before Putting Four Small Classifications on Air Tables

By Ray W. Arms
Contracting Engineer, Roberts & Schaefer Co.,
Chicago, Ill.

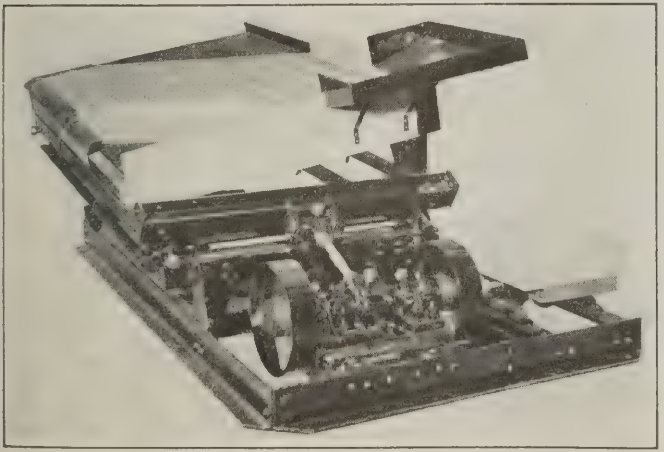
A new coal cleaning plant employing the pneumatic process has just been completed for the Gulf Smokeless Coal Co. at Covel, W. Va. This plant is located on the Virginian R.R. midway between Princeton and Mullens on a steep mountain grade now being electrified by the railroad. Several novel features are embodied in the design of this cleaning plant, chief among them being the use of a new type of horizontal screen for the preparation of sizes for the cleaning tables, and a new type of air concentrator.

Since the advent of pneumatic cleaning, opinions of its exploiters as to the necessity for closely sizing the coal before cleaning have been divided, some maintaining that more efficient machines can be built to clean coal with less sizing and others believing that close sizing is essential for good results. The latter view is fostered by the designers of this plant who also have firmly held as a basic principle that air itself is, after all, the separating agent and no mechanical nicety of construction could possibly increase the effectiveness of air as a separating medium beyond its natural limitations. Furthermore, it is recognized as a principle that devices involving simultaneous classification and concentration require more air-power and cannot be as accurate as those preparing the coal by sizing screens.

## SCREENING OPERATION SIMPLIFIED

Following out this principle, efforts have been made to simplify the screening operation as much as possible commensurate with sufficient accuracy to arrive at the best cleaning results. The outcome of three years of research and experimentation with that end in view is the Arms horizontal screen, a high-speed shaking screen with a motion capable of propelling the coal along a level or nearly level surface.

This screen as installed at Covel has an upper deck covered with a large-mesh screen cloth over which an oversize finished product is removed, and a lower deck through which a finished undersize is partially removed. The intermediate product is unfinished and is passed on to a second screen, the top deck of which is equipped with wire mesh sufficiently smaller than the first screen to make the next cleaning size. The lower deck of the second screen is provided with the same mesh cloth as the first screen. The coal then passes to the third and last screen with a still smaller top screen and the same size lower screen. From these three screens five finished products are removed: one oversize each from the three top screens, oversize from the third bottom screen and undersize from all three lower screens. Patents are now pending on this screen and screening system.



Arms Air Concentrator for Cleaning Small Sizes of Coal at Covel, W. Va.

Tipple and Air Cleaning Plant of Gulf Smokeless Coal Co. at Covel, W. Va.

The coal at Covel is rather characteristic of the district, the impurities being slate and a high-ash cubical coal. Previous experiments had determined the fact that the coal smaller than ¼ in. was quite free from these impurities and needed no treatment on the air concentrators, hence it was decided to bypass all coal smaller than that size and air clean all coal between 2 in. and ¼ in.

## METHOD OF SIZING COAL

Coal is brought down the hill by a retarding conveyor and fed to a horizontal picking table screen which first removes the 4-in. lump coal for hand picking on the top deck of the screen. The 4-in. undersize is further screened through 2-in. perforations on the lower deck which delivers the 2x4-in. egg coal to picking wings along the side of the screen where it is carefully hand picked.

The 2-in. undersize from the screen is delivered by a chute to the boot of an elevator which lifts it to the top of the dry cleaning plant. From this elevator it is fed by a chute directly to the three Arms sizing screens which divide the coal into five sizes: four for cleaning over the air concentrators and the fifth to be bypassed without further treatment. The four sizes to be cleaned are passed to small pockets directly over the four cleaning tables to which they are delivered by special chute feeders.

The cleaning is done on Arms air concentrators. This concentrator is a newcomer in the field of air cleaning, simple and rugged in construction and designed to fit into a compact and accessible arrangement scheme.

From the concentrators the coal is delivered to a gathering conveyor which receives also the undersize from the screens above. This conveyor then delivers the coal via a chute to a run-of-mine loading boom or to a slack loading chute, as desired.

A separate compartment in the gathering conveyor collects middlings products from the air concentrators and returns them to the boot of the slack elevator by which they are returned to the plant for retreatment. Refuse from the four cleaning tables is fed by chutes to a belt conveyor which delivers into a second stacking belt conveyor. Arrangements are now being made to load the cleaned nut coal, as made on the first two cleaning tables, directly to railroad cars.

Considerable progress has been made in the collection of dust in air cleaning plants as evidenced by the results at Covel. This plant is remarkably free from dust both on the cleaning table floor and at the screens. The reasons for this improvement are, first, that a more efficient application of suction to the critical points has been made; second, the screens remove the fine dust-bearing undersize more perfectly; third, a new type of table dust hood controls more effectively than heretofore the air currents issuing from the cleaning tables.

The Covel plant handles nut and slack coal smaller than 2 in. at the rate of 150 tons per hour. Chemical results of the cleaning are not yet available but inspection of the products indicates that the impurities are effectively removed from the coal with an inconsequential loss of coal in the refuse.

# *Newly Equipped Power Plant of Fordson Coal Co. In Kentucky Pulverizes and Burns Low-Grade Coal*

*This central power plant for the Stone division of the Fordson Coal Co. at Stone, Ky., has been equipped for burning pulverized laminated slate and coal. The old stoker-fired boilers at the plant have been replaced by three new ones, each of 600-hp. rating. The first was put into service Aug. 1. Natural draft is provided by the new brick stack.*

*The lower photograph shows the new steel-and-concrete powdered fuel mill standing beside the tipple at Stone. The pulverized product is borne to the power plant through 680 ft. of 4-in. pipe which is installed underground. The conveying capacity is 15 to 20 tons per hour.*

*This is one of the first coal mine power plants to use the low-grade fuel which usually must be dumped for lack of market. The pulverization process is to prevent this ordinary waste. This method of turning bone into power is already in successful use at the central power plant of the United States Coal & Coke Co., Gary, W. Va.*

# News Of the Industry

## Pinch Near in Anthracite Strike Indicated by Recent Developments; Amenities by Lewis and Warriner

A number of developments which took place last week in connection with the hard-coal strike marked a decided change from the inactivity prevalent for several weeks. In making a bid for indorsement of the strike at the annual convention of the American Federation of Labor at Atlantic City, Oct. 14, John L. Lewis, president of the miners' union, charged the anthracite operators with mulcting the public of sixteen to twenty million dollars annually by the adoption of the new sizing standards, which he alleged had been forced upon retailers. He also pictured a harsh winter for the public due to a shortage of coal.

Arrangements have been made to suspend ordinances prohibiting the use of soft coal in New York City as well as in upstate cities of New York and New Jersey, in order to meet any possible emergency due to a dearth of anthracite.

Samuel D. Warriner, president of the Lehigh Coal & Navigation Co. and chairman of the Anthracite Operators' Conference, denied Lewis' charges in a statement made at Harrisburg, Pa., Oct. 15. Speaking before the Pennsylvania State Chamber of Commerce, Mr. Warriner said that the industry decided last April to standardize the sizes of coal at the request of the retail trade.

The American Federation of Labor, at its annual convention in Atlantic City, Oct. 14, indorsed the anthracite strike, unanimously passing a resolution approving "the efforts of the mine workers in their demands for increased wages, improved working conditions and complete recognition of the union." The Executive Council of the A. F. of L. also was directed "to co-operate in every possible and practical way to the end that the anthracite mine workers achieve complete success in their efforts."

### Public Has Been Fooled—Lewis

"During the past sixty days," said Lewis, "the people have been told, first, that they need not fear a suspension, and then that there was ample coal on hand. Foolish public men have created for the American people a fool's paradise, and they are due for a fool's awakening. If the mines were to start tomorrow it is extremely unlikely, from present prospects, that production and distribution would catch up with fuel requirements before the coming of next spring."

In the meantime, he said, wholesalers and retailers would be "making hay while the sun shines." He said chestnut coal was already selling at $18 a ton in Philadelphia and as high as $19.50 on Long Island, which he declared, represented advances of $4 to $5 a ton over the price listed at the beginning of the present suspension, Sept. 1.

"It will be sold at an additional increase far in excess of these figures," he said.

As to substitute fuels, Mr. Lewis quoted engineers as saying the by-product coke industry was able to produce only enough of that commodity to care for its own needs, and could not increase facilities to meet additional demands from hard coal users. Scrapping of anthracite-burning equipment for installation of oil burners he called prohibitive to the wage earners in most sections of the anthracite market.

### Attacks Use of Soft Coal

Soft coal, as another substitute, was dangerous, he said, because in homes where chimneys were built for hard coal, burning of bituminous coal "will mean the wholesale asphyxiation of families." Furthermore, he said, railway facilities would be unable to transport enough soft coal into the 60,000 communities commonly using anthracite to meet the needs, "even if they could burn it."

Reviewing the controversy between the miners and operators up to the breaking off of negotiations at Atlantic City on Aug. 4, Mr. Lewis announced that "there is not now, nor will there be later, any question of the mine workers faltering in the step they have undertaken or departing from the policy which they have laid down. They have every appreciation of the responsibilities of such a contest, but they believe that thrice armed, indeed, is he whose cause is just, and they have decided to carry on, come what may."

Mr. Lewis said 70 per cent of the 158,000 anthracite mine workers averaged between $4.62 and $5.96 per day and the remaining 30 per cent of skilled contract miners averaged substantially less than $2,000 a year.

Yet, he said, in 1924 30,241 men were injured and since 1870 "the anthracite industry has butchered 1,210,000 of our people."

### *Won't Settle Anything by Strike, Says Debs*

Eugene V. Debs, chairman of the National Socialist Party, addressing an audience of about 1,000 persons in Scranton, Pa., Oct. 16, condemned the suspension of mining in the hard-coal region. "My sympathies are with the miners," he said. "They are engaged in a sharp, fierce, trying struggle. They will be tested to the core, yet I realize that no matter how the strike turns out it will not settle anything. There will be a temporary agreement and after that agreement has expired there will be another strike and another strike. We have had strikes for fifty long years," he continued, "and we will continue to have them as long as the mines are privately owned." Following an argument for government ownership of the mines and other industries, Mr. Debs added, "I do not like strikes. I am not fond of riots and disturbances and bloodshed. All of my life I have opposed violence and brute force."

Debs' attitude on the suspension came somewhat as a surprise to the mine workers who heard and read his address. It was thought that he would urge a continuance of the "strike" policy of the United Mine Workers and give it his indorsement.

In reply to Lewis' charges S. D. Warriner said that "when a man who has arrogantly declined to face the facts in the anthracite situation by submitting them to arbitration takes it upon himself to vilify the industry in words which are so far removed from the truth as to approach libel and actual falsehoods a reply is definitely required."

Last April, when the industry standardized its sizes of coal, he said, "some sizes were made slightly larger, some were made smaller. This was done at the urgent request of the retail trade, who desired more completely to conform to the requirements of their customers. The step was only taken after the operators had made careful experiment as to the feasibility of the changes suggested, had subjected the new sizes to most careful analytical and engineering tests, and had been assured that the public would be protected in any action that might be taken.

"So far as the results obtained in

realization or profits to the industry as a whole are concerned, there was no benefit. As evidence of this, the realization from the production of the Lehigh Coal & Navigation Co. for the month of August of this year, after the change was made, was $5.68 per ton, as compared with $6.14 per ton average realization from the production of our company for August of last year, before the change was made.

"The charge that the industry has been a slaughterhouse, where since 1870, 1,200,000 employees have been 'butchered,' is equally false. He implies, at least, if he doesn't say, that an average of 2,000 men annually have been killed in the anthracite industry. The statistics of the Mine Inspection Bureau of the Commonwealth of Pennsylvania show that since 1870 the fatal accidents total 23,745, or an annual average of 431.7. The total number of fatalities in the fifty-five years from 1870 to 1924, inclusive, was a little more than the average number per year which Mr. Lewis states as the number 'butchered.'

"Relative to Mr. Lewis' remarks that the public is lulled into a fool's paradise and due for a fool's awakening, not much more need be said than that it is a palpable effort of a man to manufacture a panic for his own selfish purposes."

Major General Charles W. Berry, chairman of the New York State Coal Commission, recently created by Governor Smith, said last week that $16 a ton was a fair price for hard coal in the boroughs of Manhattan and the Bronx, and urged the public not to pay more except in the outlying districts.

After a conference with an advisory committee composed of Eliot Farley, representing the anthracite operators, Roderick Stephens, for the retail coal dealers, and J. W. Searles and Charles B. Ebbert, representing the bituminous coal producers, General Berry issued a statement, in which he said that "there is an ample supply of soft coal available for the New York market and retail coal dealers are advised to avail themselves of such opportunity."

A threat to publish the names of coal profiteers is expected by the commission to keep prices down.

## Rioters Injure Ten and Wreck Washery

The first disturbance of a serious nature in the hard-coal field since the suspension of mining operations on Sept. 1 occurred Oct. 17 at Throop, near Scranton, when about 700 mine workers, using bricks, stones and blocks of wood, stormed Carlucci's washery at that place and practically wrecked the structure, causing several thousands of dollars damage. Ten men were injured in the rioting.

The demonstration resulted from the refusal of the owner of the operation, Frank Carlucci, of Scranton, to suspend work at the plant. The owner of the washery, along with those of other small operations, was requested by District President Rinaldo Cappellini, of the United Mine Workers, to cease operations during the strike.

Following the attack the district union chief issued the following statement from union headquaraters in Scranton: "I regret the action of the men who yesterday gathered at the Carlucci washery in Throop. The men were not authorized to take such action, as it is the wish and hope of the union to carry out the suspension in an honorable and peaceful manner."

**William Green**

The former international secretary-treasurer of the United Mine Workers was reelected president of the American Federation of Labor by acclamation at the annual convention of that organization, held in Atlantic City, Oct. 12-16. His entire executive council also was returned to office. Among those elected as delegates to the British Trades Union Congress was Frank Farrington, president of the Illinois miners' union.

The U. S. Engineers for the Pittsburgh district, in their report for September, just issued, show the coal movement on the Monongahela River was 1,655,340 tons, and coke, 79,818 tons; on the Ohio River, coal 374,586 tons and coke 39,000 tons; on the Allegheny River, coal, 88,350 tons and coke 18,000 tons.

## New Low-Volatile Rate to New England in Operation

The Norfolk & Western Ry. placed in operation on Oct. 15 a new schedule of all-rail rates on prepared sizes of bituminous coal from low-volatile districts in West Virginia to New England and other Eastern points. The Interstate Commerce Commission issued an order directing the new rates, and these rates are expected to make it possible for the West Virginia producers to enter the New England market in competition with anthracite for the first time.

The new rates to New England points are as follows, per gross ton:

Massachusetts—Lowell, $7.10; Waltham, $7.10; Worcester, $5.83; Cambridge, $6.70; Fall River, $5.83; New Bedford, $5.83; Springfield, $5.45; Boston, $6.70 (Boston & Maine), $5.58 (New Haven); Haverhill, $7.10; Lynn, $7.10; Salem, $7.10; Chelsea, $6.70, and Amesbury, $7.20.

New Hampshire—Manchester, $7.20; Concord, $7.35; Bennington, $7.20, and Portsmouth, $7.20.

Connecticut—Norwalk, $4.69; New Haven, $4.69; Bridgeport, $4.69, and Hartford, $5.45.

Rhode Island—Providence, $5.45.

Maine—Portland, $7.20.

The low-volatile soft-coal producers believe that they have a permanent substitute for anthracite, which each year will cut heavily into anthracite sales in New England, as it has already in other parts of the country.

Modification of the present bituminous rate structure so as to "more equitably" protect the people and the bituminous coal industry of Pennsylvania is asked in a resolution adopted at Harrisburg, Pa., Oct. 15, at the seventh annual meeting of the Pennsylvania State Chamber of Commerce.

## *W. H. Turner, Mine Foreman, Believed to Be Dead, Is Arrested for Murder in Kentucky Explosion*

William H. Turner, formerly foreman of a coal mine at McCarr, Ky., was arrested as a fugitive from justice Oct. 15 when he arrived at New York on the United American liner Resolute, from Hamburg. He was taken to Police Headquarters and held for Sheriff William Johnson of Pike County, Ky., who sought him with a first degree murder warrant. Sheriff Johnson came to New York in response to a wireless message from Turner saying that he wished to give himself up, according to the police.

The Sheriff and other authorities of Pike County had been looking for Turner since he was indicted as the result of an explosion on Jan. 17, 1925, in the Auburn Mine at McCarr, in which two miners were killed. One mangled body had been identified as that of Turner, according to the police, and $85,000 in insurance on Turner's life was collected by relatives.

Turner is reported to have said that after the explosion in the mine he was met by a relative by marriage who plied him with whiskey, placed a pistol at his side and told him to take the first train that night out of McCarr. Another relative is alleged to have bought passage to Norway for himself and for Turner. Turner maintained he did not know what had become of the insurance and that his wife, who was a $25,000 beneficiary, was in no way concerned with the scheme by which one of the victims of the explosion was identified as Turner.

Turner was taken back to Kentucky Oct. 16 by two deputy sheriffs on extradition papers charging him with murder in connection with the death of two men in the explosion of last January. Before the officials started with him for Kentucky, however, his wife, Margaret May Turner, who the prisoner had declared was in no way connected with the conspiracy, identified her husband in New York police headquarters.

The Pike County Circuit Court Clerk's office announced Oct. 19 that indictments had been returned by the Grand Jury against Joe Jack, Jr., Turner's brother-in-law; Joe Jack, Sr., Mrs. William H. Turner and Mrs. F. F. Farley, a sister of Turner.

# Uncertainty Regarding Attitude of Hard-Coal Interests Deters Stocking Of Substitutes by Retail Dealers

**By Paul Wooton**

Washington Correspondent of *Coal Age*

To make good the deficit in anthracite it will be necessary to provide substitutes from this time forward at the rate of 1,500,000 tons per week. As no such tonnage is going into distribution in the anthracite-consuming region at this time it is apparent that cumulative requirements soon will have to be met at a much higher rate. Such a gigantic task, it is apparent, can be accomplished only with the whole-hearted co-operation of the retailers.

One of the reasons why the Eastern retailer has hesitated to stock up heavily with substitutes for domestic anthracite is the uncertainty as to how his activities in introducing substitutes will be regarded by the anthracite interests. He realizes that all the propaganda urging the use of substitutes has not weakened the preference of the majority of householders for anthracite. The minute anthracite begins to move again the retailer will want his full share. He regards his allotments, if he has "company" connections, as his principal business asset. Moreover, he does not want to be caught with a surplus of bituminous coal which he would have to sell at a loss.

Officials in New England declare that the feeling of uncertainty among the retailers is an important factor in discouraging the purchase of other fuels. To overcome that uncertainty it is being suggested that the states concerned call meetings of the retailers for a conference with the anthracite distributors, with the idea of working out a definite program of distribution to apply as soon as the strike is over. A definite assurance doubtless could be obtained that as soon as work is resumed distribution will be made in accordance with the 1922 allotments.

Some such plan as this, it is believed, would remove the uncertainty and enable the retailers to make definite plans and to place orders at once for bituminous coal. The orders for current shipments could be made subject to cancellation a certain number of days after the resumption of anthracite production. By this means the elaborate machinery of distribution throughout the anthracite-using region would be thrown open to move substitutes.

If the anthracite interests helped bring about such an understanding it would help them to realize their often-repeated wish that the government allow the industry to settle its own troubles. State and federal executives can stay out only so long as substitutes are available.

As this is written six weeks of the strike has passed. Federal officials appear to be as grimly disposed as ever to keep hands off. The anthracite operators show no signs of weakening. The belief is growing stronger that Congress is likely to prescribe some form of regulation for coal. The record shows clearly that drastic legislation goes through promptly in times of emergency—legislation that would have no chance under normal conditions.

Despite the formal action of the American Federation of Labor in approving the strike, it is said that some labor leaders feel that it was a great mistake to take that action. President Green is thought to share that opinion.

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## Samuel A. Taylor May Head A.I.M.E. Next Year

Samuel A. Taylor, well known Pittsburgh consulting coal mining engineer and operator, may be president of the American Institute of Mining and Metallurgical Engineers for 1926. Official notice of his nomination for the office was revealed at a dinner given in the University Club, Pittsburgh, on Oct. 19 by the Pittsburgh section of the Institute in honor of President Reynders and Secretary Bain. President Reynders made the announcement.

The dinner was attended by twenty-five members and an equal number of ladies of the auxiliary. Graham Bright, chairman, presided as toastmaster. Secretary Bain emphasized that the chief aim of the Institute is the more liberal exchange of technical information, pointing out the part such an exchange plays in the welfare of present and future generations. Many engineers, said he, do not realize the importance of revealing and recording technical and practical knowledge. There is grave danger that knowledge not opportunely recorded may disappear and be forever lost, as much of it has in the past.

F. L. Bishop, dean of the mining and engineering unit of the University of Pittsburgh, reported on the progress being made by the committee appointed by the Carnegie Corporation for study to promote and guide engineering and mining education and training. The study has been conducted over a period of eighteen months and is showing signs of achievement. The corporation has appropriated $108,000 for these studies. Dean Bishop would have national engineering societies professional not only in name but in membership also. It is not right, said he, that one year of practical experience should carry as much weight as four or six years of engineering training in college toward entrance into what we term professional societies.

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The gross tonnage of bituminous coal (revenue) transported by the Reading Company during August, 1925, was 1,724,894, compared with 1,182,624 tons in August, 1924.

## *Fuller Scraps Anthracite; Will Use Soft Coal*

Governor Alvan T. Fuller, of Massachusetts, the moving spirit in the plan of New England Governors to solve the fuel problem of the Northeast by substituting soft coal for anthracite, has had thirty tons of hard coal removed from his cellar. The coal, which was stored for winter use, is being replaced by bituminous.

"The anthracite industry would freeze us to death," the Governor told thirty-five Southern business men here on a "good-will" tour. The group included several coal operators from the West Virginia coal field whom he asked to co-operate in his drive. The Governor has urged the general public to "strike off the shackles of bondage" in which New England is held by the hard-coal industry. He declared his action typical of the fighting mood prevailing in New England in regard to the coal situation.

He said that he had received a telegram Oct. 16 announcing the shipment from West Virginia of a trainload of low-volatile bituminous coal to New England for household use.

## Pinchot May Call Special Session on Giant Power

Talk of a special session of the Pennsylvania Legislature during the coming winter has been revived at the Capitol, at Harrisburg. Governor Pinchot has spoken of such a possibility but has never been definite in his attitude in the matter. Giant power would be one of the objects of a special call should he issue one. All of the twenty-six giant power bills sponsored by the Governor died in committee during the regular 1925 session.

It is not considered likely that a call would be sent out for a special session until after the November election, as the Governor has been accused of permitting the special session talk to continue for political purposes only. His opponents assert that if a call is issued it will be to foster the Governor's Senatorial aspirations.

Charles Penrose, an electrical engineer of Philadelphia, speaking before the Pennsylvania Chamber of Commerce at Harrisburg, Oct. 15, assailed Governor Pinchot's giant power proposal as "a fallacy and menace," declaring that there were no mines in Pennsylvania large enough to supply the amount of coal that would be required by a huge power station to make possible the low electrical production cost estimates given in the giant power report submitted to Governor Pinchot by the Governor's survey board.

Certain proposals in the giant power project, he said, warranted the application of the term "fantastic," which has been applied.

## Nova Scotia Coal Inquiry Soon to Be Under Way

Sir Andrew Rae Duncan, who has been chosen by the British Government, at the request of the Government of Nova Scotia, to head the commission of inquiry into the coal mining industry of the latter province, planned to sail from England last week, and it is expected the inquiry will be started before Nov. 1, according to information given out by E. N. Rhodes, Premier of Nova Scotia.

The Government of Nova Scotia has been advised, stated Mr. Rhodes, that W. Armour, of the staff of the British Department of Mines, will accompany Sir Andrew, as a technical expert, to assist in the work of the commission. Mr. Rhodes also announced that T. J. Brown, Deputy Minister of Mines for Nova Scotia, will be appointed secretary to the commission.

This completes the personnel of the commission, which will include Sir Andrew Rae Duncan, London, Eng., chairman; Dr. H. P. MacPherson, president-rector of St. Francois-Xavier University, Antigonish, N. S.; Hume Cronyn, London, Ont., former member of Parliament for that city; T. J. Brown, Deputy Minister of Mines, Nova Scotia, secretary; W. Armour, of the British Mines Department, technical expert.

That the coal industry of Nova Scotia is now well on the way to recovery and stabilization as a result of the truce negotiated by the Rhodes government two months ago, which terminated the five months disastrous wage war between the miners and the British Empire Steel Corporation, is evidenced by the signs of returning prosperity in the mining districts of Cape Breton as well as in the mainland colliery towns. The mines have been operating with scarcely a break since Aug. 9, the day following the signing of the new wage agreement.

With the exception of mines Nos. 6, 15, 11 and 21, practically every colliery in the Cape Breton field is working steadily, the daily average output comparing favorably with past production records. The average daily output for the past several weeks is in excess of 20,000 tons though on several occasions a much larger tonnage has been hoisted.

### *"Hero" in Tight Place*

While Mr. Caillaux, French Minister of Finance, went home something of a hero for having resisted the "greedy" demands of the Americans, it is becoming increasingly apparent that the American commission maneuvered him into a position that is going to be hard to defend. If the French refuse to accept the American proposal to pay $40,000,000 for five years, they must decline to pay an amount which they themselves offered to pay.

It is known that French industrial interests have applied recently to American bankers for large loans. Since it is apparent that the administration would look with disfavor on private loans pending an agreement as to the debt, it is probable that none will be made until satisfactory settlement is made. This will mean strong pressure at home for action.

## Rehearing Denied in Cement And Flooring Cases

The U. S. Supreme Court on Oct. 12 refused to grant a petition for rehearing filed by the government in the Maple Flooring Manufacturers' Association and the Cement Manufacturers' Protective Association cases. This action definitely closes the proceedings.

It was in these two cases, decided against the government, that the Supreme Court last spring laid down its important decisions defining legal and illegal trade association activities, particularly with reference to the collection and dissemination of statistics, and thereby removed the uncertainty which has surrounded such association work for several years.

Immediately after the decisions in the spring the Department of Justice announced that it would accept the principles laid down by the Court but would move for a rehearing in these specific cases on the ground that the evidence showed that the two associations had committed illegal acts within the principles announced by the Court.

## Midland No. 1 Resumes With 107 Men

One hundred and seven men went to work at Midland Mine No. 1 on Oct. 15, when the Pittsburgh Coal Co. reopened it for operation at the November, 1917, wage scale. The mine, which is 27 miles from Pittsburgh and 3 miles from Canonsburg, Pa., is the first of this company in the Panhandle district to resume operations. Banning Nos. 1 and 2 being in the Youghiogheny Valley. This is the seventh mine of the company in operation at the 1917 scale, including four mines in the Pomeroy district of Ohio, which have made a successful record.

The tipple of the Midland mine is one mile from Houston, Pa. Fourteen deputies of the Sheriff of Washington County are on duty at the mine property, but they do not expect any disorder. The normal capacity of the mine is about 400 men. H. M. White is division manager, in charge of operations, and John Bertram is superintendent. Production of coal is expected to start within several days.

Banning No. 2 is running approximately 1,000 tons of coal a day, with 264 men at work. This was the first mine opened, on Aug. 16. Banning No. 1, opened in the middle of September, is producing an average of 500 tons a day.

The Midland mine was closed in November, 1923. The company still has 37 idle mines in the Pittsburgh district. Any one of these will be reopened, according to company officials, as soon as a sufficient number of former employees in any district evince a desire to return to work.

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The By-Product Coke Corporation, the largest producer in the United States of commercial coke, having plants at South Chicago, Ill., has sold a new issue of $5,000,000 first mortgage 5½ per cent gold bonds to Lee, Higginson & Co. and the Continental & Commercial Trust & Savings Bank. The bonds are priced at 94¼, are dated Nov. 1, 1925, and are due Nov. 1, 1945. The purpose of this issue is to effect a saving in interest charges by refunding existing funded debt, chiefly bearing 8 per cent and 6 per cent interest; two issues of mortgage bonds, in fact, have been called in.

# Bituminous Coal Loaded Into Vessels at Lake Erie Ports During Season to End of September

(In Net Tons)

| Ports | Railroads | 1925 | | | 1924 | | | 1923 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Cargo | Fuel | Total | Cargo | Fuel | Total | Cargo | Fuel | Total |
| Toledo | Hocking Valley | 6,046,551 | 174,963 | 6,221,514 | 4,867,888 | 143,569 | 5,011,457 | 3,584,242 | 108,355 | 3,692,597 |
| | Big Four | 1,156,949 | 6,664 | 1,163,613 | 9,036 | 95 | 9,131 | ........ | ........ | ........ |
| | N. Y. C.-Ohio Central Lines | 727,286 | 55,832 | 783,118 | 44,905 | 1,412 | 46,317 | 1,084,724 | 33,778 | 1,118,502 |
| | Baltimore & Ohio | 2,406,714 | 72,900 | 2,479,614 | 1,445,978 | 43,951 | 1,489,929 | 2,161,529 | 62,473 | 2,224,002 |
| Sandusky | Pennsylvania | 4,192,755 | 124,872 | 4,317,627 | 2,792,109 | 85,872 | 2,877,981 | 2,295,788 | 72,405 | 2,368,193 |
| Huron | Wheeling & Lake Erie | 498,275 | 24,145 | 522,420 | 546,853 | 28,030 | 574,883 | 1,113,192 | 43,238 | 1,156,430 |
| Lorain | Baltimore & Ohio | ‡815,041 | 105,445 | 920,486 | 1,422,592 | 112,642 | 1,535,234 | 2,537,212 | 141,950 | 2,679,162 |
| Cleveland | Pennsylvania | 275,650 | 131,382 | 407,032 | 1,161,296 | 136,106 | 1,297,402 | 1,400,296 | 151,749 | 1,552,045 |
| | Erie | 18,138 | 1,252 | 19,390 | 244,156 | 8,109 | 252,265 | 590,203 | 26,781 | 616,984 |
| Fairport | Baltimore & Ohio | 580,925 | 77,860 | 658,785 | 402,002 | 69,646 | 471,648 | 586,570 | 56,185 | 642,755 |
| Ashtabula | New York Central | 279,486 | 68,146 | 347,632 | 702,322 | 90,587 | 792,909 | 2,568,081 | 198,358 | 2,766,439 |
| | Pennsylvania | 572,648 | 69,691 | 642,339 | 875,088 | 62,676 | 937,764 | 1,564,206 | 69,647 | 1,633,853 |
| Conneaut | Bessemer & Lake Erie | 890,885 | 173,612 | 1,064,497 | 1,251,550 | 162,466 | 1,414,016 | 2,099,299 | 178,745 | 2,278,044 |
| Erie | Pennsylvania | 207,545 | 44,488 | 252,033 | 461,396 | 63,316 | 524,712 | 475,659 | 63,970 | 539,629 |
| Total | | 18,668,848 | 1,131,252 | 19,800,100 | 16,227,171 | 1,008,477 | 17,235,648 | 22,061,001 | 1,207,634 | 23,268,635 |
| Storage Loading | | †33,017 | 1,048 | 34,065 | *182,060 | 4,940 | 187,000 | ........ | ........ | ........ |

* Coal loaded into vessels in December, 1923, after close of navigation and forwarded from Lake Erie Ports during 1924.

† Coal loaded into vessels in December, 1924, after close of navigation and forwarded from Lake Erie Ports during 1925.

‡ Includes 42,005 tons cargo and 2,798 tons fuel dumped at Huron on account of fire at Lorain, June 12, 1925.

Compiled by Ore & Coal Exchange, Cleveland, Ohio; H. M. Griggs, manager.

# Output Higher in Strike Zone Of Northern West Virginia Since Lewis' Call to Non-Union Miners

Non-union coal production shows signs of increasing since the second strike call was issued to the non-union miners of northern West Virginia on Sept. 26, when John L. Lewis, international miners' union president, visited Fairmont. In the first four days of last week the non-union mines produced 6,821 cars of coal, an increase of 184 cars compared to the first four days of the previous week. Non-union output all over the field is showing increases, although no production records have been established recently.

The open-shop tonnage is especially strong on the Monongahela Ry. and the Monongah Division of the Baltimore & Ohio. Non-union mines along the Monongahela produced 537 cars Oct. 15, the largest daily tonnage reached there since Aug. 11. Non-union production was increasing on the Wyatt-Bingamon and Helen's Run branches of the Western Maryland until a car shortage developed.

### Union Production Increases

Union production in Northern West Virginia also showed signs of increasing slightly last week, when 1,157 cars were loaded in the first four days, or 48 more cars than in the corresponding period of the previous week. More union coal is being produced on the Monongahela Ry., the plants working under the Jacksonville agreement having loaded 222 cars on Oct. 14, which is the heaviest since the strike started, on April 1. At present the union tonnage on the Scott's Run branch of the Monongahela Ry. exceeds the open-shop tonnage.

Mines in northern West Virginia produced 569,200 net tons of coal in the week ended Oct. 10, compared to 531,400 tons in the previous week, 514,000 tons in the corresponding week of 1923 and 398,250 tons in the corresponding week of 1924. The non-union mines in the field produced 9,782 cars of coal in the week ended Oct. 10, compared to 9,146 cars in the preceding week. Union mines loaded 1,587 cars, compared to 1,382 cars in the previous week.

Injunctions against the United Mine Workers of America and its officers and other members granted on behalf of virtually every mine in a belt south of the Kanawha River and running almost to the southern end of the state were made permanent Oct. 16 by order of Judge McClintic in the U. S. District Court.

The decision was handed down in twelve injunction cases, consolidated for hearing, in which the total number of plaintiff companies reached 309, some being plaintiffs in more than one suit.

Judge McClintic held that the United Mine Workers had "unlawfully combined and conspired absolutely to monopolize and control all labor in the United States and on the American continent engaged in mining and producing coal."

Due to a strike of engine drivers, firemen and hostlers on the Western Maryland Ry. coal mines along the Wyatt-Bingamon & Helen's Run branches in West Virginia suffered from car shortage for several days last week. Rail officials assert that the lack of empties was not due to the strike as much as to the equipment being delayed on foreign railroads. The W. M. officials predicted that this would be corrected and the equipment would soon be flowing back to the mines. No serious complications are expected because of the strike.

Many operators believe the union not only has absolutely no chance to win out in the field but will never come back. Union officials refuse to make any such admission and are busy erecting barracks for the winter.

### Says Union Output Is Heavy

In a statement issued last week Mr. Bittner claims that certain non-union mines along the Monongahela River front in the Brady section of Monongalia County are working with reduced forces and that many strike breakers have left the region. "The fact that all the union mines in northern West Virginia are operating at more than full capacity clearly shows that the United Mine Workers have in no way destroyed the coal mining industry in this field and proves that all the mines necessary to furnish the coal coming from northern West Virginia could be operated on the Baltimore and New York agreements," says Bittner in his statement. He adds: These facts more clearly than ever demonstrate the perfidy of the coal operators, who abrogated the wage agreement with the United Mine Workers."

Three large miners' houses at the Berry Mine of the Monongah Coal Co., formerly controlled by the Soper-Mitchell interests, in Scotts Run, Monongalia County, near Morgantown, were burned down Sunday night, Oct. 18. Fumes of gasoline caused county officials to be suspicious concerning the origin of the fire.

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## Wertheim Elected President Of Burns Bros.

Sanders A. Wertheim, vice-president of Burns Bros., New York coal dealers, was elected president and J. S. Bache was elected a director on Oct. 13. Mr. Wertheim has filled the office since the resignation of Frank L. Burns, a few months ago. He became actively identified with the firm at the time that S. M. Schatzkin and interests represented by him gained control of the firm. Mr. Wertheim organized the Steamship Fuel Corporation and the Wyoming Valley Coal Co., both acquired recently by Burns Bros. Regular dividends were declared.

*Photo by Harris & Ewing*

**Wayne P. Ellis**

The Lake Superior Coal Dock Association, with headquarters in Minneapolis, has formally dissolved, by unanimous vote of its members. The membership owned coal docks at Duluth, Superior and Ashland, and was a continuation of the Northwest Coal Dock Operators' Association. To continue the work of freight and traffic matters performed by the dock association, Wayne P. Ellis, formerly secretary, has formed a private business, known as the Ellis Coal Bureau, with offices at 1001 Plymouth Building, Minneapolis. He has taken over the organization of the dock association and will provide for clients the service formerly supplied by the retiring association. It will include statistical information as to coal production, movement and stores, credits and trade matters, and legislation.

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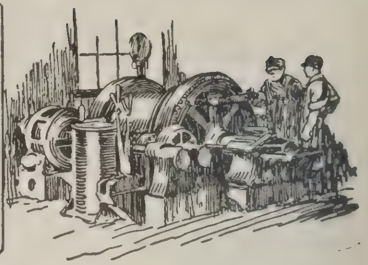
## Seek Broad Gage Director for Bureau of Mines

Developments at the Pittsburgh meeting of the U. S. Bureau of Mines advisory committee, Oct. 19 and 20, foreshadow clearly that the economic phases of mining will be emphasized in the renascent Bureau. It seems probable that the coal and minerals divisions of the Bureau of Foreign and Domestic Commerce will be transferred to the Mines Bureau.

The committee is anxious to recommend for the directorship, it was revealed, one who has had experience in the practical operation of mines, mills and smelters. At the same time the director must be well grounded in the scientific questions which confront the industry, including geology. He shall, also, preferably have had experience in coal mining as well as in metal mining. A knowledge of the mining situation in Alaska is desirable, and there is real need that the man shall have had foreign experience, particularly in Latin America.

An engineer who has had enough contact with the government service to be familiar with its machinery and methods of procedure would appeal to the committee. Transportation has come to have a more important bearing on the mining industries than ever before, so the qualification that the new director be familiar with transportation matters has been added.

# Practical Pointers For Electrical And Mechanical Men



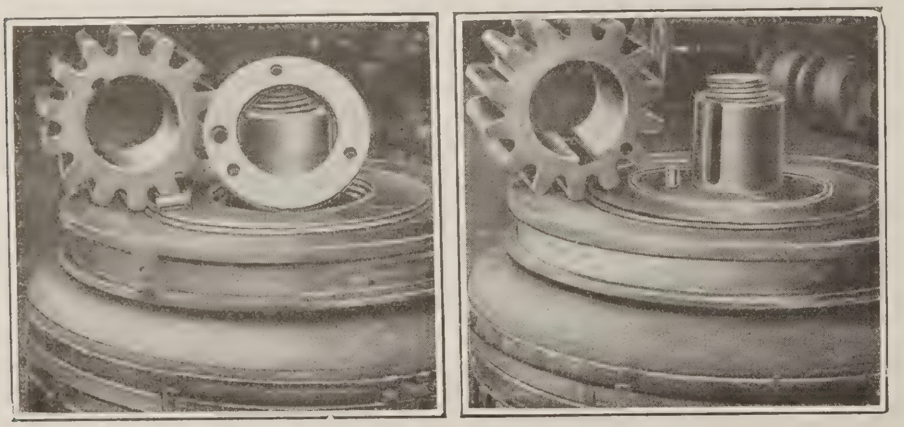
## Locks Ball-Bearing Nut on Shaft By Pinning to Pinion

Most mine electricians will agree that a need exists for a more satisfactory method of locking the ball-bearing nut on the pinion end of mine locomotive armatures. The chief objections to the method commonly in use are a lack of reliability, damage to threads and difficulty in removing the nut.

A method of locking which is, perhaps, somewhat out of the ordinary has been adopted as standard at the mines of the Island Creek Coal Co., in West Virginia. Instead of the nut being fastened directly to the shaft it is locked to the pinion by means of a pin, consisting of a $\frac{3}{8}$ x 1 in. counter-sunk head rivet. The pinions, which are hardened steel, are ordered from the factory with a $\frac{3}{8}$ x $\frac{3}{4}$-in. hole drilled in one end at a point near the keyway. A $\frac{3}{8}$-in. rivet projecting from the bearing nut extends into this hole in the pinion.

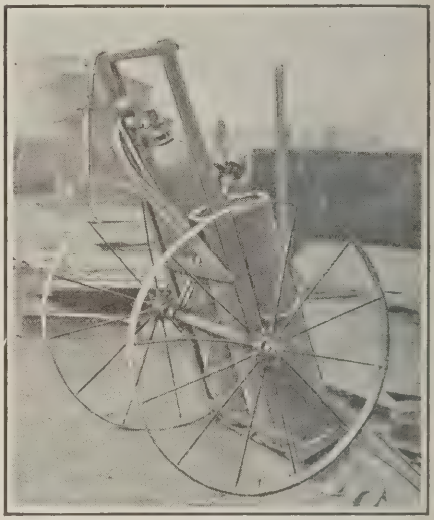
This device is assembled in the following manner: The bearing nut is first set down to its limiting position, then the pinion with a dummy or pilot pin inserted in the hole is assembled loosely on the shaft and the exact position of the pin marked on the nut. This latter is then removed and drilled, the hole being counter-sunk on the bearing side. The rivet is then slipped into place and the nut screwed tight into its final position. Placing the pinion on the shaft and keying it in place completes the lock.

A natural question to ask in regard to this method of fastening is this: Does not the hole in the side of the pinion reduce its strength? L. D. Thompson, chief electrician of direct-current equipment for the Island Creek company, answers this as follows: "The hole is only $\frac{3}{4}$ in. deep and we have had no broken pinions." He has found this method of nut locking to be a big improvement over others with which he has had experience.



**Removing the Pinion Unlocks the Bearing Nut**

In the illustration on the left the bearing nut has been removed from the shaft in order to show the counter-sunk hole and the rivet. At the right the nut is in place and the rivet is held secure by the butting of its head against the ball bearing beneath it. The lock is completed by the end of the rivet fitting into the hole in the end of the pinion.



**Welding Outfit and Cart**

This cart built up chiefly of structural shapes and mounted on steel wheels of large diameter, furnishes a ready means of moving the welding torch and its necessary equipment to any point where desired. One or two men can pull it almost anywhere but if time is short and the distance long a horse, wagon or automobile may be used to furnish the motive power for transportation.

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## Welding Cart Facilitates Odd-Job Repairs

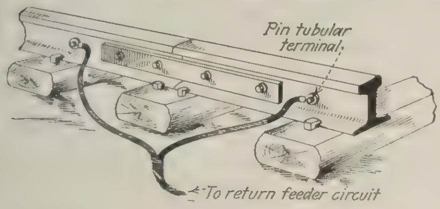
With the extensive use of the oxy-acetylene torch for various purposes in and about the mines has come the need for some means of readily transporting the necessary outfit from place to place. The accompanying illustration shows the "welding cart" built and used at the Valier mine of the Valier Coal Corporation, Valier, Ill.

The outfit used in both cutting and welding consists of the oxygen and acetylene cylinders, the torch, and the hose connecting it to the cylinders, together with the necessary regulating valves and pressure gages. When work has to be done anywhere about the plant, except at the shop where permanent arrangements have been made for autogenous welding, it is necessary to transport the entire outfit to the point of application.

The cart here shown consists of a framework built up of light structural shapes, chiefly angles and straps, picked up from odds and ends about the shop. This is mounted on an axle carried between two light steel wheels of large diameter. These wheels look as if they had at some time graced a corn cultivator or similar agricultural implement. Their light weight and large size make transportation of the outfit easy even though this be over fairly rough ground.

## Simple Attachment Gives Good Service

The accompanying sketch illustrates a method by which a return feeder cable may be successfully attached to the haulage road. I have seen employed around the mines many different methods of attaching return feeders to the rails but most of them are not one hundred per cent perfect. That this particular method is good is evidenced by the fact that it has been in service for twelve years and a recent test on it with a standard bond tester (it acts as a bond also) shows that it is comparable to any pin tubular bond that recently has been put in service.



**Return Feeder Connection Is Easily Made and Lasts Long**

A double attachment is made to the track by a connector which also serves as a bond. The fact that it can be easily installed and protected makes it most valuable.

Although it has given no trouble this method of fastening cables to the rails possesses more than one advantage. In case the cable is cut by a car jumping the track, a new connection can be made quickly and permanently installed.

Another big advantage is that the connection cannot readily be sheared off by the flange of a wheel because it can be buried deeply in the dirt around the ties and thus be protected.

Harry Guilford.

**Bearing Reinforced by Forged Band**

This bottom plate with step plate assembled has just come out of the Holden shop of the Island Creek Coal Co. and is ready for sending to any of its mines. Because in some instances the casting surrounding the intermediate bearing of the step plate has broken in service, this part is now reinforced by a $\frac{1}{2}$ x $1\frac{1}{4}$-in. forged band shrunk around the top.

## Roof Leaks Stopped by Changes to Idler

At Orient No. 2 mine, located at West Frankfort, Ill., a short-center, belt drive, with idler, forms the connection between the 300-hp. motor and the fan. As originally installed, the idler pulley was held up against the belt by a weight suspended from a wire rope which passed through sheaves hung from the steel purlins of the roof structure.

This proved unsatisfactory because vibration from the idler was transmitted to the roof and caused leaks in the joints between the concrete roof tiles. The roof span of this building, which houses the auxiliary hoist and substation equipment as well as the fan, is approximately 40 ft. and was not designed for additional loads such as imposed by the idler.

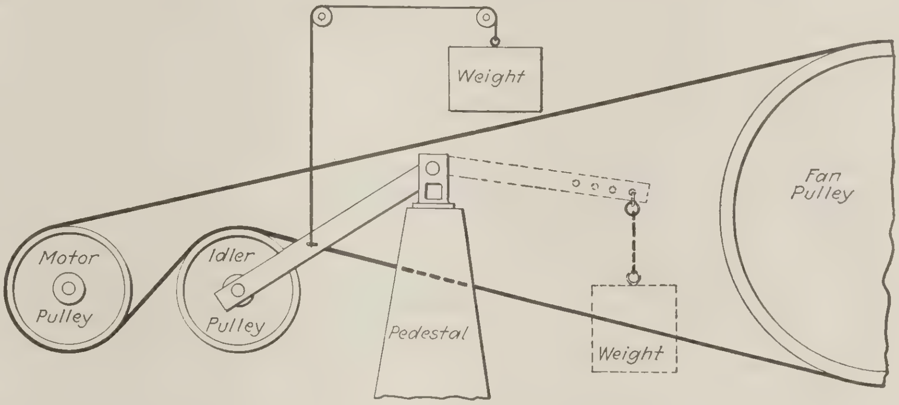


**Fig. 1—Dotted Lines Indicate Changes Made to Idler**

The arms supporting the idler pulley were keyed to the pedestal shaft. The weight was removed from the ceiling mounting and hung on an arm which was added and likewise keyed to the shaft.

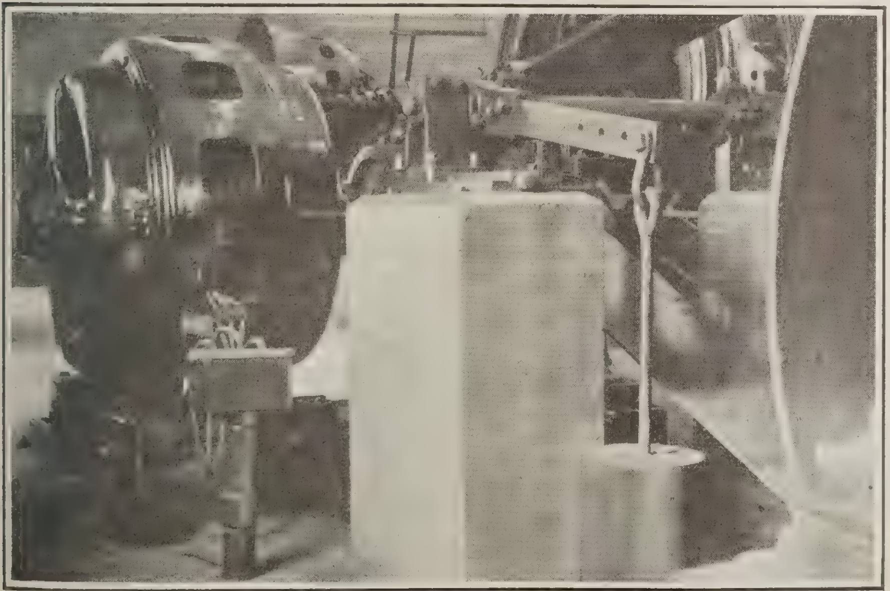


**Fig. 2—The 300-Hp. Motor Driving New Orient's Fan**

The weight hanging on the projecting arm tends to rotate the shaft, thus holding the idler pulley up against the belt. Originally idler tension was maintained by a weight hung on a cable carried through sheaves attached to the roof. Vibration caused leaks in the roof, these occurring between the concrete roof tiles.

### Weight Can Be Shifted

The trouble was overcome by changing the idler weight to the position indicated by the dotted lines in Fig. 1. Originally the arms supporting the idler pulley were not keyed to the shaft. Keys were applied, a third arm added, and the weight hung near the end of this arm. Adjustment of the belt tension is accomplished by changing the weight to the various holes in the arm. This gives the weight more or less leverage as may be desired.

Orient No. 2, known also as New Orient, is equipped for an ultimate capacity of 12,000 tons per day, and now holds the world's record, having hoisted over 10,000 tons in one shift.

# Viewpoints of Our Readers

## Should U. S. Exchange Ideas With Germany?

Dr. Franz Fischer, director of the German Coal Research Institute in the Ruhr, recently has visited America upon the invitation of Dr. A. C. Fieldner, chief chemist of the U. S. Bureau of Mines, who, himself, had been Dr. Fischer's guest in 1924.

In conversation with a man like Fischer one very soon becomes aware of one great difference between American and German industrial establishments. The latter employ more scientists and men of broad technical training, while the former operate with relatively fewer men and bosses in every plant. This is true in mines as well as in factories. In a German coal mine not less than 800 men would be required to produce 2,000 tons a day, and too much work is done by hand—for instance in dumping and screening coal, many cars are pushed by man-power, and there is more bossing of men than is necessary. The German has no idea of American speed, but he wastes no material and every mark invested in the plant has to bear interest. Byproducts are utilized with the utmost care, and the greatest scientific ingenuity shows itself in the development of highly complex chemical compounds out of inferior raw materials.

Recently the Germans have developed a system of producing synthetic petroleum from heated cokes and water-vapors. This artificial oil is called "Synthol" and can be produced at an expense of 24c. a gallon. In America, oil is pumped out of the ground much cheaper than we could make it, but in a country which has almost no oil wells and whose supply of kerosene depends entirely upon foreign sources, the people may, under certain circumstances, be willing to pay $7.50 for a barrel.

### FOLLOW ECONOMIC FORCES

The early American industries were handicapped by a shortage of workmen and, therefore, developed labor-saving devices. Germany's natural resources are small in proportion to her population, and she had to economize in material. One country has become a leader in labor management, the other in the saving of raw materials and byproducts.

In Germany some coal companies want to organize mines on the American plan. They are beginning to learn American labor methods, and we might well adopt some of their scientific spirit and give more chance to highly trained coal mining engineers. Surely an exchange of ideas between two progressive nations will help both.

A. C. NOÉ,
Department of Geology,
University of Chicago.
Chicago, Ill.

## Value of Compensation Rates As Measure of Hazard

In reference to the article appearing in *Coal Age,* Aug. 13, 1925, p. 217, entitled "In Ohio Sixty-nine Industries Pay Higher Compensation Rates than Coal Mining" I agree with you that maximum and minimum limits on compensation necessarily affect the compensation rate. However, the effect it has within a given classification depends on the average wage levels of such classification.

Consequently, compensation rates are not always an exact index of the hazard of an industry. For instance, the compensation rate of house wreckers is much higher than that of structural steel erectors. This is due to the steel erectors working shorter hours, being more intelligent men and having a higher wage scale than house wreckers.

### LAW AMENDED IN 1923

You quote the law as it stood in 1921. In 1923 it was amended so that for an injury resulting in partial disability the compensation, while still 66⅔ per cent of the impairment of the earning capacity of the injured, was limited to a maximum of $18.75 per week and to an aggregate limit of $3,750, such compensation being in addition, however, to the compensation allowed to the claimant for the period of temporary total disability, resulting from such injury.

The compensation in case of permanent total disability was also still 66⅔ per cent but the maximum was set at $18.75 per week and at not less than a minimum of $5 per week unless the employee's average weekly wages are less than $5 per week at the time of injury, in which case he shall receive compensation in an amount equal to his average weekly wages.

Again in case of death, the $15 becomes $18.75 and the maximum, $5,000 becomes $6,500.

Since July 1, 1925, the flat rate for occupational diseases has been 1½c. per $100 in all industries, no classification rating being made on occupational disease.

E. I. EVANS, Actuary.
The Industrial Commission of Ohio
Columbus, Ohio.

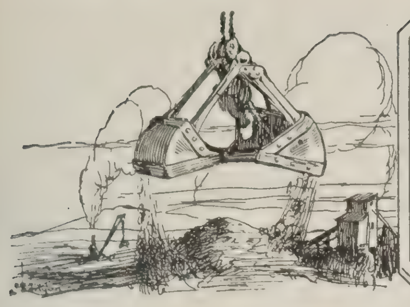
As $18.75, the maximum compensation, corresponds to a wage of $28.12 per week instead of to $22.50 per week as did the maximum former compensation of $15, the change in the compensation law has made it necessary to place the rates more nearly in accord with the hazard. The maximum of $6,500 is, however, less than $18.75 a week for eight years and is only about $15.62 which would correspond to a wage of $23.43 per week.

The effect of the hours of working on the relation of the compensation rate to the hazard is not of primary interest. What we are desirous of knowing is the hazard in relation to duration of life and not the hourly, though that may be the true hazard of the occupation. If a man worked only one hour a day his real hazard as a worker would only be one eighth that of the man who worked eight hours at the same job, and we are interested solely in the possibility of his being hurt, no matter how his immunity is attained, whether by abstention from work or in any other way. EDITOR.

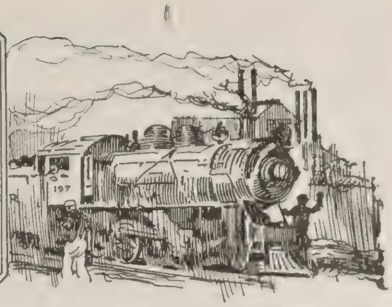
## Should Be Arched and Packed

I concur with your editorial of June 4, entitled "Coal-Dust Shelving," in which you remark that the big cavities above mine roadways are a dangerous feature. It would be much better if we would pack such places with loose rock over either arching or iron timbering, and if circumstances require cribbing, such cribs should be plentifully covered with rock dust.

GEORGE S. RICE,
Chief Mining Engineer,
U. S. Bureau of Mines,
Washington, D. C.



# Production And the Market



## Bituminous Coal Market Has Healthy Tone Though Surface Change Is Slight

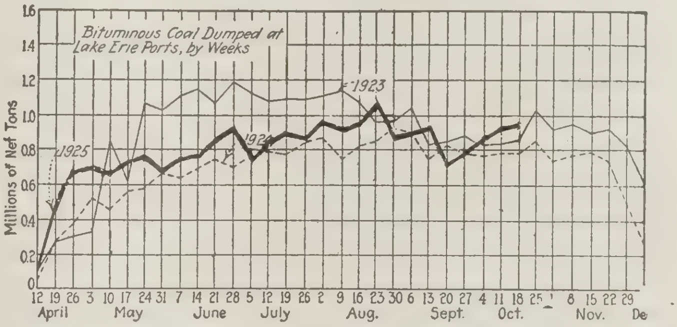
That the bituminous coal business as a whole has undergone comparatively little change in the past week is distinctly in its favor. An increase in demand appeared about two weeks ago with a cool wave, and that the trade has been able to hold its gain despite a moderation in temperature is indicative of healthy underlying conditions. There is not much balm, of course, for those who were banking on a panicky public willing to pay any price for coal as a sure result of the suspension of operations at the anthracite mines. As a matter of fact, the hard-coal strike has had far from the expected effect on the soft-coal trade; nor, for that matter, does the regular steam coal trade give any marked outward indication of increased activity, but liberal shipments are being taken on contracts and consumers are building up stocks. All in all, the tone of the market is better, shopping around and price shading being less in evidence.

"No bills" are less numerous in Illinois and though shipments of screenings have been heavier the market has been able to absorb them and maintain prices firmly. West Virginia smokeless is regaining strength, especially in Midwest markets, though the demand is quite light in New England. Strangely enough, Pennsylvania coals show a firmer price tendency than West Virginia fuels in the Northeast.

Business in Kentucky has been shifting back and forth with the weather, with a slight net gain. Production is a little lighter and screenings in active demand. Normal seasonal trade prevails at the Head of the Lakes and the outlook is thought to be promising. Shipments to the lakes are heavy, all records having been broken last week according to railroad figures.

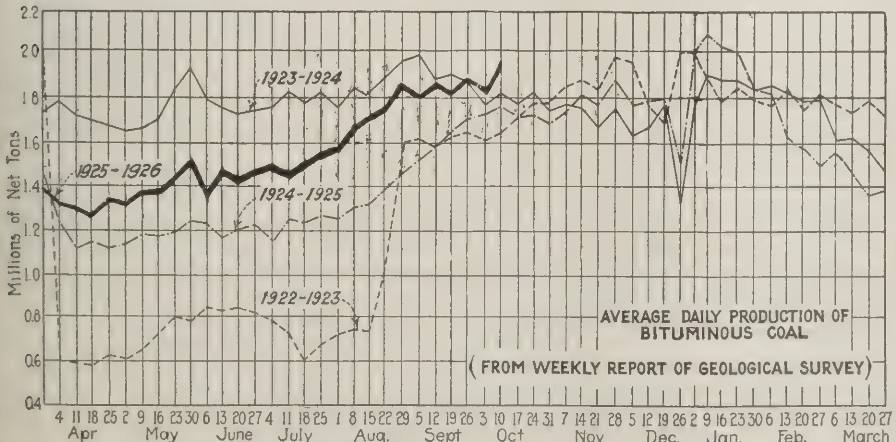
As the supply of anthracite continues to dwindle the interest of retailers and public in substitutes increases, the demand of late having become quite heavy. Coke is far in the lead, but the supply is much short of the demand, many shippers of byproduct coke being already out of the market. Sized bituminous coal is beginning to have a better call, and this is expected to improve with the suspension of the ban against soft coal in many Eastern cities. Shipments of pea coal are somewhat slower and the price of buckwheat has been advanced 25c. by one of the old line companies. Some independent pea and buckwheat can be picked up in in New York harbor, but there has been no clamor for it because of the prices asked. Though $16 has been pronounced a "reasonable" price for domestic coal in New York, retail quotations are as high as $23.50.

Bituminous coal production in the week ended Oct. 10 is estimated by the Bureau of Mines at 11,696,000 net tons, the largest weekly output since last January. This compares with 11,008,000 tons in the preceding week. Anthracite output was 13,000 net tons.



*Coal Age* Index of spot prices of bituminous coal on Oct. 19 stood at 176, the corresponding price being $2.13.

Dumpings at Lake Erie ports during the week ended Oct. 18, according to the Ore & Coal Exchange, were: Cargo, 885,659 net tons; steamship fuel, 48,774 tons—a total of 934,433 net tons, compared with 924,668 tons in the preceding week. Hampton Roads dumpings in the week ended Oct. 15 totaled 355,202 net tons.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| Sept. 26 (*a*) | 10,458,000 | 11,232,000 |
| Oct. 3 (*a*) | 10,614,000 | 11,008,000 |
| Oct. 10 (*b*) | 10,904,000 | 11,696,000 |
| Daily average | 1,817,000 | 1,949,000 |
| Cal. yr. to date | (*c*) 360,545,000 | 383,050,000 |
| Daily av. to date | 1,507,000 | 1,598,000 |
| **ANTHRACITE** | | |
| Sept. 26 | 1,942,000 | 13,000 |
| Oct. 3 | 1,425,000 | 14,000 |
| Oct. 10 | 1,737,000 | 13,000 |
| Cal. yr. to date | (*c*) 70,533,000 | 61,693,000 |
| **COKE** | | |
| Oct. 3 (*a*) | 138,000 | 187,000 |
| Oct. 10 (*b*) | 127,000 | 193,000 |
| Cal. yr. to date | (*c*) 7,646,000 | 7,469,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

## Midwest Thankful in Holding Its Own

There has been remarkably little change in the Chicago market in the last week. Demand for prepared coals keeps up fairly well, but not enough to warrant operators increasing prices; in fact, producers are thankful it has not slumped enough to necessitate a cut. Six-inch lump is still most wanted, with 6x3-in. furnace and 3x2-in. small egg running fairly close.

Illinois operators have reduced "no bills" at mines in the last ten days, principally on account of a little cold weather. This more or less implies a production of more prepared sizes, and this has brought about somewhat heavier shipments of screenings. The market has absorbed these extra screenings and prices remain firm at the old level—$1.60@$1.75 for Franklin County and good southern Illinois 2-in.

Coal from strip mines in the north central part of Illinois and the Clinton field of Indiana are coming into Chicago in increasing quantities. The fact that operators of strip pits can put their coal on the cars at a relatively low figure is the main thing that keeps prices so low on the much higher grade steam coals from the southern part of the state.

No one pays much attention to the anthracite situation, as there is no shortage of hard coal in Chicago and apparently dealers have in reserve enough to take care of their needs for the next two months. The coke people have taken advantage of the situation, however, and have increased prices on domestic grades approximately $1 a ton. This is not particularly noteworthy, as coke prices in Chicago have been relatively low for the last six months.

Pocahontas coal coming into this market sells at around $4.25@$4.50 for domestic sizes; mine-run around $2. Shippers of smokeless think the price slump is about over, and a gradual improvement can be looked for. High-volatile coals from Kentucky and West Virginia are moving through Chicago in fair volume, although little of them is being disposed of in Chicago. Prices vary from $2.50 to $3.50 for 4-in. block, according to quality, and on egg run all the way from $2 to $2.75.

Cold weather is beginning to move southern Illinois coal, especially the domestic sizes. The lump is moving freely, egg fairly well, but nut is slow and steam sizes are heavy. Better working time prevails in a general way throughout the field at the shaft mines, although rainy weather has stopped the activities at strip mines to a considerable extent. All mines have a large number of "no bills" of different sizes on hand and are trying to keep the sizes most in demand ahead. Many mines in the field have not opened up but gradually they are beginning operations and it is evident that some of them will not resume this winter.

In the Duquoin field there is no change. Four and five days a week seems to be the best working time a couple of the mines get and the others average three. Small sizes are heavy here with no change in prices. In the Mt. Olive

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| **Low-Volatile, Eastern** | Market Quoted | Oct. 20 1924 | Oct. 5 1925 | Oct. 12 1925 | Oct. 19 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $4.50 | $4.60 | $4.60 | **$4.50@ $4.85** |
| Smokeless mine run | Columbus | 2.35 | 2.55 | 2.55 | 2.40@ 2.75 |
| Smokeless screenings | Columbus | 1.30 | 1.50 | 1.50 | 1.40@ 1.60 |
| Smokeless lump | Chicago | 4.60 | 4.10 | 4.10 | 4.00@ 4.25 |
| Smokeless mine run | Chicago | 2.00 | 2.10 | 2.10 | 2.00@ 2.25 |
| Smokeless lump | Cincinnati | 4.35 | 4.35 | 4.50 | **4.50@ 5.00** |
| Smokeless mine run | Cincinnati | 2.10 | 2.35 | 2.35 | **2.50** |
| Smokeless screenings | Cincinnati | 1.15 | 2.00 | 1.90 | 1.85@ 2.00 |
| *Smokeless mine run | Boston | 4.40 | 4.85 | 4.75 | *4.50@ 4.75* |
| Clearfield mine run | Boston | 2.05 | 1.85 | 1.90 | **1.75@ 2.15** |
| Cambria mine run | Boston | 2.60 | 2.15 | 2.20 | **2.00@ 2.50** |
| Somerset mine run | Boston | 2.05 | 2.00 | 2.05 | **1.85@ 2.35** |
| Pool 1 (Navy Standard) | New York | 2.75 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pool 1 (Navy Standard) | Philadelphia | 2.70 | 2.65 | 2.65 | 2.50@ 2.85 |
| Pool 1 (Navy Standard) | Baltimore | 2.60 | 2.30 | 2.30 | 2.25@ 2.35 |
| Pool 9 (Super. Low Vol.) | New York | 2.10 | 2.20 | 2.20 | 2.10@ 2.30 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 1.95 | 1.95 | 1.95@ 2.00 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.90 | 2.05 | 2.05 | **2.10@ 2.20** |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.90 | 2.00 | 2.00 | 1.85@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.85 | 1.85 | 1.75@ 2.00 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.70 | 1.90 | 1.90 | **1.95@ 2.05** |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.80 | 1.80 | 1.75@ 1.90 |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.70 | 1.70 | 1.60@ 1.80 |
| Pool 11 (Low Vol.) | Baltimore | 1.60 | 1.70 | 1.70 | **1.80@ 1.85** |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.55 | 1.55 | 1.60 | *1.55@ 1.60* |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.60 | 1.60 | 1.50@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.50 | 1.65 | 1.65 | **1.75@ 1.85** |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.50 | 2.50 | 2.50 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 2.05 | 2.05 | *2.00@ 2.10* |
| Pittsburgh slack (Gas) | Pittsburgh | 1.20 | 1.55 | 1.55 | 1.50@ 1.60 |
| Kanawha lump | Columbus | 2.55 | 2.60 | 2.60 | 2.45@ 2.80 |
| Kanawha mine run | Columbus | 1.50 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings | Columbus | 1.00 | 1.30 | 1.30 | 1.25@ 1.35 |
| W. Va. lump | Cincinnati | 3.10 | 2.60 | 2.60 | 2.50@ 2.75 |
| W. Va. gas mine run | Cincinnati | 1.50 | 1.60 | 1.65 | 1.60@ 1.75 |
| W. Va. steam mine run | Cincinnati | 1.35 | 1.55 | 1.55 | 1.50@ 1.65 |
| W. Va. screenings | Cincinnati | .95 | 1.25 | 1.25 | *1.15@ 1.35* |
| Hocking lump | Columbus | 2.55 | 2.70 | 2.70 | 2.50@ 2.90 |
| Hocking mine run | Columbus | 1.55 | 1.65 | 1.65 | 1.50@ 1.85 |
| Hocking screenings | Columbus | .85 | 1.30 | 1.30 | **1.25@ 1.40** |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.35 | 2.35 | 2.00@ 2.75 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.85 | 1.85 | 1.85@ 1.90 |
| Pitts. No. 8 screenings | Cleveland | 1.05 | 1.35 | 1.25 | 1.20@ 1.30 |

| **Midwest** | Market Quoted | Oct. 20 1924 | Oct. 5 1925 | Oct. 12 1925 | Oct. 19 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $3.35 | $3.25 | $3.25 | $3.25 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Central, Ill. lump | Chicago | 2.85 | 2.85 | 2.85 | 2.75@ 3.00 |
| Central, Ill. mine run | Chicago | 2.20 | 2.10 | 2.10 | 2.00@ 2.25 |
| Central, Ill. screenings | Chicago | 1.15 | 1.55 | 1.55 | 1.35@ 1.75 |
| Ind. 4th Vein lump | Chicago | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.30 | 1.60 | 1.60 | 1.50@ 1.75 |
| Ind. 5th Vein lump | Chicago | 2.85 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | .95 | 1.40 | 1.40 | 1.35@ 1.50 |
| Mt. Olive lump | St. Louis | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.50 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.35 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.85 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 2.20 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | .80 | 1.15 | 1.15 | 1.15 |
| West Ky. block | Louisville | 3.35 | 1.90 | 1.75 | **1.75@ 2.00** |
| West Ky. mine run | Louisville | 1.70 | 1.35 | 1.30 | **1.20@ 1.50** |
| West Ky. screenings | Louisville | .70 | .95 | .95 | **.90@ 1.10** |
| West Ky. block | Chicago | 2.75 | 2.05 | 2.05 | 1.85@ 2.25 |
| West Ky. mine run | Chicago | 1.65 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.00 | 2.25 | 2.25 | 2.00@ 2.50 |
| Big Seam mine run | Birmingham | 1.60 | 1.80 | 1.80 | 1.60@ 2.00 |
| Big Seam (washed) | Birmingham | 1.85 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block | Chicago | 2.85 | 3.00 | 3.00 | 2.75@ 3.25 |
| S. E. Ky. mine run | Chicago | 1.60 | 1.95 | 1.95 | 1.85@ 2.10 |
| S. E. Ky. block | Louisville | 3.35 | 2.60 | 2.60 | 2.50@ 2.75 |
| S. E. Ky. mine run | Louisville | 1.60 | 1.60 | 1.50 | 1.40@ 1.65 |
| S. E. Ky. screenings | Louisville | .90 | 1.20 | 1.20 | **1.20@ 1.35** |
| S. E. Ky. block | Cincinnati | 3.35 | 2.85 | 2.85 | *2.60@ 3.00* |
| S. E. Ky. mine run | Cincinnati | 1.55 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Cincinnati | 1.00 | 1.25 | 1.25 | **1.15@ 1.45** |
| Kansas lump | Kansas City | 5.00 | 4.50 | 4.50 | 4.50 |
| Kansas mine run | Kansas City | 3.50 | 3.00 | 2.85 | 2.75@ 3.00 |
| Kansas screenings | Kansas City | 2.00 | 2.40 | 2.40 | 2.35@ 2.50 |

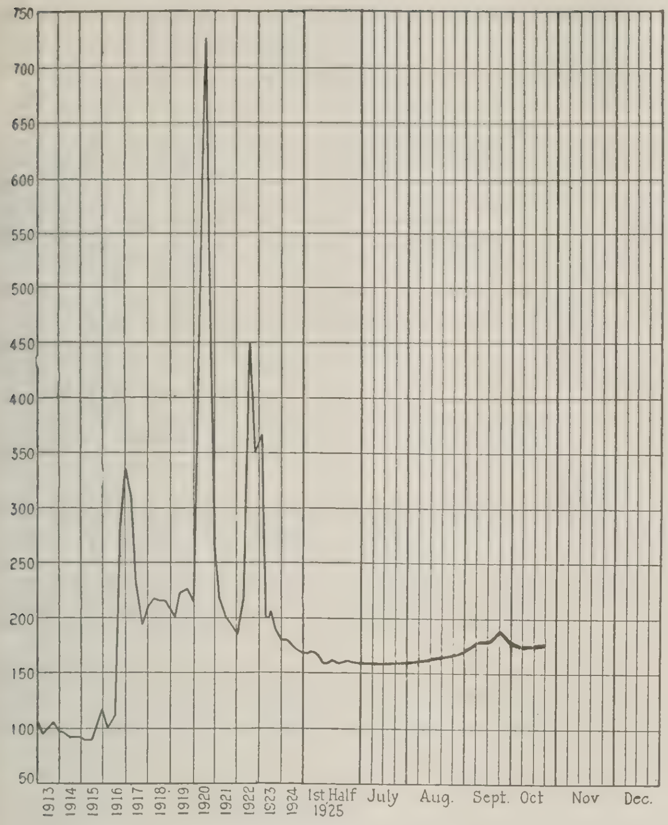
* Gross tons, f.o.b. vessel, Hampton Roads.

† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | October 20, 1924 | | October 12, 1925 | | October 19, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ............ | $8.00@ $9.25 | ............ | $8.20@ $8.95 | ............ | $8.20@ $8.95 |
| Broken | Philadelphia | 2.39 | ............ | 9.15 | ............ | ............ | ............ | ............ |
| Egg | New York | 2.34 | $9.25@ $9.75 | 8.75@ 9.25 | ............ | 8.65@ 8.90 | ............ | 8.65@ 8.90 |
| Egg | Philadelphia | 2.39 | 9.25@ 9.75 | 8.80@ 9.25 | ............ | ............ | ............ | ............ |
| Egg | Chicago* | 5.06 | 8.17@ 8.27 | 8.14@ 8.20 | $9.50@ 10.00 | 8.03@ 8.28 | $9.50@ $10.00 | 8.03@ 8.28 |
| Stove | New York | 2.34 | 10.00@ 10.50 | 8.75@ 9.50 | ............ | 9.15@ 9.40 | ............ | 9.15@ 9.40 |
| Stove | Philadelphia | 2.39 | 9.85@ 10.25 | 9.15@ 9.50 | ............ | ............ | ............ | ............ |
| Stove | Chicago* | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@ 11.00 | 8.48@ 8.80 | 10.00@ 11.00 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 9.50@ 10.25 | 8.75@ 9.25 | ............ | 8.65@ 8.95 | ............ | 8.65@ 8.95 |
| Chestnut | Philadelphia | 2.39 | 9.65@ 10.00 | 9.15@ 9.25 | ............ | ............ | ............ | ............ |
| Chestnut | Chicago* | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@ 11.00 | 8.50@ 8.75 | 10.00@ 11.00 | 8.50@ 8.75 |
| Pea | New York | 2.22 | 5.25@ 5.50 | 5.50@ 6.00 | ............ | 5.00@ 6.25 | ............ | 5.00@ 6.25 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.35 | 5.75@ 6.00 | ............ | 5.00@ 6.25 | ............ | 5.00@ 6.25 |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.30@ 6.20 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 |
| Buckwheat No. 1 | New York | 2.22 | 2.25@ 2.75 | 3.00@ 3.15 | ............ | 2.50@ 2.60 | ............ | 2.50@ 2.60 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | ............ | 2.50@ 2.60 | ............ | **2.50@ 2.7** |
| Rice | New York | 2.22 | 1.80@ 2.00 | 2.00@ 2.25 | ............ | 2.25 | ............ | 2.25 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | ............ | 2.25 | ............ | 2.25 |
| Barley | New York | 2.22 | 1.25@ 1.50 | 1.50 | ............ | 2.25 | ............ | 2.25 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | ............ | 1.50 | ............ | 1.50 |
| Birdseye | New York | 2.22 | 1.35@ 1.60 | 1.60 | ............ | ............ | ............ | ............ |

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; decline in *italics*.



| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Oct. 19 | Oct. 12 | Oct. 5 | Oct. 20 |
| Index | 176 | 175 | 175 | 176 |
| Weighted average price | $2.13 | $2.11 | $2.11 | $2.12 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

district there is an improvement in railroad tonnage and domestic sizes are moving well. Steam is a little heavy. Mines here are getting four to five days a week.

The Standard field is having a hard time pulling through. Prices are low and demand is not good. Working time at mines that are working ranges from three to four days a week, with the usual exception, and railroad tonnage is light. No immediately bright prospects are in line for this district and there is still considerable discontent among the miners, who know that a lot of western Kentucky coal moves through their territory and is delivered at a much lower price than Illinois can hope to meet and that serious inroads have been made in the Standard market by strip mines in southern Illinois.

There is an improvement in the domestic situation at St. Louis. Middle grade coals are moving fairly well and high grades show some improvement. There is little activity in the movement of anthracite, coke and smokeless. Country domestic is picking up fairly well, but country steam is slow. Local carload steam is fairly good and wagonload shows considerable improvement. There is no change in prices.

### Kentucky Perks Up Some

A touch of cold weather early last week resulted in somewhat better demand for prepared sizes in Kentucky and helped to clean up some of the distress and "no bill" coal on tracks in the state. But a warm turn toward the end of the week caused a slump. Prices improved a trifle over the week, eastern Kentucky screenings having advanced until about $1.20 a ton is the low. Western Kentucky prepared also took a hitch to a high of $2 for 6-in. block.

Production has been a trifle weaker, resulting in smaller offerings of screenings, which continue in active demand. Operators still have a good deal of "no bills" on track, but with cold weather due are not trying to force the market too much by cutting prices.

The trade feels rather optimistic concerning the future, in spite of complaint about present movement and price, which has been largely due to very open weather so far. Kentucky mines ask $2.50@$2.75 for best 4-in. east Kentucky lump, with some special coals selling to the trade at $3. Two-inch lump, egg and nut prices are around $2@$2.25, some fine grade bringing $2.50; mine-run, $1.40@$1.65; screenings, $1.20@$1.35. Western Kentucky 6-in. is $1.75@$2; lump and egg, $1.50@$1.75; nut, $1.35@$1.50; mine-run, $1.10@$1.50; screenings, 90c.@$1.10.

Heavy rains over the state have given good boating stages for movement of coal, but have virtually drowned out some of the west Kentucky strip mines, production being curtailed.

### Normal Trade in Northwest

The coal trade at the Head of the Lakes is fairly normal. Colder weather has given an impetus to orders from retailers. Dock officials note an increase in the proportion of anthracite substitutes while shipments of hard-coal have been correspondingly cut down. Shipments from the docks continue in good volume, the gains being well distributed between commercial, industrial and domestic consumers.

The industrial outlook is promising and the trade figures on larger shipments to iron foundries and other plants over Minnesota. Loadings of both anthracite and bituminous coals at the docks for shipment to the Twin Cities continue to expand as a result of the revisions in freight rates on all-rail coal from Illinois, Indiana, Kentucky and Virginia made effective last spring. The docks in fact claim to be gradually regaining the trade they formerly held down there.

Thirty-four cargoes of bituminous were received by lake last week, compared with twenty-nine cargoes in the preceding week, and fourteen were reported en route.

Consumers show no disposition to fall into a panic over the anthracite strike. Many are switching to Pocahontas and other smokeless coals and demand for coke and briquets is gaining ground. Quotations are firm and unchanged in both bituminous and anthracite coals.

There seems to be a serious backwardness to the seasonal activity of the coal market in the Twin Cities. So far this fall, there has been but the customary demand for hard coal, and but a moderate demand for steam and other soft coals. Industrial demands have not picked up to the extent that they were counted upon to do. The price situation holds steady, because of the support from other districts, quite as much as from any help in this market. Southern Illinois lump is steady at $3.25; Indiana, $3@$3.25; central Illinois, $2.75@$3; western Kentucky, $2. Hocking and Youghiogheny generally hold at former figures.

The coal business in Milwaukee is brisk and seasonable, and an increase in the demand for all grades of coal would indicate that consumers are rapidly filling their bins. Pocahontas is scarce and there is almost no anthracite to be had. The last cargo of hard coal was received here more than a month ago. To Oct. 16 this season 488,234 tons of anthracite and 2,330,350 tons of bituminous have been received. In the corresponding period of 1924 623,461 tons of the former and 1,834,917 tons of the latter were received. Prices remain unchanged.

### All-Round Situation Better in Kansas

Demand for domestic sizes of Kansas coal remains strong in the Southwest and the screenings situation has improved in the last week. Screenings were beginning to pile up and the contract price of $2.35 a ton was being shaded by some operators on large contracts. The situation in Oklahoma and Arkansas remains about as it has been since Sept. 1, with buyers hesitant because of uncertain labor conditions.

Quite an improvement in demand for domestic coal took place in Colorado last week, due to cooler weather, which has speeded up production. Some mines are forced to operate on night shift to take care of the sudden demand for domestic lump and steam size. Nut continues to be a drug on the market. Anthracite mines are working full time, which is something they have never done heretofore. There has been no change in prices, the present level seeming likely to hold for the balance of the current year.

Due to weather conditions, the coal business in Utah is very "spotty." On the whole business is not as good as it ought to be, considering that few people ordered their winter supply of coal during the summer months this year. Lump coal is selling best, but no size is a drug on the market at this time. Coal for heating purposes is selling better. The car situation is no worse and it would seem that the serious shortage feared some weeks ago has been averted. There are few "no-bill" cars on the tracks now. Prices remain steady and the labor situation is all that could be desired.

### Smokeless Lively at Cincinnati

At Cincinnati smokeless egg sizings still hold the center of the stage. With added inquiries from the seaboard the asked price has gone 25c. a ton above lump, the range last week being steady at $4.75@$5 for egg and $4.50@$4.75 for lump. Practically all of the direct sales offices on Pocahontas say they are sold up for the rest of the month on sized coals and New River firms are pretty near in the same boat. Mine-run is steady and firmer and slack steady with very little to be had under $2. Trial orders for New England, following the inauguration of an all-rail rate, were another interesting feature of the low-volatile market.

Lake business still is getting a good deal of attention in the bituminous market, but hurrying consigned coal to the lakes proved costly for some concerns, as quite a bit of it got into distress and went away under the price of Cincinnati wholesalers. All records to the lakes were broken last week, according to the railway figures, which show 3,507 cars moved there, an increase of 357 cars—and this in a season where the tapering off process sometimes becomes violent.

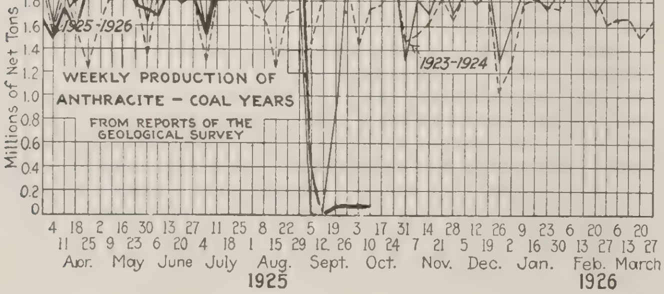
Demand for domestic sizings fluctuates with the weather. River business is back to normal with rains raising the stage. The sole menace now is the possibility of too many of the tributaries rushing in and bringing about a flood stage, which is almost as bad as no water at all.

The Columbus domestic trade is strictly a weather proposition. Retailers are fairly well stocked, but many are getting low on certain varieties and are gradually replenishing their reserves. Householders are coming into the market fairly well. Retail prices are fairly steady, smokeless grades selling at $8.25@$9; splints, $7.25@$7.75, and Ohio grades, from $6.25@$6.75 delivered. The desirable grades of Kentucky lump sell at the same levels as West Virginia splints. There is little free domestic coal on the market and as a result prices at the mines are fairly well maintained. The lake trade still holds the interest of shippers, however, providing an outlet for surplus domestic stocks. Dealers are making a good margin on their business as price cutting is not in evidence to any extent.

The steam trade is running in about the same channels as for two months, the bulk of orders being for current needs. Some contracting, generally to provide stocks up to April 1, is reported. Most of the larger consumers and many of the smaller users are covered by such agreements. Screenings are rather firm, due to the larger amount of small sizes being shipped to the head of the lakes.

Production in the southern Ohio field shows little change from the preceding week. The output in Pomeroy Bend is about 40 per cent of capacity, but in the Crooksville, Cambridge and Hocking Valley fields it is about 20 to 25 per cent of capacity.

In eastern Ohio market conditions and prices are practically unchanged as compared with a week ago. Production in eastern Ohio in the week ended Oct. 10 was the largest of the year. Three hundred thousand tons was produced, or 43 per cent of capacity, an increase over the preceding week of 10,000 tons, but a decrease under same week last year of 30,000 tons. Colder weather is stimulating domestic demand.



### Better Market Tone at Pittsburgh

The Pittsburgh district coal market had a slight increase in demand and a slight hardening in prices last week. The tone of the market is distinctly improved, but no little of the better sentiment is traceable to improvement in some West Virginia markets, expected to be reflected locally in due time.

Industrial and railroad conditions are much the same as formerly, except that steel mills in the Pittsburgh and valley districts are running somewhat heavier than two or three weeks ago. Some departments are at practically 100 per cent, and the average of mill operations all around in the two districts seems to be distinctly above 80 per cent.

Demand for domestic coal has not improved much, hardly reflecting the marked change in the weather in the past fortnight.

The Pittsburgh Coal Co.'s Midland No. 1 Mine, near Canonsburg, in the Panhandle section, just started, may be regarded as practically in the heart of the union district.

Some Connellsville coal is moving in the open market at $2 and slightly more by operators who have no coke ovens. The high price of coke attracts all coal that producers have facilities for coking.

Central Pennsylvania is now feeling the first reaction of the strike in the anthracite field as reflected in the production reports. Operators, generally, did not expect a material increase before Oct. 15, and some are finding themselves with more orders than they are able to fill promptly, but are fast overcoming this by increasing forces.

The soft-coal trade at Buffalo languishes, as soft coal, but it is doing all sorts of things trying to play the game as hard coal. With straight bituminous more complaints of no business and cut prices have come lately than in a long time. Slack moves slowest; nobody seems to want it and yet it keeps coming this way.

Quotations are weak at $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run and $1.25@$1.40 for slack; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump and $1.25@$1.60 for slack; $1.75@$2 for Allegheny Valley mine-run.

### New England Shows Lack of Interest

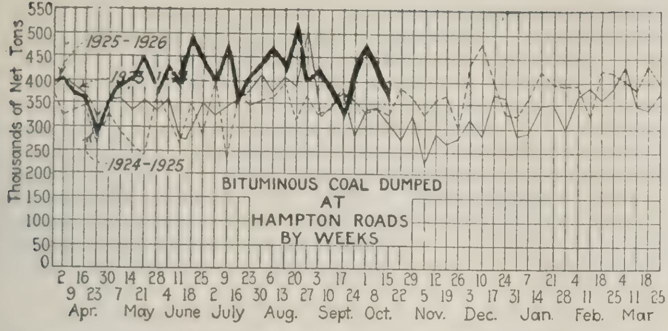
Further recessions in prices of smokeless coals have been characteristic in New England in the past week. Inquiry is light and no large buyers have shown interest in the current market. There is a general disposition to regard present quotations as not excessive and consumers will buy only from hand to mouth until there are more tangible indications of higher figures.

High-grade Pocahontas and New River continue to accumulate at Hampton Roads and in consequence the spot range has eased to $4.50@$4.75. Strictly No. 1 navy standard is being sold at $4.65 or so, but coals not so desirable are to be had at $4.50 and less. The $4.50 level means a net return of not over $1.90 per gross ton at the mines, and slack is being offered at $1.30@$1.40 per net ton, also at the mines. Movement coastwise is for the most part restricted to deliveries on contract and off shore there is little tonnage materializing.

On cars Boston and Providence, Pocahontas and New River are only in moderate request. For inland delivery prices hover around $6 per gross ton, with occasional instances of $6.10 and $5.90. On the part of retail dealers there is some call for screened smokeless coals, but in most cases the cargoes received carry so large a proportion of slack that no figure obtainable would make the practice at all profitable as a steady thing.

All-rail from Pennsylvania an active demand is developing for prepared sizes of the coals that are more favorably known. Part of this inquiry is in anticipation of probable retail demand when cold weather sets in, but it is plain that many householders are already taking low-volatile bituminous in place of anthracite. Several shippers have all the business now that can be delivered during the next there or four weeks and are expecting to realize higher prices when they again have coal available. Prices range up to $4 and $4.50 per net ton, f.o.b. mines.

Cargoes of Welsh anthracite continue to arrive from week



to week. Stocks of Pennsylvania hard coal are dwindling, but on the part of the public there seems no anxiety whatever.

### Movement Improves at New York

Better movement features the bituminous coal situation at New York. Prices show more strength in spots, but the general range continues as of last week. Some operators report better figures for the higher grades of coal. Industrial consumption has been sufficient to prevent overstocking and contract coal continues to move uninterruptedly. Screened bituminous coal gradually is coming into its own, some dealers displaying various grades, including coals from the Pocahontas and New River fields.

The Philadelphia market remains very quiet and all demands are quickly met. Meantime mining continues at the strong pace established some weeks back and of necessity some new business must be developed if the output is to be absorbed. Offerings on the spot market have been plentiful during the past week, and prices have been maintained but not without occasional evidence of softness. Those houses endeavoring to find a domestic market for soft coal are making progress, most sales being confined to low volatile coals of hard structure. Business at tide is unusually quiet and is practically confined to bunkering.

At last there is some real excitement in the Baltimore bituminous market as prices keep jumping on prepared sizes. The coke market also is doing a runaway stunt, and it would not be at all surprising to the trade generally to see a big upward swing soon in industrial coals other than prepared sizes. Surpluses are disappearing at tide and apparently the trade will soon be out of the long era of oversupply and under-prices. After a long lapse, the bringing of coals by steamer from Norfolk to this port has been resumed. Export movement has fallen flat, no shipment having been made since Oct. 5.

At Birmingham the demand for steam coal continues very good with no change of importance in market conditions from a week ago. Inquiry is fairly active in the open market and the aggregate of orders booked amounts to considerable tonnage. Industrial, utility, railroad and general demand calls for a record weekly production for the year. High-grade mine-run and washed coals have the best call, but the more inferior qualities are being moved with little delay. Byproduct coke ovens are running full, there being need for a large amount of furnace coke, while foundry and domestic sizes are finding a ready market.

A short spell of cool weather in the past week gave an impetus to the retail domestic market and dealers throughout this territory booked sufficient business to keep them busy for a week or so, but yards which had considerable stocks are still holding up on contract deliveries to a great extent. A large number of small orders on the mines for prompt shipment helped to relieve the situation to some extent. Quotations on steam and domestic grades are stable on the basis of schedules in effect for several weeks.

Production has improved materially during the past three months, the output for the week of Sept. 26, the last figures available, being 404,000 net tons. The total production to date is now only slightly under that for the corresponding period of last year.

### Hard-Coal Substitutes in Heavy Demand

A dearth of anthracite at New York has resulted in heavy demand for substitutes, especially coke. Retail dealers are carefully doling out their remaining supply of hard coal, knowing that it will be some time before they will be able to obtain further shipments. Some independent pea and buckwheat can be picked up in the harbor, but because of the prices asked retail dealers are not importunate. Quotation of $14.75 was heard for pea coal, alongside, but it was rejected by the prospective buyer.

Users of hard coal are advised by the State Coal Commission to use substitutes, and city officials, where there are anti-smoke ordinances, are to be asked to suspend such laws during the duration of the anthracite strike.

Retail prices in Greater New York range as high as $23.50 for domestic coals, though some dealers are taking care of their regular customers at the prices prevailing prior to the inauguration of the strike. Independent buckwheat was quoted at $3 to $3.50. Rice and barley are not being quoted generally.

Coke is in good demand. Large tonnages have been received in this market and retail dealers are finding a ready market for it. Manufacturers report heavy bookings. Quotations for Latrobe egg, stove and nut sizes range from $7.50 to $8 per ton at the ovens, with furnace coke quoted at $5.50@$6.50.

Philadelphia consumers remain calm, though shipments of pea by the companies who have it in storage are a little slower. As the strike wears along retailers are slowly turning to substitutes. Most shippers of the byproduct coke are out of the market, having more orders than they can ship. Sized bituminous also is finding a slightly better market. One of the big company shippers increased buckwheat to $2.75 a ton Oct. 15, an increase of 25c. since Oct. 1.

Demand at Baltimore continues rather light considering all circumstances. The public does not seem to be uneasy about the strike, in view of the many substitutes offered. There probably is sufficient anthracite in the yards of local dealers to take care of all demands to Dec. 1. Some dealers are apprehensive that if the public gets into the habit of using cheaper substitutes for anthracite they will be lost as buyers in the future.

The Buffalo public is getting pretty wide awake to the fact that no anthracite is coming from the mines and that there is no apparent effort to get the miners to go back to work. Some seem positive that the anthracite people are going to see consumers taking up new fuel that is cheaper, or at least handier and cleaner, and will never return to high-priced egg coal. Coke goes up $1 or so every time it is sampled. It used to sell as low as $9 at the curb, but now it is often more than $12.

### Domestic Coke Trade Active at Connellsville

Eastern interests, chiefly distributers of fuel for domestic consumption, became very active in the Connellsville coke market a little over a week ago, buying both run of oven blast furnace coke and regular crushed coke. Evidently there was sharp competition in the buying. Some buyers came to Pittsburgh and Uniontown, practically picking up all offerings. The market advanced about 50c. a day for several days, having previously been a trifle weak at $4 for furnace coke. Last Friday an Eastern representative was in Uniontown and is understood to have picked up all offerings of crushed coke at $8, getting about 50 carloads.

Blast furnaces have no occasion to buy coke at this time, being covered to the end of the year at old prices, but are much concerned as to what the situation will be for first-quarter deliveries. They are not disposed to quote on pig iron beyond this year, but there is inquiry and advanced prices will have to be quoted at a venture.

Foundry coke had no strength of its own, spot buying being quite limited, but production has simply decreased when there was so much better sale for 48-hour coke, and foundry coke could hardly be bought now at less than $7, the market ten days ago having been $4@$4.50.

Production by the merchant ovens has now advanced three-fifths of the way from the low level of last summer to the high level of early in the year, and even that did not tax the resources of the region in equipment or men. The main point is whether production can be increased further without labor unrest developing.

### Freight Car Loadings

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Oct. 3, 1925 | 1,112,463 | 174,317 |
| Previous week | 1,120,645 | 178,463 |
| Week ended Oct. 4, 1924 | 1,077,006 | 186,516 |

# Foreign Market And Export News

## Contracting in British Market Hampered By Uncertainty at Subsidy's End

The expected improvement in the Welsh coal trade has not yet materialized. General inquiry for coal appears to have improved a little but the chief difficulties of colliery owners are the enormous stocks at the pitheads and the failure to obtain day-to-day clearance of rolling stock. This means that on many days two-thirds of the pits are idle. A few contract inquiries are coming to hand, but the difficulty of arranging contracts over next year lies in the uncertainty as to what will happen when the subsidy comes to an end—in April. This is a problem both for the colliery owners and the buyers. Some little business has been arranged for delivery over the next few months. Small coals still constitute a big problem, as there are immense supplies and there is little demand even at the extremely low figures quoted.

At Newcastle-upon-Tyne prospects are unexpectedly good. It is evident that buyers abroad now recognize that it is futile to hold out for lower prices, since the economic limit had been reached. In fact the tendency of prices is now upward, and but for keen German competition values would be very much higher; as it is they are firmly held and traders regard the situation now as one which justifies an advance. In view of the steady demand for deliveries of gas coke up to December, prices are firm. Contract business is in fair evidence, but mainly for small quantities. Coal and coke shipments from the Tyne are improving a little, though they are still substantially below last year's figures.

Output by British collieries during the week ended Oct. 3, according to a special cable to *Coal Age*, totaled 4,620,000 gross tons, compared with 4,395,000 tons the week before.

### Domestic Trade and Prices Weak At Hampton Roads

Hampton Roads business shows little improvement, Western and New England trade having fallen off. Warm weather seems to have cut down buying to a considerable extent and the trade at tidewater is marking time. Some fair foreign shipments are reported, but bunker trade is barely holding its own and coastwise business is at a low ebb. Domestic business is below normal for the season and prices show a tendency to weaken.

### Belgian Trade on Upgrade

A slight improvement is to be noted in industrial coals in the Belgian market, the rise in sterling and French currencies, together with a new reduction in Belgian prices, for bituminous coals in particular, having caused a drop in importations of British and French coals. In addition demand from some industries is better. Imports of German and Dutch fuels, however, have not decreased.

For domestic fuels the demand continues excellent. Since they started rising, anthracite sorts have increased on an average about 20 fr. per ton for inland sales.

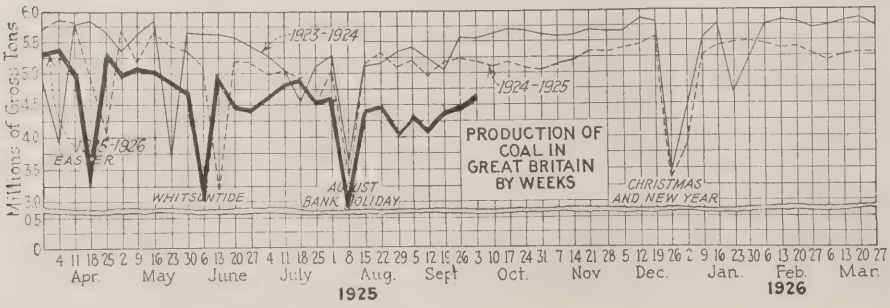
On shipments to France beginning Oct. 1 Belgian producers of domestic coals raised the prices of anthracite and half bituminous grades 5 to 10 fr.

### French House Coals More Active; Industrial Grades Quiet

In the French coal market industrial coals are quiet and domestic grades increasingly active. None of the output now seems to go to pithead stocks.

No agreement having been reached at the recent meeting at Douai between the mine owners and miners of the Nord and Pas-de-Calais on the fixation of the bounty for living costs, the matter was placed in the hands of the Minister of Public Works. On the government's promise to accord French collieries all necessary measures of protection, the companies agreed to raise the bounty from 20 to 40 per cent. Loire operators also have consented to raise the allowance to 40 per cent under certain conditions.

Arrears in the shipments of domestic coals are marked, due not only to the fact that demand exceeds supply but also to a scarcity of railway trucks and to difficulties in river and canal traffic. The prices of domestic coals from Belgian collieries having been advanced Oct. 1, French mines of the Nord and Pas-de-Calais raised theirs correspondingly.



### U. S. Fuel Imports in August

(In Gross Tons)

| | 1924 | 1925 |
|---|---|---|
| Anthracite | 437 | 6,079 |
| Bituminous | 27,216 | 41,824 |
| From: | | |
| Canada | 21,146 | 40,629 |
| Japan | ...... | 1,195 |
| Australia | 6,040 | ...... |
| Other countries | 30 | ...... |
| Coke | 5,852 | 12,614 |

### Export Clearances, Week Ended Oct. 17, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For British West Indies: | |
| Nor. Str. Sokendal, for Castries | 3,023 |
| For Danish West Indies: | |
| Br. Str. Trafalgar, for Curacao | 6,986 |
| For Cuba: | |
| Br. Str. Rouapark, for Cienfuegos | 2,030 |
| For Brazil: | |
| Br. Str. Watsness, for Pernambuco | 4,135 |
| For Jamaica: | |
| Swed. Str. Mongolia, for Kingston | 2,188 |
| For West Africa: | |
| Ital. Str. Nasco, for Dakar | 7,498 |
| For Bermuda: | |
| Amer. Schr. Frank A. Morey, for Hamilton | 808 |
| For Australia: | |
| Br. Str. City of Boston, for Melbourne | 481 |

### Hampton Roads Pier Situation

(Gross Tons)

| N. & W. Piers, Lamberts Pt.: | Oct. 8 | Oct. 15 |
|---|---|---|
| Cars on hand | 1,537 | 1,674 |
| Tons on hand | 94,851 | 105,423 |
| Tons dumped for week | 135,199 | 119,882 |
| Tonnage waiting | 5,000 | 10,000 |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 1,569 | 1,577 |
| Tons on hand | 123,200 | 125,050 |
| Tons dumped for week | 81,235 | 81,595 |
| Tonnage waiting | 6,000 | 7,513 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,539 | 2,873 |
| Tons on hand | 119,845 | 145,765 |
| Tons dumped for week | 162,431 | 115,686 |
| Tonnage waiting | 3,515 | 17,650 |

### Pier and Bunker Prices, Gross Tons

PIERS

| | Oct. 10 | Oct. 17* |
|---|---|---|
| Pool 1, New York | $5.35@$5.60 | $5.35@$5.60 |
| Pool 9, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 10, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 11, New York | 4.45@ 4.70 | 4.45@ 4.70 |
| Pool 9, Philadelphia | 4.85@ 5.05 | 4.85@ 5.05 |
| Pool 10, Philadelphia | 4.55@ 4.75 | 4.55@ 4.75 |
| Pool 11, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 1, Hamp. Roads | 5.00@ 5.15 | *5.00* |
| Pool 2, Hamp. Roads | 4.65@ 4.85 | 4.75 |
| Pools 5-6-7, Hamp. Rds. | 4.50 | 4.50 |

BUNKERS

| | Oct. 10 | Oct. 17* |
|---|---|---|
| Pool 1, New York | $5.60@$5.85 | $5.60@$5.85 |
| Pool 9, New York | 5.25@ 5.50 | 5.25@ 5.50 |
| Pool 10, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 11, New York | 4.70@ 4.95 | 4.70@ 4.95 |
| Pool 9, Philadelphia | 5.05@ 5.25 | 5.05@ 5.25 |
| Pool 10, Philadelphia | 4.75@ 4.85 | 4.75@ 4.85 |
| Pool 11, Philadelphia | 4.60@ 4.75 | 4.60@ 4.75 |
| Pool 1, Hamp. Roads | 5.00@ 5.15 | **5.10** |
| Pool 2, Hamp. Roads | 4.65@ 4.85 | **4.85** |
| Pools 5-6-7, Hamp. Rds. | 4.60 | 4.60 |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Oct. 10 | Oct. 17* |
|---|---|---|
| Admiralty, large | 23s.6d.@24s. | 23s.6d.@24s. |
| Steam smalls | 10s.@10s.3d. | **10s.3d.** |
| Newcastle: | | |
| Best steams | 15s.@16s.6d. | *15s.3d.@15s.6d.* |
| Best gas | 16s.6d. | **16s.6d.@16s.9d.** |
| Best bunkers | 14s.6d.@15s. | **15s.@16s.** |

* Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

The Erskine Ramsay Engineering Hall, located on the grounds of the Alabama Polytechnic Institute, Auburn, was dedicated on Oct. 10, the ceremonies being attended by a large number of engineers and technical men from throughout the South, many of whom were alumni of the school. The new hall is the largest and most modernly equipped building of its kind in the South and was erected at a cost of around $300,000. The building is named in honor of Erskine Ramsay, of Birmingham, noted mining engineer and capitalist, who launched the movement for the building with a subscription of $100,000. The principal address at the dedication ceremonies was delivered by Charles H. Markham, president of the Illinois Central R.R.

The County Coal Co., with head offices at Birmingham and mines near Grant's Mill, on a branch of the Central of Georgia Ry., has been reorganized and passed from the control of the Sossong interests of Pittsburgh, which developed the properties and have been operating the mine for several years. The new officials are: Mr. Pritchard, president; T. M. Nesbitt, vice-president; Thomas Bowron, secretary-treasurer.

The Semet-Solvay Co., with local offices and byproduct plant at Ensley, is understood to be considering the sinking of a slope on its properties in the Blue Creek field, where the company has extensive holdings of valuable coal properties. The company at present is getting its coal supply entirely for the operation of its large battery of byproduct ovens from outside sources.

The Black Diamond Coal Mining Co. has leased the properties of the Tennessee Coal, Iron & Railroad Co. in the Blue Creek field, where the Adger and Johns operations formerly were conducted by the latter, but which have been idle for a number of years. These properties carry a considerable tonnage of the Blue Creek seam. The Adger mine has been placed in operation and is now producing several hundred tons per day, which is to be increased materially. The Black Diamond company is building a new steel tipple at Johns, in which will be installed automatic car dumpers and other modern equipment for handling the output, and a Deister concentrating table will be provided for use in the preparation of the coal. Inside haulage will be taken care of by the use of electric motors. Camp houses will be rehabilitated for the use of employees and other necessary buildings will be provided. The Black Diamond company operates a number of mines in the district and also conducts a large sales agency for coal. C. E. Bissell is president; M. O. Travis, secretary and treasurer, and Carl McFarlin, general superintendent.

The Republic Iron & Steel Co. is erecting an emergency hospital and doctor's office building at its Sayreton mine, near Birmingham. The building is of tile and concrete construction and will be modernly equipped for the care of injured employees and the medical work of the camp.

F. J. Immler, formerly superintendent of the Flat Top Coal mines of the Sloss Sheffield Steel & Iron Co., has been transferred to Bessemer as superintendent of Sloss ore mines, succeeding C. E. Barrett, who died recently. Mr. Immler was succeeded at Flat Top by J. S. Chalmers.

The Barrett Company, of Fairfield, has placed in operation a battery of twenty-six ovens for the production of coke from pitch. These ovens have been under construction for some time.

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## CALIFORNIA

The three coal mines in Oak Run and Clover Creek, twenty miles east of Redding, have become sufficiently important to want electric power. A power line four miles long is being built to tap one of the trunk lines of the Pacific Gas & Electric Co.

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## COLORADO

H. Van Mater, receiver for the National Fuel Co., Denver, and one of the largest coal operators in the state, has been appointed a director of the Colorado and New Mexico Coal Operators Association to fill the vacancy created by death of L. A. Hayden.

Warning that any attempt to put into effect a 20 per cent reduction of miners' wages on Oct. 15 would result in prosecution for violation of the state industrial laws, was given Oct. 8 to H. H. Parker, of the Boulder Coal Mining Co., at Boulder, by William I. Reilly, chairman of the State Industrial Commission. Parker notified the commission by letter that such a reduction in wages would be made on Oct. 15, and Chairman Reilly pointed out that the state laws require a 30-day notice of any change in wages or working conditions to be sent to the commission before such change is put into effect.

The general store of the Colorado Supply Co. at Segundo, and its entire contents were destroyed by a fire at 1 a.m. Oct. 12. The loss is estimated at $30,000. The fire is believed to have been started by incendiaries, and an investigation is under way. There have been a dozen fires in the various Colorado Fuel & Iron Co.'s camps in southern Colorado during the past two years, all of which are believed to have been of incendiary origin. The Colorado Supply Co. is an auxiliary of the Colorado Fuel & Iron Co.

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## ILLINOIS

Zeigler Mine No. 2, of the Bell & Zoller Coal Co., at Zeigler hoisted 7,447 tons of coal in seven hours and forty-three minutes on Sept. 22. This beats the mine's previous record of 7,251 tons hoisted, made Feb. 21, 1925.

Negotiations with six major mine operators in the Fifth and Ninth Illinois districts with a view to merging their interests in a $30,000,000 corporation headed by Herbert E. Bell, of Chicago, resulted in unfavorable replies, according to an announcement by Henry R. Platt, counsel for Mr. Bell.

The St. Clair County Board of Supervisors has ordered all abandoned coal mines closed, the shafts filled with earth and then securely fenced to prevent accidents. A recent inspection tour conducted by Supervisors C. D. Schafer, O'Fallon; Hugh Bevirt, Caseyville, and William French, of Lenzburg, revealed six open shafts in O'Fallon and Lebanon townships. In a few instances the shafts were not even protected by a fence.

The B. F. Berry Coal Co.'s mines at Granville, which have been idle for two years, were sealed up Oct. 8. A concrete layer has been spread across the shaft mouth. Many of the miners who formerly lived in Granville have moved away, several business houses have closed and the town has almost become deserted.

Announcement recently was made that Dr. G. H. Cady, head of the department of geology of the University of Arkansas, Fayetteville, Ark., will return to the staff of the Illinois Geological Survey Jan. 1, 1926, to serve as senior geologist, in charge of coal studies, to succeed H. E. Culver, who has accepted the position as head of the department of geology at Washington State College, Pullman, Wash. Dr. Cady was a member of the Illinois Geological Survey for nine years, leaving in 1919 to undertake investigations in China for the Yunnan Ming Hsing Mining Co. In 1920 he returned to this country and became head of the department of geology at the University of Arkansas. He has the distinction of preparing more bulletins for the Illinois Geological Survey than any other author, including reports of several of the coal districts of Illinois. Upon his return he will undertake the writing of a comprehensive volume on the coal beds of Illinois.

Diminished coal traffic is blamed for the smaller September earnings of the Chicago & Alton R.R., announces H. L. Stutz, assistant to the receivers of the company. The railway operating income of September, 1924, was $524,709, but will be lower for September last, Mr. Stutz said. The outlook for traffic, with the exception of the coal mining district, he added, was good.

## INDIANA

The Linton Gas & Coke Co., at Linton, will soon begin the manufacture of coke on a more extensive scale. W. H. O'Brien of the Sterling-Midland Coal Co., of Chicago, has leased the gas and coke plant and has started operations. The capacity will be increased to fifty tons of coke daily, together with all byproducts, and the output will be further increased later. The Linton Gas Co.'s business will not be affected. This company takes over from O'Brien all gas manufactured.

## IOWA

The Arbogast mine, Numa, opened Oct. 2 with fifty-nine miners. The mine is working with a smaller force than in years past due to the installation of new machinery.

## KANSAS

With five mines, employing a total of 500 men, on strike with the approval of the executive board of District 14, United Mine Workers, John L. Lewis, international president of the union, on Oct. 7 named a commission of three men, J. X. Cochran, of Iowa; Andrew Steele, of Missouri, and D. H. Watkins, of Iowa, to make an investigation. The strike resulted from the miners' contention that they are now required to pay the operators 70c. for dynamite fuse instead of 40c., the price that had prevailed since 1923. Mines affected are Jackson-Walker No. 42, Clemens Nos. 17 and 18, Western No. 21 and Mayer No. 7. The present contract provides no specific charge for powder and most companies through the Southwest have made no changes in their charges since the war.

A campaign to organize chapters of the Joseph A. Holmes Safety Association in the Kansas-Missouri coal mining district was launched at a meeting held in Pittsburg the night of Oct. 12. J. J. Forbes of Pittsburgh, Pa., chief engineer of the safety extension service of the U. S. Bureau of Mines, spoke. District officials of the miners' union, representatives of the operators and members of the Kansas State Teachers College, of Pittsburg, are co-operating in pushing the movement. Simultaneously the safety movement is being promoted from another angle, Clyde Sheridan and Alex Weir being in the district with car No. 6 of the Bureau of Mines with the announced purpose of staying in the Kansas field until every miner has been given an opportunity to receive training in mine rescue and first aid.

**Physician's Bungalow at an Alabama Mine**

The company physician comes into more intimate contact with the people of any community than any other individual. If he is the right kind of man he merits and receives the full confidence of all those with whom he comes in touch. This picture shows the neat, clean, "homey" dwelling that the Tennessee Coal, Iron & R.R. Co. has provided for the company doctor at its Edgewater Mine.

Night classes for miners in mining subjects are being organized throughout the southeastern Kansas field under direction of the extension division of the Pittsburgh Kansas State Teachers' College. The subjects being taught are mine gases, mine ventilation, mine timbering and safety lamps. Miners are displaying interest in the work, and teachers are having no difficulty filling their classes.

The Western Coal & Mining Co. began sinking the shaft for its mine No. 22, near Arma on Oct. 15. The coal is at a depth of 250 ft. It is predicted that when this mine is fully developed it will be the largest in the Kansas field. Coal was reached recently with the shaft in the Western's mine No. 23, near Minden, Mo. The main and air shafts will soon be connected, a tipple erected and the mine put on a tonnage production basis.

## KENTUCKY

Ray L. Phillips, Ray B. Moss and others have purchased the property of the White Star Coal Co., near Pineville, from the American Light & Traction Co., and will reopen and operate the mines.

The Old Hickory Coal Co., Prestonsburg, a new concern, formed by Julia May, A. J. May, A. J. May, Jr., and others, has arranged to start a new development in the Beaver Creek coal field, where leases have been taken on some good coal acreage. The company has been incorporated with a capital of $25,000.

The Dawson Daylight Coal Co., Louisville and Dawson, is completing a new drift mine to operate in connection with its strip mine, having three openings. Coal will start moving from this mine soon and will be loaded over the 5,000-ton tipple used in strip mining production. Another drift mine is being opened and will start loading in about sixty days.

## MINNESOTA

Henry Ford's Kentucky coal is now being handled in the Duluth market by a regular dealer, in line with the policy adopted by the Fordson Coal Co. some time ago. The Ford interests are counting upon a heavier tonnage of their coal being handled this season, over the Superior dock at Duluth, under lease to them.

At a meeting in behalf of the barge line project for the Upper Mississippi River, held in Minneapolis last week, it was stated that a 1,600-ton bargeload of coal could be brought from southern Illinois to the Twin Cities even under temporary operation at a saving of $1.30 a ton over the present all-rail freight rates. If facilities were made to cover at 2,400-ton load the saving could be made $2 a ton.

## MISSOURI

The coal mine at Bucklin, which had been idle for two years, has resumed operations on account of the increased demand for coal. The output at the mine is about one carload per day.

The Missouri State Penal Board has entered into a contract to operate inactive coal mines near Holt's Summit, Callaway County, with convict labor. The contract was executed by Lawson Price, of Jefferson City, trustee for the heirs of the Thomas B. Price and L. C. Lohman estates. The board agreed to pay a royalty of 15c. a ton for coal mined. It is hoped that sufficient coal can be mined to provide the 23,000 tons needed annually to supply the penitentiary, Bots Reformatory at Boonville and the industrial school for girls at Chillicothe and Tipton. Dr. Cortez P. Enloe, Director of Penal Institutions, estimates that the state can save $1,500 a month on its coal bills by producing its own coal with convicts.

## OHIO

Union miners, who had been on a strike at the five mines of the Ohio Collieries Co., near Athens, for three weeks, returned to work Oct. 13, pending a settlement of the difficulties. The men went out because the company refused permission to have miners at other operations in the neighborhood of the mines share the work of the regular miners. As far as loaders and the ordinary miners were concerned permission was given but when it came to drivers, track men and engineers the company desired that the same men remain on the jobs. About 1,800 miners were called out on the strike and the loss in wages has been heavy. The men went back on the understanding that the company would have its way in the matter of employment.

Striking union miners at the plant of the Brocalsia Chemical Co., at Syracuse, have been ordered back to work by union officials. The men struck because one of their number had been discharged.

Officials of the Ohio organization of the United Mine Workers have ordered 35 miners who walked out of the Syracuse mine, near Gallipolis, back to work. The walkout was caused by the company fining a miner for violation of rules.

Dumpings at the Toledo docks of the Hocking Valley Ry. from Oct. 1 to Oct. 14 inclusive amounted to 8,030 cars or 474,393 tons. Up to Oct. 14 the total dumpings for the year were 117,659 cars, or 6,694,379 tons. This is almost 1,500,000 more than last year up to that date, when the dumpings were 98,408 cars, or 5,370,523 tons. Activity is marked also at the other Toledo docks.

President Heywood, of Toledo; Vice-President G. H. Merriweather, of Chicago; R. B. Stirek, secretary and treasurer, Chicago, and R. A. Cochran, of Washington, commissioner of the American Wholesale Coal Association, were the guests of the Cincinnati members at a dinner held at the Chamber of Commerce, Oct. 9. Commissioner Cochran predicted that the hard-coal strike would be dumped in the lap of Congress before the next session was well under way. He said, also, that a survey showed that a large proportion of the legislators were determined to act on some sort of legislation that would prevent further upheavals in the industry.

Earnings of 499 miners employed in the four mines of the Pittsburgh Coal Co. in the Pomeroy for the last two weeks in September were $31,933.34, or an average of $72.58 for each man employed at the operations. These mines have been operated under the 1917 scale for the past few months and are loading about 8,000 tons of coal weekly.

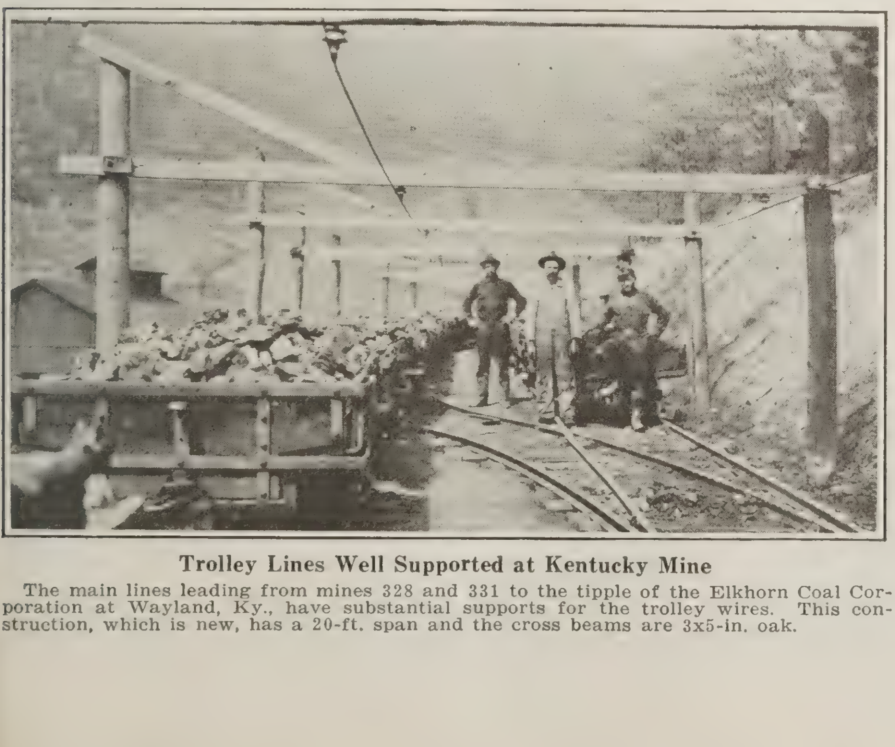
## OKLAHOMA

Following examination of fifteen witnesses for the plaintiff coal operators, who are asking injunctions to restrain miners in the Henryetta and McAlester fields from alleged interference with the operation of mines with non-union labor, Federal Judge R. L. Williams resumed the hearing Oct. 17. It was expected to require about three more days to complete testimony and it was expected that when court adjourned at McAlester it would convene the following Saturday at Okmulgee.

## PENNSYLVANIA

A. P. Cameron, who has been general manager of the mines of the Westmoreland Coal Co., with offices at Irwin, Westmoreland County, for many years, was elected vice-president in charge of operations at the regular monthly meeting of the board of directors on Oct. 14.

Railroads report that 75 mines operating in the greater Pittsburgh district produced in the week ended Oct. 10 a total of 334,886 tons of coal. This compares with 328,722 tons in the preceding week. Included in this total, according to the report to the Pittsburgh Coal Producers' Association, were the member mines which produced a total of 71,805 tons, or 11.8 per cent of capacity. This compared with 12 per cent in the preceding week and 42.4 per cent in the same week last year.



**Trolley Lines Well Supported at Kentucky Mine**

The main lines leading from mines 328 and 331 to the tipple of the Elkhorn Coal Corporation at Wayland, Ky., have substantial supports for the trolley wires. This construction, which is new, has a 20-ft. span and the cross beams are 3x5-in. oak.

After over 24 years' service as a mine inspector, Joseph Williams, of Altoona, retired from the service on Oct. 1. His territory was the Tenth bituminous district, embracing Blair and a portion of Cambria county. He came from Wales to America at the age of 25 and went to work in the mines in Jefferson County, later going to Cambria County, being employed at Vintondale when he received the state appointment. Upon a recent visit to Altoona, Governor Gifford Pinchot took occasion to highly commend Mr. Williams upon his long and faithful service to the state and to the coal mining industry. His place has not been filled. An examination was held in June for applicants for the place and there is a long list for the Governor's selection.

Announcement was made last week of the purchase by the Lehigh Valley Coal Co. of the coal tracts owned by the Stevens Coal Co. in Exeter borough, Luzerne County, near Pittston. The Stevens company suspended mining some years ago. The coal lands, though not extensive, are considered valuable. The new owners will start at once to remove the water from the abandoned workings in order to have the mine ready for resumption of production following the suspension. The coal mined will be carried underground to a nearby Lehigh Valley company breaker.

The Corrado Coal & Coke Co. announces the resumption of 186 coke ovens at Fort Hill, Raineytown and Clarissa plants. The Peerless Coke Co. started 36 ovens at Alverton and the Southern Connellsville Coke Co. started 50 at Cheat Haven.

## WEST VIRGINIA

On Oct. 15 the West Virginia Coal & Coke Co. resumed operations at its Coalton mine, in Randolph County, which had been idle for some time. One of the battery of coke ovens long in idleness also was put in blast.

M. L. Garvey, president of the New River Operators Association, with headquarters at Mt. Hope, was injured in an automobile accident Oct. 10 on the Midland trail while on his way to White Sulphur Springs. Mr. Garvey also is president of the Maryland New River Coal Co., operating at Winona, in Fayette County.

There is to be no increase in the wage scale for miners in the Williamson field of West Virginia for the time being. That was decided at a meeting of the Williamson Coal Operators Association held on Oct. 7, when the question was brought up. The banquet and meeting was attended by 150 coal operators who reported increasing activity in the field. Figures made public show that 95 per cent of the mines in the field are working at capacity.

A coroner's jury investigating the death of two miners at the No. 2 mine of the Lake Superior Coal Co., four miles from Welch, on Oct. 3, found in a verdict rendered on Oct. 6 that gas, probably ignited by an arc from the connection of a cable "nip" and trolley wire, caused the explosion. The inquest was conducted under the direction of R. M. Lambie, chief of the Department of Mines. The explosion was local in character and the mine was only slightly damaged. Operations were resumed on Oct. 7.

The Bethlehem Mines Corporation announced on Oct. 9 that Norman A. Emslie has been appointed superintendent of the Marion Division; Charles F. Welty, chief mine inspector, has been named superintendent of Barrackville mine, No. 41; G. H. Thorn made chief engineer of Marion Division in place of Mr. Emslie, and C. R. Bissell, chief engineer of the Preston division.

Due to accumulated coal loads an embargo was placed on Baltimore & Ohio R.R. coal shipments to the lake docks at Fairport, Ohio, last week. The embargo will continue until further notice, according to the railroad officials. Lake shipments continue to Lorain, however, but this port also is likely to be embargoed any time, it is feared.

Four night classes for miners employed in the mining industry recently were organized in McDowell County under the asupices of the extension department of the College of Mining of West Virginia University. A fifth class, at Gary, is already scheduled with an enrollment of 33 men. The classes so far organized show Welch with 15 members, Twin branch with 15, Kimball with 12 and Coalwood with 24. A mining class has been started at Mt. Hope, in Fayette County, under the same direction, as well as at Williamson, Montgomery, Logan and Wheeling.

Announcement of the incorporation of the Logan Block Coal Co., with an authorized capital of $125,000 was made at Huntington Oct. 5 by the incorporators. The company is to operate in Logan County, on mining property formerly owned by another company. Incorporators are A. J. Dalton, J. A. Kelly, C. B. Brown, S. M. Sowder and E. L. Hogsett, all of Huntington. A. J. Dalton was for a number of years president and general manager of the Main Island Creek Coal Co. and J. A. Kelly was vice-president of the same company. The Main Island Creek mines are now owned by the West Virginia Coal & Coke Co.

### CANADA

The International Coal & Coke Co., Ltd., Coleman, Alta., has given a contract for a pneumatic coal separating plant and tipple to the Manitoba Bridge & Iron Works, Ltd., Winnipeg. The tipple will be equipped with a balanced Marcus screen and the separating plant will have three type SJ 60-84 American pneumatic coal separators to treat sizes from 3 in. to ⅜ in. and three type Y to treat sizes up to ⅜ in. The separators will be manufactured in Canada for the American Coal Cleaning Corp., Welch, W. Va. The screening will be done by "Hum-mer" screens. The separating plant will have a capacity of 200 tons per hour.

## Traffic

### State Commission Lacks Power To Award Reparation

The Kansas Public Service Commission can simply pass on the reasonableness of intrastate freight rates and is without power to award reparation if exorbitant rates have been collected, the commission announced in Topeka, Oct. 14. In refusing the Western Shale Products Co.'s petition for reparation on freight paid on coal shipped from Arcadia, Kan., to its plant in Fort Scott, Kan., for a 3-year period ending May, 1925, the commission said the rates were too high, as evidenced by the fact that they have been reduced, but that it was without authority to make an order allowing reparation for alleged overcharges.

Approval has been given by the New York Public Service Commission of the cancellation of commodity rates of the Erie R.R. on bituminous coal and coke, carloads, minimum weight 40,000 lb., except when contents of car weigh less than minimum the car must be examined by weighmaster and if loaded to full carrying capacity shipment will be billed at actual weight, from Corning to local stations, and the restoration of mileage rates; effective Oct. 29. Also the cancellation of commodity rates on coal and coke on carload shipments of the Erie R.R. from Elmira to local stations and restoration of mileage rates; effective Oct. 28.

The Lehigh Valley R.R., with the approval of the New York Public Service Commission, has cancelled the carload commodity rate of $1.76 per net ton on coke from Geneva to Lockport (on the Erie) and restored the combination rate; effective Nov. 3, 1925.

Freight rates on bituminous coal from points in southern Illinois to points in southeastern Missouri and northeastern Arkansas are not unreasonable in the opinion of the Interstate Commerce Commission examiner who has considered a complaint from the Scott County Milling Co. He recommends that the complaint be dismissed.

## Association Activities

At the annual meeting of the board of governors of the **Alabama Mining Institute** held Oct. 13, Frank Nelson, Jr., was re-elected president, and Charles A. Moffett, president of the Gulf States Steel Co., was elected to the vice-presidency, succeeding George F. Peter. Mr. Peter is a member of the new board of governors. James L. Davidson was again named as secretary, a position he has filled with distinction for several terms and under whose administration the Institute has greatly extended its usefulness in the compilation of statistical records and the dissemination of information of much benefit to the members of the organization. H. E. Mills, assistant secretary and statistician, has been connected with the Institute for a long while.

## Coming Meetings

**American Iron and Steel Institute.** Twenty-eighth meeting, Oct. 23, at Hotel Commodore, New York City. Secretary, Howard H. Cook, 40 Rector St., New York City.

**National Association of Manufacturers of the United States of America.** Thirtieth annual convention, Oct. 26-28, Hotel Statler, St. Louis, Mo. Noel Sargent, secretary to Fuel Supply Committee, 50 Church St., New York City.

**American Society for Testing Materials.** Committee meetings, Oct. 27-29, Hotel Cleveland, Cleveland, Ohio. Coal and Coke Committee at 2 p.m., Oct. 28; A. C. Fieldner, chairman.

**Canadian Institute of Mining and Metallurgy.** Annual western meeting, Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**Illinois Mining Institute.** Fall meeting, Nov. 6 and 7 at West Frankfort, Ill. Secretary, Frank F. Tirre, St. Louis, Mo.

**Harlan County Coal Operators' Association.** Annual meeting, Nov. 18, at Harlan, Ky. Secretary, E. R. Clayton, Harlan, Ky.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering.** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

## Obituary

**Joseph H. Bartley,** 44 years old, mining engineer for the Elmgrove Mining Co., Elmgrove, W. Va., and formerly connected with the McBride Engineering Co., of Pittsburgh, died Oct. 11 in Philadelphia. He resided in Pittsburgh until seven years ago, when he moved to Elmgrove. He leaves his wife, two sons and one daughter.

**W. E. Turkington,** 73 years old, a retired coal operator of Cherokee, Kan., was killed when a passenger train struck the sedan in which he was driving in Pittsburg on the afternoon of Oct. 13. Mr. Turkington was a resident of the Pittsburg district for more than half a century. He was active in coal development in the early days when the name "Cherokee coal" won a standing in the market of the Southwest which still retains value as a trade title. He retired as an operator several years ago and lived on a small farm on the outskirts of Cherokee.

**Henry E. Kinloch,** who retired on Jan. 1, 1925, as general manager of the Valley Camp Coal Co., died Oct. 14 at his home in Parnassus, Pa., following a long illness. Mr. Kinloch was well-known in the coal industry in the Pittsburgh district. Starting in the mines of England when a boy, he migrated to America after the death of his mother, and went to work in the pits at Roscoe, Pa. Twenty-five years ago he became general manager of the Crescent Coal Co., at Snowden, and twelve years ago became general manager of the Valley Camp company. He prided himself that no strike ever occurred at a mine of which he had charge. He leaves a widow.

## New Companies

**The Black Diamond Coal Co.,** Clarinda, Ia., was incorporated Sept. 23, with capital of $50,000, to engage in coal mining and to develop coal mining lands. The officers of the company are as follows: E. D. Morris, president; L. V. Harbour, vice-president and general manager; Samuel Barron, secretary; Earl Richardson, treasurer.

**The Quality Coal Co.** has been incorporated in Knoxville, Tenn., by James C. Walker, J. W. Chamberlain, 136 Hiwassee St., and others.

**The Canon Quality Coal Mining Co.** has been chartered in Canon City, Colo., with a capital stock of $125,000, by D. J. Madone, J. Madone and others.

**The Stigler Coal Co.** has been incorporated in Muskogee, Okla., with a capital stock of $250,000, by W. B. Badger, G. F. Gaffney, of Henryetta, and others.

# COAL AGE

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Problems of the Coal-Mining Industry

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## Supposings

UNDER A THREAT to start municipal coal yards, it is said, the retailers of New York have consented to lay in a supply of soft coal, despite all anticipated danger that the strike might be settled and the coal left on their hands, a consummation not immediately to be hoped or to be feared.

Now supposing these retailers had been mine workers—they would have made the municipal authorities afraid of executing any such move by sundry burnings and bombings, shootings and slayings,—and then they would not have had to bow to coercion.

But these are mere "supposings." They serve the purpose of showing how amenable business is to pressure and how difficult it is to coerce labor. The retailers, facing possibilities of a real loss, have done their duty and have agreed to lay in soft coal. The public will please remember that it must see that this action is not accompanied by loss. It should not leave coal on the retailers' hands after the suspension is over. It seems likely, however, that if the soft coal is used for a few months or more there will be no difficulty in getting rid of a surplus, for some, perhaps many, will be permanently wedded to the new fuel.

## Apprenticeship as Proof of Skill

A CERTAIN New York paper says, "Hard coal mining is a skilled trade. Pennsylvania laws specify a certain length of apprenticeship before the miner can be licensed to dig coal." Because this law perpetuates this conception is one reason among many for its abolishment. Hard coal mining is not a skilled trade. For many years men fresh from European farms who knew no English and had no preliminary training went into the mines and did well from the start.

A little preliminary training of say a day's duration and a little knowledge of English is what is needed and not the licensing system which is a relic of the ancient system of apprenticeship which had no excuse except where a real art had to be acquired. All that is learned from the miner with whom the laborer works could be acquired in a day. We do not say, of course, that what is learned is all that a miner should know. Somewhat more than a day, indeed, might be given to that instruction.

In some cases the miner's advice and instruction when given is unfortunate and misleading. Many bad practices are advocated and even urged on the neophyte. A day's instruction by a safety inspector would be far more efficient. The relation of miner and mine laborer is largely a case of privilege, the laws of Pennsylvania being used to keep one man subservient to another.

It has been well said that the work of the metal miner is more expert than that of the anthracite miner. That is frequently though not universally true. Yet in so far as it is true, it is interesting to note that no one has as yet advocated the licensing of metal miners.

## When Winter Comes

A WELL TIMED WARNING has been sent out by Joseph J. Walsh, the Secretary of Mines, of Pennsylvania, to all bituminous coal operators warning against the dangers of the winter, calling for the lavish use of water or rock dust in all dry mines throughout the cold weather, and bringing to the attention of operators the fact that "thousands of gallons of water are each day carried in the air current from a single mine."

Strong effort should be made to prevent the recurrence of mine explosions during the coming winter. This is not a matter to be regarded as purely personal. Each operator has a large interest in the safety of other mines than his own. The reputation of one operating concern reflects honor or discredit on all the others in the same business. Safety is a matter the coal industry cannot ignore.

The public forgets that the coal man probably has done more than any other industrialist to promote safety, but it wrongly believes that coal mining is the most hazardous of occupations and blames the operator in part for that fact. Nothing will do more to make treating with the public easy than to be able to show that the interest of the operator in safety is making the mines safer year by year.

The action of the National Coal Association in forming a safety committee and its activity in interesting the membership in safety work is one of the gratifying signs of the times. Operators everywhere should stage safety. A definite propaganda should be started to that end. In fact not only the National Coal Association but every local producers' association and every local technical institute should have a safety committee and busily promote safety.

## Bettering Ventilation

AS MINES EXTEND and the passages become longer the problem of reducing the air resistance becomes insistent, but in many cases a little patient effort at improvement will make it possible to fit conditions to the existing fan.

Thus when swags have been encountered and water gathers, the roof rock should be brushed so as to fill the space occupied by water, thus leaving room in which the air can travel. In general, also, a little shooting that will result in an even and uniform airway will be found advisable. Especially should care be taken in places where the larger volumes of air have to circulate, such as between the fan and the first or second splits. At such places every effort should be made to provide for large volume, smooth walls and rounded corners.

A little projected concrete on the ribs and roof will aid in preventing the formation of wasteful eddy currents and if this coat is made strong enough to make timbering unnecessary or to blank the spaces between timbers the gain will be considerable. The importance of all work should be rated on the volume of air to be carried per lineal foot of perimeter. Where this ratio is large, smoothness and straightness of the airway is imperative.

At overcasts the fallen rock may be so rearranged as to aid the current of air in sweeping gently up to the overcast and gently down on the other side. At best such places are points of resisted flow even though in construction a proper talus has been built on both sides of the roadway. This talus can scarcely be made too long and, if rock falls make possible its extension on either side, advantage should be taken of that.

There are two ways of amending ventilation, in the equipment and in the mine. The opportunities in the latter are often overlooked. Sometimes the fact that airways badly laid out, swags undrained and passages cluttered with rock reflect on the management causes the mine officials to favor new fans. The question should be determined on its merits, but not without a careful inquiry into the real conditions and the possibility of ultimate saving, remembering always that more air without more area means more power consumed by the fan.

## Service Pays

SOME YEARS AGO certain street-car companies purchased equipment with furnishings as elaborate as are now found in our most luxurious buses. However, some street-car magnates thought that it was not well to pamper the public by such innovations They might have to scrap a lot of other valuable equipment and buy in its place elaborate street cars that would be more costly and perhaps less economical of space and weight. Thus reasoning, the expensive equipment was shipped to South American street railroads which could be allowed to indulge in luxuries without harm to the American corporations.

In justice to the street-car companies it should be said that they were for a long time quite generally kept to old standards of price and could hardly be expected to adopt new standards of practice under those circumstances, and that the cushions are not so necessary in street cars on a track as in buses on an uneven road. Furthermore cushions are not durable, are readily cut and insanitary.

But, be these reasons of the street-car magnates valid or not, the buses profit by the hard seats and dingy coaches that the street railroads of the United States have provided for their patrons, and now the tendency is to try to win back the public to the street cars by making them just as seductively comfortable and alluring as the buses. What has all this, however, to do with coal? Just this: The anthracite region has been trying to prevent the consumer from being spoiled. He had got accustomed to slate and bone in his coal. He was complaining, but he had shown signs of convincing himself that anthracite would always be that way, and as the industry was not actively competitive it did nothing to improve its practices. But now oil comes, and coke and bituminous coal and even gas, and the operator is not so sure.

Perhaps he has erred as the street car industry did when it allowed the bus to become synonymous with pleasing, fresh paint, comfortable leather cushions and clean windows. Perhaps a better preparation might have preserved a market that seems on the point of leaving the anthracite industry. Perhaps, after all, the public would feel a little more kindly and a little less ready to run for substitutes if the service of anthracite had been a little more satisfactory.

An industry rarely really awakens till it is too late. The sleeper seldom ends his doze just at the psychological moment.

Cleaner, better-sized, coal is one of the means to win back a trade that now seems likely to be lost, but unfortunately the standards have been set low, and the industry cannot yet realize that these standards should be improved, if not as a matter of regard for the consumer, at least as a means of retaining control of a market that is fast being weaned and driven away.

When the mines start once again, each individual operator can elevate his standards. That would help a little, but, if the anthracite producers really desire to regain what they have lost and retain what they now have, they must go farther. They must see that the public knows of their good works. They must encourage the retail distributors to hold them to strict accountability for the quality of their preparation. In that way they can protect the reputable majority and make more stony the path of the dishonest retail fringe that has regard for neither the industry nor the public and that blandly mixes a car of fireproof coal with a car of high-grade fuel and offers it to the public as standard quality.

The industry should fight the indiscriminate mixing of coal as energetically as the oil producing companies are fighting the selling of an inferior article at the stations where their gasoline is vended. Perhaps, as has often been suggested, certification of all anthracite coal by an independent authority would be a cure for the present unfortunate situation.

## Taking the Long View

NO INDUSTRY, especially that of producing and marketing coal can safely take a short view of its responsibilities. If the future is to be fortunate, its problems must be foreseen. We must earn a good horoscope if we are going to enjoy it.

Unfortunately, too many regard only the present. If they can attain an immediate end they will take the short way to accomplish it and sometimes they are not too scrupulous as to what methods they adopt.

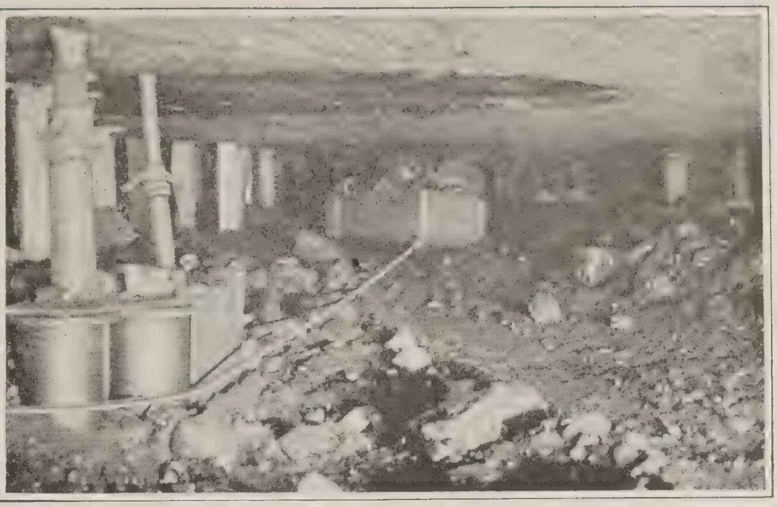
A certain degree of success by such evil methods is often attained. The miners terrorize a region and obtain advantages, only to find, after awhile, that "hard-boiled" operators alone remain in the field to do business. The more humanitarian and kindly mine owners sell out and go to other fields or change their manner of approach, and the hard or hardened men remain to make both mining and operating in the region difficult.

Nor is it different with the "hard-boiled" operator. He gets his way for a while. But quietly his best men leave and only those whom no one else will have remain. He has to take the leavings of other and better men's camps. He saves money on houses, fences, sidewalks, roads, bathhouses and safety to lose in personnel an even greater sum and to raise up difficulties that will plague him for many years.

The past is part of the present and a part also of the future. There is that in history and annals that never seems to die. For this reason, look ahead! If you wish a fortunate future in your industry and in your plant remember that you face in the present a summation of the whole past.

# Scraper Loaders Cut Cost in Two Hazard Mines

## Do Well in Thin Coal and Dipping Seams so Operators Try V Faces, Wide Rooms and Blocks



**By Alphonse F. Brosky**
Assistant Editor, *Coal Age*,
Pittsburgh, Pa.

TWO MINING companies in southeastern Kentucky are proving that in thin beds of clean coal the scraper loader fitted to a system of rather long faces produces a considerably larger output per manshift than is obtained by hand loading in conventional systems. They are demonstrating that a scraper loader will produce coal at least as cheaply from, say, a 30-in. bed as will hand loaders from a 42-in. bed, other conditions being equal.

These comparisons, which are actual, have been made without considering the indirect savings in such overhead cost items as housing facilities, track, wiring, etc., attributable to successful loader operation by reason of higher tonnages per man and greater concentration of mining. The inference is not intended that the scraper loader is adaptable only to thin beds for it has its applications to thick measures as well.

In the mine of the Ajax Coal Co., on Trace Fork, about four miles north of Hazard, Ky., two Goodman, Type 136, "Entryloader" scrapers have been in use for ten months. Three months ago the neighboring operation of the Darb Fork Coal Co. installed a similar machine. All three loaders are at work in the Hazard No. 4 bed which ranges in thickness from about 30 to 42 in., averaging about 38 in. The coal in these mines is clean from floor to roof and although comparatively soft, is tough. The floor is of hard, smooth slate which provides an excellent surface on which the scraper scoop travels. Incidentally the coal separates readily from this bottom material so that digging of the bottom is not a problem.

Massive blue slate of varying thickness forms the roof above the bed. On top of this slate is a stratum of sandstone about 5 ft. thick and above this is a lamination of shales and sandstones of undetermined thickness. The maximum depth of cover is about 1,500 ft. and the average between 400 and 500 ft.

Room-and-pillar layouts are employed for the recovery of coal by hand loading in these two mines. In the Ajax operation cross entries divide the coal into blocks 300 ft. wide. One half of the block is recovered advancing by 20-ft. rooms on 40-ft. centers. Room driving terminates at a point 150 ft. from the entry, after which robbing of the room pillar commences. The last half of the block is recovered in the retreat. In the Darb Fork mine the same general method is used except that the rooms are driven 24 ft. wide on 50-ft. centers.

The blue slate roof and the upper measures of the cover do not interfere with systematic recovery of the coal. Rooms as wide as 25 ft., or more, can be driven without much timber support. Breaks occur regularly and with little disturbance behind straight pillar lines in areas where the coal is mined completely. These experiences and the fact that the Hazard No. 4 bed is clean in these mines influenced the managements to begin loading coal with scrapers. Low coal and unfavorable room grades in parts of these mines make haulage cost excessive and sometimes prohibitive. The scraper loader gave promise—which it has since fulfilled—of simplifying haulage problems and enabling the recovery of the thinner coal.

### USED WITH LONG FACES

In a system of narrow rooms and pillars, of course, the scraper loader cannot be used to the greatest advantage. Consequently, all experiments in the Ajax mine have been with faces more or less long. While special development was being projected, two experiments with wide rooms and wide pillars were completed. In the first, a 120-ft. room face was mined advancing to a depth of 200 ft. The loading station was located on the cross-entry haulway and at one extremity of the face. The scoop was made to sweep the face and thence to traverse a dragway leading to the loading station on the entry. This dragway was protected by solid coal on one side and by rows of timbers on the other. The mined-out area in the wake of the advancing face was similarly supported.

Next, a 60-ft. room was driven to a depth of 200 ft. in a section of solid coal 300 ft. wide between cross entries, the latter being protected by 50-ft. barriers. From the side of this room a pillar 120 ft. wide was attacked from the rear and mined between the barrier limits in the retreat. Two sets of such rooms and pillars were mined in this way; but as these were not worked simultaneously, neither the loading machine, the undercutter nor the men worked during a fair part

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So strong is the roof over the Hazard No. 4 seam in the Darb Fork mine that a dragway 20 ft. wide, as shown in the headpiece, is maintained in the robbed area leading back from the advancing face. Under few roofs could this be done. The camera set-up is on the face and in the path of the loaded scraper which is seen departing toward the entry. The two vertical pulleys held by the jack post, on the left, constitute the deflector around which the scraper swings in a right-angle turn.

of an 8-hr. shift; and the efficiency of each was rather low. Despite these handicaps the overall efficiency in these experiments, as measured by dollars and cents, was equal to that of hand loading for the entire mine.

The company was encouraged by the results of the first experiments, having mined a body of coal thinner than the average, which pitched to a greater degree than usual, under conditions impossible for hand loading methods. Not only was the cost per ton of this thin coal comparable to that of hand-loaded coal produced under the best conditions but a higher percentage of block was obtained. However, the company did not carry these experiments far enough to ascertain any marked advantage or disadvantage of the principles involved.

In the meantime the development of special loading-machine places was completed. The third experiment was carried out in a layout of V faces, inspired by the success attained with V faces and scraper loaders by the Black Diamond Collieries Co., Coal Creek, Tenn., in a bed of practically the same thickness.

In the Ajax mine the V faces were developed as indicated in Fig. 1. A 14-ft. dragway had been driven by hand loading to a depth of 250 ft. in a 300-ft. block of coal between cross entries. From each side of this dragway a block of coal, 100 ft. wide and 200 ft. long, was extracted by converging V faces, which were pocketed in the solid, leaving a 50-ft. barrier to protect each cross entry.

To develop these faces to their limits, successive cuts were "fanned out" in the manner indicated on the right side of the dragway. Having once established the V face to its full length, on an angle of about 28 deg. with the course of the cross entries, uniform cuts were made until the limit of the outby barrier was reached. Two places were worked in accordance with this plan, using one machine for each.

The disadvantages of this scheme were fully developed by the time these two places were worked out. The necessity of leaving the two barriers to protect the cross entries interfered with the successful operation of the panel. The inadequacy of ventilation in this system was another stumbling block. It was found that the development of V faces out of the solid could not be done economically with the scraper loader.

Straight-line faces could not be maintained during the pocketing operations and the natural tendency of the cutting machine crew was to round off the barrier face and to decrease the angle between faces at the mouth of the dragway, due entirely to the impossibility of tapering the cuts uniformly. When these faces were once developed, however, no further difficulty was experienced until, in the retreat, they met the outby barrier projection when again trouble was encountered in squaring up the barrier.

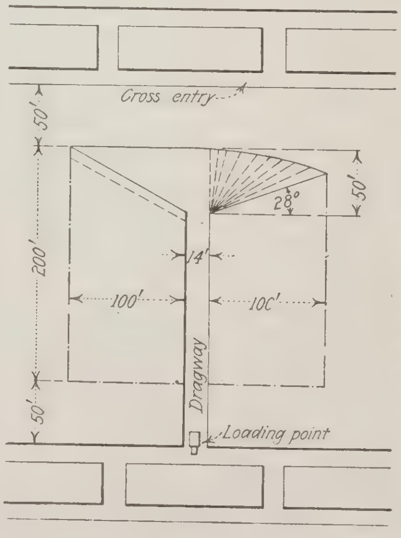


FIG. 1

**V-Face Panel In Ajax Mine**

In this layout the V faces are pocketed in the solid by successive cuts which are "fanned out" from the solitary development entry. No saving was effected by this plan of mining. Ventilation was difficult and other troubles were numerous.

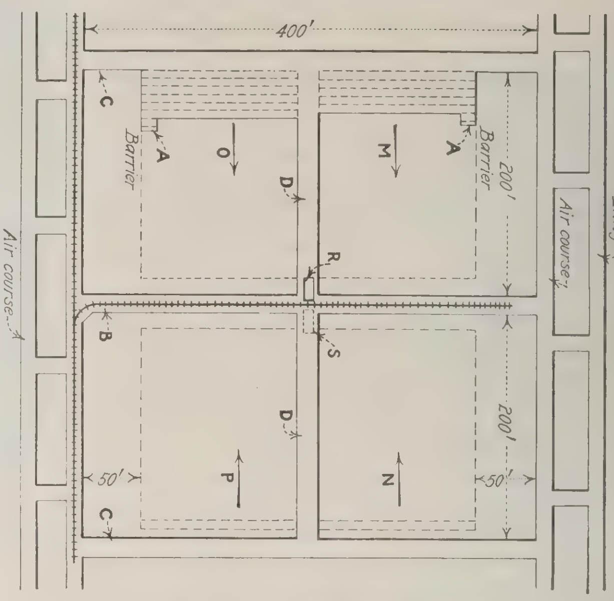


**Fig. 2—Two-Face Block Layout**

The virtue of this proposed plan is that the loading station and storage track are located in the clear of the cross entries avoiding haulage interferences. Incidentally, a comparatively large area can be mined without having to move the equipment, thus providing concentration.

Two other layouts are now under consideration. The first is shown in Fig. 2. Cross entries will be driven at intervals of 400 ft. The area between these entries will be further subdivided by single connecting entries, *B*, and single face entries, *C*, on about 400-ft. centers, respectively; also by dragways, *D*, midway between the cross entries.

Thus a block system providing great concentration will be developed. The blocks *M*, *N*, *O* and *P* will be mined as indicated, by faces 150 ft. long retreating toward the connecting entry, *B*, while cross entries will be protected by 50-ft. barriers. Cuts will be loaded from blocks *M* and *O* alternately. From the faces of these blocks the coal will be carried through the dragway, *D*, by the scraper scoop to a common loading point, *R*, on the connecting entry. The pockets *A*, will be mined slightly in advance of the faces to maintain square corners and to facilitate loading. The coal from these pockets will be shoveled by hand into the path of the scoop.

Having mined all of the coal from blocks *M* and *O*, except that in the cross entry barriers and narrow ribs flanking the connecting entry, the loading station will be transferred from *R* to *S* and mining of the blocks *N* and *P* in exactly the same way will be commenced.

This layout has an advantage in haulage in that the storage track and loading station are not on the cross entry. Thus there is no interference with haulage to and from development working faces. In developing the connecting and face entries as well as the dragways, blowers and canvas tubing could be used.

**Drilling Coal Electrically**

For rapid mining the electric coal drill is as important as the mechanical loader. These two men will drill, charge and shoot 20 holes, 7 ft. deep, on a 160-ft. face in about 3 hr.

**Scraping the Face**

A three-rope control on this type of loader imparts almost human intelligence to the scraper as judged by its movements. It hugs the face while gathering a load and then it swings clear.

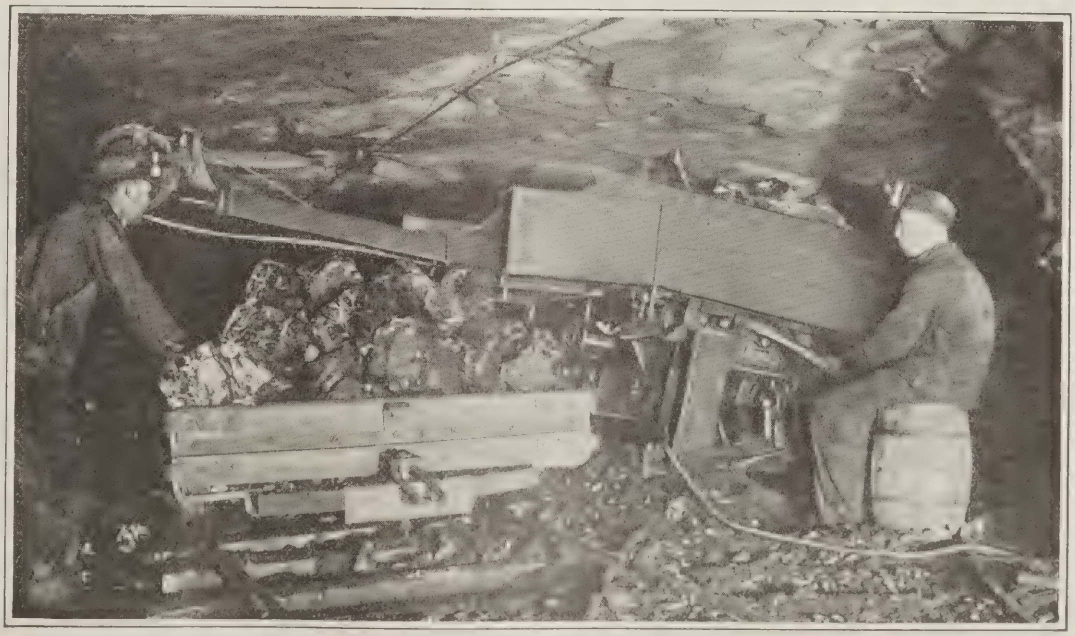
George Fitz, general manager of the company, proposes a system which avoids much of the development by narrow entries necessary to the plan last described. His idea is to drive cross entries in sets of three—a haulway and two air courses in each set—at intervals of 400 ft. From the air course and half way through the solid coal between sets of cross entries he would drive 75-ft. rooms at full width directly off the air courses, leaving 100-ft. pillars between adjacent rooms. Each room would be 200 ft. deep. One scraper would load out one cut from each of two adjacent rooms in one shift.

The average length of the cross entries from the main entry to the outcrop in the Ajax mine is about 1,000 ft. Along these stub cross entries about six such rooms driven on the advance would reach out to the outcrop. In the retreat he would mine one after another of the room pillars by slab cuts and at the same time rob the chain pillars of the cross entries. Or, in case some local condition should forbid long-face slabbing, the 100-ft. room pillars might be recovered by splitting them with 75-ft. rooms. It is this two-way attack which attracts Mr. Fitz to the plan.

As already stated, no standard system has yet been devised by this company for the operation of its scrapers. Rooms and pillars of varying widths, depending on the existing layout, are being worked with the scrapers until some definite conclusions can be reached and the development work accordingly completed. Nevertheless, even with such make-shift arrangements the machines are saving money.

Four men compose a loading machine crew—an operative who also serves as a boss, a car trimmer and two face men. These latter set the rope jacks and do what little picking and shoveling is required to clean up the face. In addition two men are engaged at night in preparing the cuts. They do the cutting, drilling, shooting and timbering of as much face as one scraper will clean up in a shift. One locomotive and two men handle a sufficient number of mine cars for two scrapers so that the time of only one of these men is charged to each machine.

A low-vein shortwall machine cuts a kerf to a depth of 6½ ft. Shot holes 1¼ in. in diameter and 7 ft. deep are drilled electrically, being slanted from a point 8 in. below the roof on the face to the roof itself at the back



**Dumping a Load**

Here the scraper bucket rides up the chute and delivers into a car on the entry. Manifestly it is simpler to haul coal to the car than to haul the car to the coal—an important advantage in favor of the scraper loader. The roof is brushed in the mouth of the dragway to give a maximum height of about 5½ ft. for the accommodation of the loading chute of the scraper. The steel mine car stands only 20 in. off the rail, yet has a capacity of 1½ tons. Lumps on this car show that the scraper handles big coal.

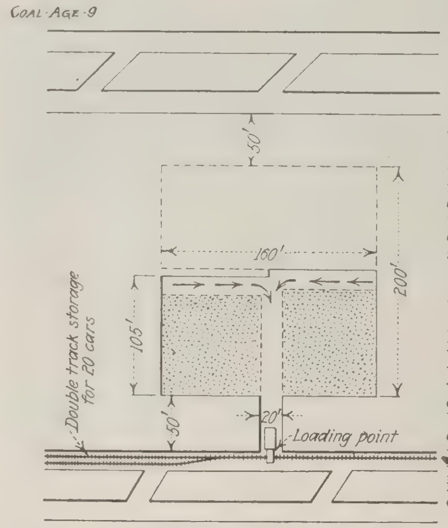


FIG. 3

**Long Face Advancing Plan**

This scheme, lately abandoned is no more than an unusually wide room layout. The dragway was placed in the middle so as to bring a longer face within the limits of a 350-ft. rope reach which is the maximum of the scraper. Maintaining a dragway 20 ft. wide through the goaf without cribs or even so much as beams can be accomplished under few roofs. The practice, of course, is not to be encouraged.

of the hole. These are placed on about 8-ft. centers: each is charged with 9 in. of black powder and fired by squibs. The holes are set off one at a time, the succession of firing being from the two ends toward the middle of a face. The roof is supported by 6-in. round posts, or their equivalent, and 10x4x1-in. cap pieces. The posts are set in rows on about 5-ft. centers each way.

Prior to August the company did little better than to break even on its costs as between machine and hand loading. A record of the performance of the two machines in twelve shifts during the first half of August shows that 1,673 tons of coal were loaded—an average of 70 tons per machine per shift—which brought about a saving of 13c. per ton. The machine loading cost analysis contains all items which should be charged against the machine such as labor, powder and shooting, miscellaneous supplies and repairs, power, interest and depreciation. The loading crew is paid a rate equal to the average daily earning power of hand loaders in the Ajax mine.

The actual saving of 13c. per ton in the cost of loading is due to the increased production per man rather than to the adoption of a flat wage rate. Thus the average output per hand loader is about 8 tons per day (low coal and unsteady labor), whereas the average per man on the loading machine crews per day during the first half of August was 17.5 tons.

### Darb Fork Mine Uses Scraper

The one Goodman scraper in the Darb Fork mine was installed at the beginning of August. Benefiting from the experience with scraper loaders at the neighboring Ajax mine, the officials at Darb Fork began to save money at the very outset. During the month of August this machine loaded an average of 75 tons per shift producing, with the additional yield of 10 hand loaders in narrow places, a total of 4,400 tons in 26 shifts.

By mid-September this machine was advancing a 160-ft. face in accordance with the plan illustrated in Fig. 3. A dragway 20 ft. wide midway between the limits of the face was driven from the cross entry through the barrier and maintained by timbers through the robbed area behind the face. First, one half, and then the other, of a cut was loaded, the loading chute being on the entry. The reason for working the long face by halves was to provide more work in one cut for the scraper. Had the dragway been located on one end of the face, the latter would have required shortening inasmuch as the rope reach of the machine is only 350 ft.

It was thought this face might be advanced in this fashion to the limits of the inby barrier. However, after the face had been advanced about one-half of the intended depth, the dangers of the layout were made manifest by weight on the face and on the timbers, particularly on those which flanked the dragway. The layout was not feasible and it was planned immediately to move the scraper to a new location. The remaining coal in front of the face can be attacked from the inby cross entry. This work proved the worth of the scraper.

### Loading Machine Crew at Work

The loading machine crew consists of an operative, a car trimmer, two face men and a boss. Half the time of the cutting machine crew or one man-shift is charged to the scraper. Actually the face is cut in 3 to 3½ hr., using a shortwall machine. Two men drill the coal electrically and shoot it. They work close behind the cutting machine so that when the face has been cut the holes are drilled, charged and made ready for shooting. The actual time required to drill and shoot a 160-ft. face, with holes on 8-ft. centers, is about 3 hr. These two men also do the timbering. Half the time of a locomotive crew is spent in serving the scraper.

Coal is loaded into 20-car trips. About 50 ft. from the loading station on the entry a storage track has been laid which will hold 20 cars. Consequently, at no time need the scraper remain idle for the want of cars. An electric hoist may be installed to facilitate car spotting. An electric bell signalling system co-ordinates movements on the face with those on the entry.

A new type of mine car is being installed for the scraper. It is of all-steel construction and holds 1½ tons of coal, stands only 20 in. off the rail and is fitted with 12-in. wheels equipped with roller bearings. The body is of the box type. It has been found desirable to

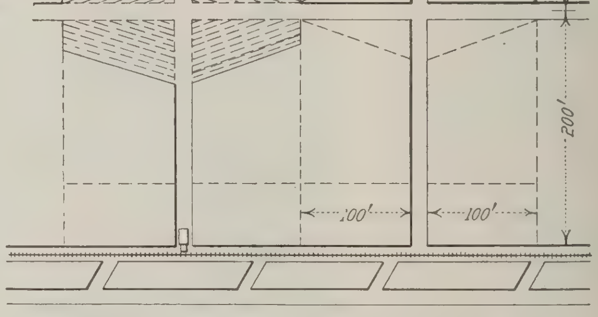
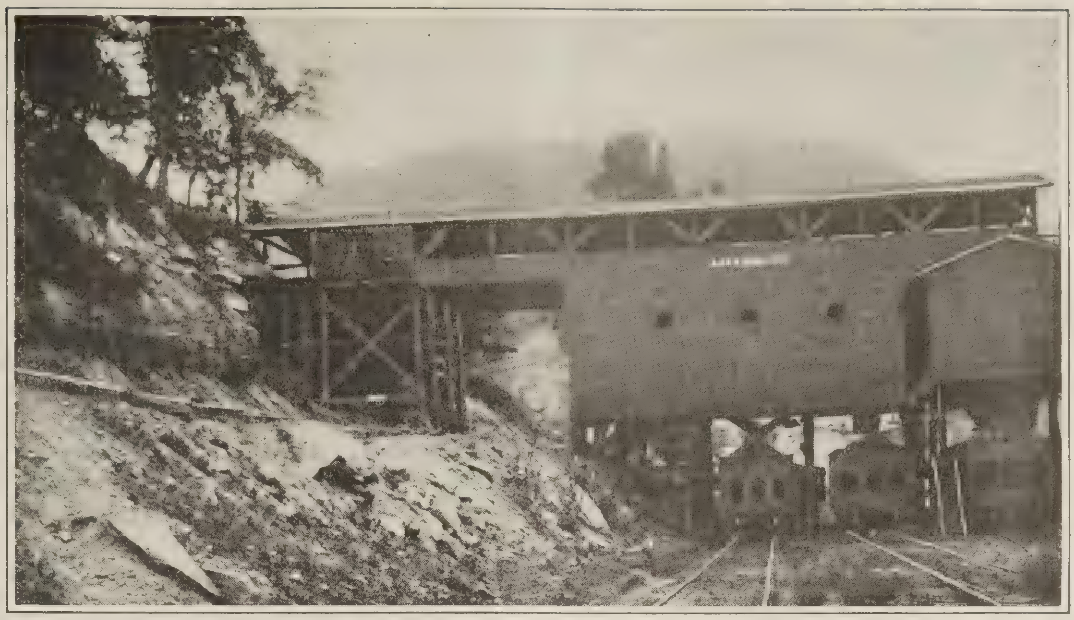


**Fig. 4—Proposed Layout of Converging Faces**

The view that the V formed by a pair of converging faces as a means of avoiding roof difficulties is of doubtful value is held by a wide circle of mining men. But in this case the converging faces have been chosen more to provide a longer face and as a convenience for the scraper than as an aid to the control of roof.



**Ajax Tipple**

This plant is one of the few in the Hazard field of Kentucky on which the coal is dumped direct from mine cars. The capacity of this tipple is about 1,000 tons a day. The scraper loading in this mine that has been going on for months has convinced the operators that this type of loading machine has great possibilities even though there are local handicaps that every mine must overcome in order to get high efficiency out of its loaders.

use 30-lb. rails on all cross-entry track. The radius of the track curve in the mouth of the dragway, on which the chute of the scraper rests during the loading operation, is 45 ft.

In this mine 6-in. round posts covered with cap pieces are set on about 4-ft. centers in rows 4 ft. apart. The distance from the face to the nearest row of posts changes from 6 to 10 ft. on alternate days. The 160-ft. face yields about 100 tons per cut and, barring protracted delays, a cut is cleaned up in one shift. This machine has been moved from one place to another through a distance of 100 ft. in 20 min., this period including delays in both taking down and setting up the equipment in the respective places.

Fig. 4 shows a system of V face scraper mining which Bruce Hardy, general superintendent of the Darb Fork Coal Co., contemplates trying out. The section 400 ft. wide between cross entries would be subdivided by dragways on 200-ft. centers and by a single intermediate cross entry, these dividing the section into square blocks. Beginning from the intermediate cross entry the blocks would be mined out as shown. The V front is not intended to aid in holding the roof but rather to assist the scoop in changing direction from that of the face to that of the dragway. Consequently, the V is comparatively flat. Its exact angle will be fixed by experiment.

Until early September of this year the highest outputs attained in any one shift had been 102 and 103 tons in the Ajax and Darb Fork mines, respectively. These companies see an opportunity to load 125 and perhaps 150 tons per machine per shift, day after day and, accordingly, to lower proportionately the cost of loading. They are realizing a larger return per ton for machine loaded coal because it contains a larger percentage of lump than that loaded by hand. Machine loaded pillar coal is being mined as cheaply as room coal, which is not the case where hand loading is followed. The scrapers have enabled the Ajax company in particular to mine areas of thinner coal and from more steeply dipping places than could have been done by hand.

Of the savings which concentration has effected, that of haulage is perhaps the greatest. Both companies will now be in a position to produce larger tonnages without employing more men or building additional houses.

So strong is the roof over the Hazard No. 4 seam in the Darb Fork mine that a dragway 20 ft. wide, as shown in the headpiece, is maintained in the robbed area leading back from the advancing face. Under few roofs could this be done. The camera set-up is on the face and in the path of the loaded scraper which is seen departing toward the entry. The two vertical pulleys held by the jack post, on the left, constitute the deflector around which the scraper swings in a right-angle turn.

**Tipple at Isabella No. 1 Mine Serves Coke Ovens**

This tipple at the Isabella No. 1 Mine of the Hillman Coal & Coke Co. is located on the Monongahela River above Brownsville, Pa. The mine, which was opened in 1908, was completely electrified in 1923. Its entire output—2,000 tons of Pittsburgh seam coal per day—goes to coke ovens, which accounts for the typical coke-region construction of the tipple.

# Miners' Union Is Disintegrating in Southwest, Thanks to Policy of "No Backward Step"

By Sydney A. Hale
Special Contributor, *Coal Age*
New York City

"NO BACKWARD STEP"—meaning refusal even to consider reducing wages from the peak levels of 1920—has been the battle cry of the United Mine Workers ever since the demand for readjustment became insistent. Mr. Lewis says his stand has saved the wage structure of the country and preserved the national prosperity. In the Southwest, however, the liquidation he opposes is taking place. The union is disintegrating. In 1920 the word of the United Mine Workers was law in the coal fields from northern Texas to the Canadian border. Today Texas is wholly non-union, Oklahoma is nearly so, Arkansas is fast approaching that status. The story of the disintegration is told in detail in Mr. Hale's article.

THE GREAT SOUTHWEST came knocking for admission into the Central Competitive Field in 1906. It was denied a seat at the council table by the operators already in, who claimed that there was no commonalty of interest between the producing districts of Illinois, Indiana, Ohio and western Pennsylvania, and the states lying west of the Mississippi River. Not only was admission denied, but the Central Competitive Field producers also took their union associates to task for wasting energy on the Southwest while the Central Competitive Field was still exposed to the menace of ruinous labor competition from West Virginia.

Despite this rebuff, the union held the ground it had won for many years. The winning of the Southwest, however, had not been particularly easy. It had been necessary to wage industrial warfare against the four largest producers in that region, who declined to recognize the United Mine Workers, following the organization of the miners in Arkansas, Kansas, Missouri, Oklahoma (then the Indian Territory) and northern Texas in 1899. In June of that year, 25 of the smaller operators had agreed to the union demands for an 8-hr. day, higher mining rates and lower powder prices, but the four big companies, producing about three-fourths of the coal mined in the Southwest, held out until the spring of 1900 and then signed up, one by one, giving their employees all they had asked for except recognition of the United Mine Workers. That recognition did not come until 1903, when the producers formed the Southwest Interstate Coal Operators' Association.

### Union Never in Full Control

Even with the association firmly established and extending complete recognition to the union, organized labor has never been able to effect an absolute control over the coal fields of the Southwest. In the earlier years of recognition, the tonnage represented by the Southwestern Interstate Coal Operators' Association ranged from 64 per cent in Missouri to 98 per cent in Arkansas. In the four states having membership in the producers' organization—Kansas, Oklahoma, Missouri and Arkansas—there are a number of small mines that have always been out of the reach of the union. In Texas, the sphere of union influence did not extend beyond the bituminous mines in the northern part of the state; the bituminous mines along the Rio Grande and all the lignite operations have remained non-union.

As in other fields, the progress of unionism has not invariably been peaceful nor the exercise of acquired power without its tyranny. The very mention of Kansas inevitably recalls the turbulent reign of Alexander Howat, during which outlaw strikes became so commonplace and so dangerous to the continued existence of the United Mine Workers in that region that Howat and his lieutenants were deposed from their district offices by John L. Lewis in 1921 and the representative of the international organization placed in charge threatened to suspend 4,000 miners (Kansas employed approximately 8,200 at that time) who refused to return to work when ordered to do so by the union.

### Arkansas Had Its Troubles

In Arkansas, too, the history of union control is not unmarred by spotted pages. The celebrated Coronado Coal Co. case, in which the Supreme Court of the United States laid down the principle that an unincorporated union could be sued for damages, was based upon such a page. In 1914, a group of companies operating in the Prairie Creek valley in Sebastian County elected to abrogate a contract with District No. 21 and run open-shop. The experiment ended in murder and the destruction of "all of the property" on the premises of four of the mines. In fairness to the international organization of the United Mine Workers, it should be remembered that the Supreme Court exonerated the parent body of all direct responsibility, holding the eruption "a local strike, local in its origin and motive, local in its waging and local in its felonious and murderous ending." The same opinion, however, opened the way to the further prosecution of the district and local unions and of individuals.

Unlike the Central Competitive Field, the growth of the Southwestern Interstate Field during the period of union supremacy has not kept pace with the growth of bituminous tonnage for the United States as a whole. During the early years of organization, 1899-1906, the relative increases were on a comparable basis and Oklahoma showed a faster rate of growth than did the United States. Between 1907 and 1917 Texas forged ahead, with percentage gains from 1908 to 1915 inclu-

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Fourth of a series of articles describing the changes in the labor status of the different bituminous coal producing districts of the United States in recent years. Preceding articles appeared in *Coal Age*, Sept. 25, Oct. 1 and Oct. 8. Another article will appear in an early issue.

sive, in every case outdistancing the record for the nation. Since that time there has been a slowing up, which has become most marked in the past few years. Oklahoma's progress since 1907 has been somewhat more erratic, but the slowing-up process did not set in until 1921, although its record in some of the preceding years fell below that of the United States. Arkansas, Kansas and Missouri, on the other hand, have never been able to catch up with the national percentage rate of increase since 1904, the year following the recognition of the United Mine Workers by the Southwestern Interstate Coal Operators' Association. The situation is shown graphically in Fig. 10.

The basic rates of compensation, however, have undergone a steady, unbroken advance. The union contract pick-mining rate in the thick-vein field in Arkansas in 1902 was 55c. per ton: today it is $1.15, an increase of 109 per cent. Day rates have been boosted from $2.25 in 1903 to $7.50, an increase of 234 per cent. Were the comparisons carried back to 1898, the increases, of course, would be greater. Unfortunately, authentic comparable data on those earlier years have not been compiled. The history of pick-mining rates since 1902 is set forth in Table V and is shown graphically in Fig. 11.

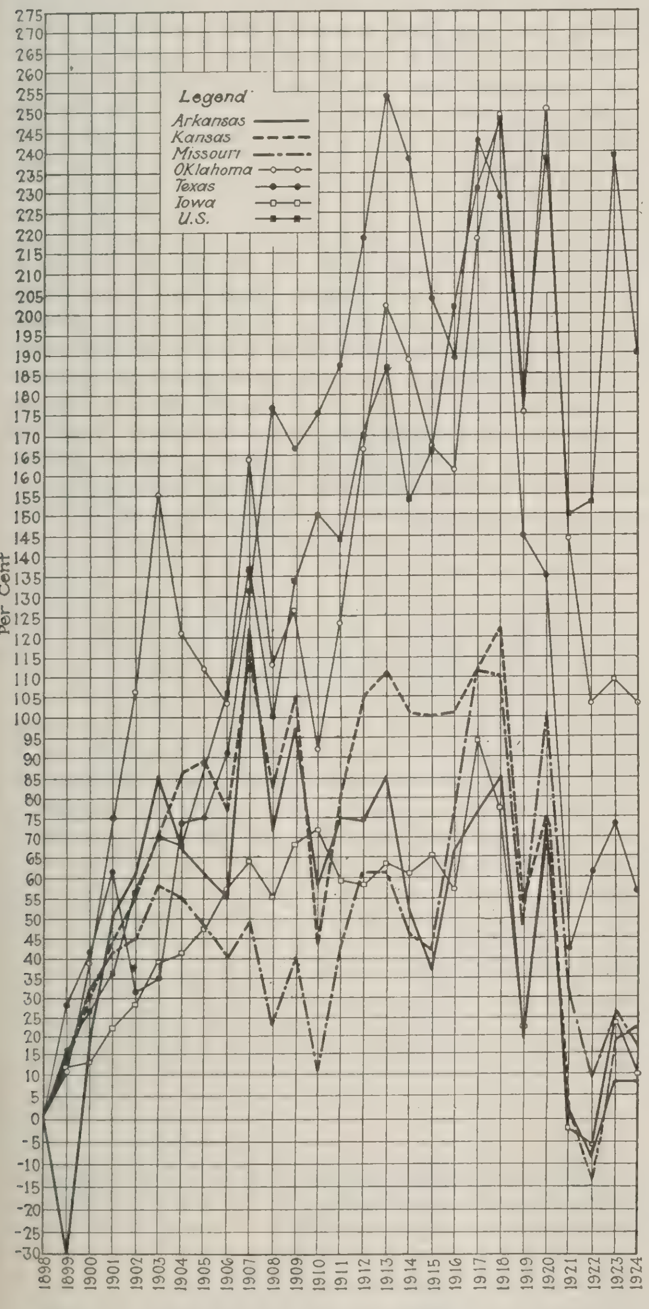

**Fig. 10—Southwest Loses Its Stride in Production**

The story of the percentage increase year by year in the output of the coal producing states of the Southwest since 1898 is one of wide fluctuation and uneven growth when comparisons are made between the individual states in that group. The region started out at a lively clip, but in recent years has been lagging behind the country as a whole in the matter of tonnage gains.

It would be shooting wide of the mark to say that the decline in the rate of growth of production in these southwestern districts is wholly chargeable to unionism. There are other factors of limitation which have had a great influence. The natural opportunities for expansion have been much smaller. The Southwest has not had the industrial development which has created an ever-widening demand for fuel in the states east of the Mississippi and north of the Ohio and Potomac Rivers. Its entrance to that charmed territory is barred by transportation adjustments, in many cases by the quality of the coal, and by the business-hungry mines of the Central Competitive Field and the long stretch of the Appalachian Region. Its westward sweep is dammed both by the lack of heavy demand and by the ability of the operators in the West to take care of home-grown requirements.

In the struggle to supply the industrial centers dotting the Missouri River, the Southwest must meet the competition of central and southern Illinois. Only the power of the Interstate Commerce Commission has prevented that struggle flaring into a bitter rate war. On top of all this is the competition of fuel oil. The Southwest was waging a losing fight against the inroads of petroleum in factory and in home when the East, so concerned since the World War over the pressure of fuel oil, never gave the liquid a thought as a possible competitor.

### Not Much Coal Shipped

There has been little direct conflict between union and non-union production in the Southwest's battle to maintain its position. Aside from a small tonnage of Missouri and Kansas coals going to Colorado, a little Oklahoma coal to New Mexico and some Arkansas tonnage to Tennessee during the war period, distribution of the output of the southwestern states has been to non-coal producing and to union coal producing states. In this competitive battle, therefore, the same rigidity of wage scales that has handicapped the producers of Arkansas, Missouri and Oklahoma has also hampered their principal rivals. Local consumption and locomotive fuel demands have absorbed the greater part of the output. Arkansas, with the smallest home market, ships little more than one-third of its product in interstate commerce—even under the most favorable conditions. Missouri is able to sell less than 10 per cent of its production outside its own borders, yet the consumption of native coal represents little more than 25 per cent of the total coal requirements (exclusive of railroad fuel) of the state.

The Southwest, nevertheless, is finding this rigidity irksome. Nothwithstanding the fact that labor costs in the Central Competitive Field are pegged at the 1920 levels, many sections of the coal producing territory west of the Mississippi River are demanding that the inflexible wage scale be done away with and that they be free to fight to retain business with the basic labor costs they enjoyed seven or eight years ago. The first break came in Texas and attracted little or no attention outside the state—possibly because public interest has been more easily centered upon the travails of the

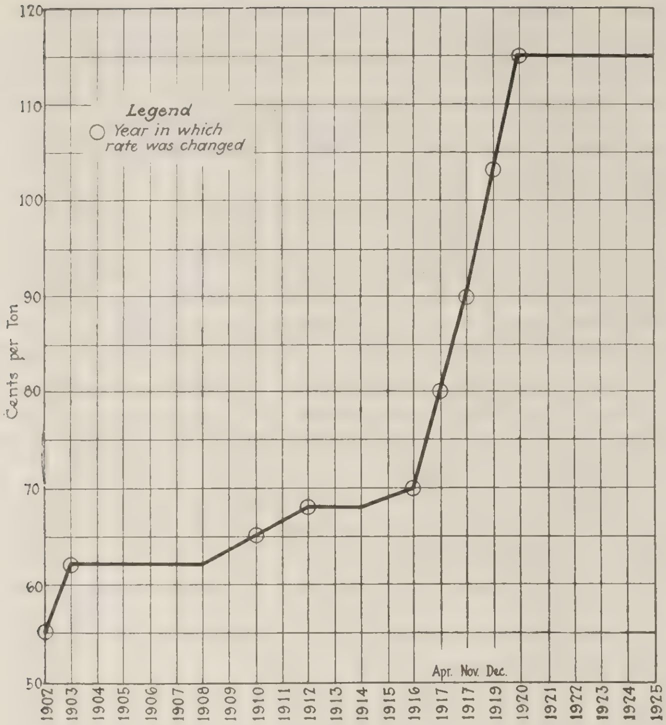

**Fig. 11—Upward the Tonnage Rate Marches Along**

The pick-mining rate in the thick-vein field of Arkansas is typical of tonnage rates in the Southwest. Every change under union leadership has been upward; even the decrease that marked the history of rates in the Central Competitive Field in 1904-06 is missing in this territory.

Southwestern Interstate Coal Operators' Association groups. Oklahoma was the next to fall away from the union. Arkansas is following in Oklahoma's footsteps. Only in Kansas have union sympathizers been able to discourage effectively open-shop longings. Missouri still remains quiescently union.

Late in the summer of 1921 Texas coal operators and representatives of the United Mine Workers met in futile conference at Fort Worth. Producers from the Thurber (Erath County), Strawn (Palo Pinto County) and Bridgeport (Wise County) fields asked that wages be reduced to the 1917 scale. This meant a reduction of the day rate from $7.50 to $5, with corresponding changes in other rates. In consideration of the acceptance of such a proposal operators were ready to agree to reopen mines then closed down. Then, as now, union officials were very solicitous that contracts *preserving* high wages be held inviolate.

The labor leaders, headed by the president of District No. 21, rejected the proposal of the operators. That rejection was the rock upon which the organization of the United Mine Workers of America in Texas was wrecked. In September, the Texas-Pacific Coal & Oil Co., operating at Thurber, announced that it would run open-shop, paying $5 to day men and $2, instead of $2.65, to tonnage men. Other mines in Erath, Palo Pinto and Young counties followed suit although complete severance of union relationships did not take place until several months after the first break. In 1923, mines in Wise County made the decision to operate nonunion unanimous.

A typical wage scale now in effect in the northern Texas field shows the following rates: Mining rate, $2 per ton; day engineers; $7.08 per day; night engineers, $6.28; top men, $4.36 per day; bottom men, $5; spraggers, $3.65; trappers, $2.65; road cleaners, $4.75; face men, $5.29; blacksmiths, $5.51; blacksmiths' helpers, $4.77; entry yardage, $1.68 per yard; back brushing, $1.47 per yard; straight brushing, 68c. per yard; cribs, $1 each.

The breaks in the union ranks of Oklahoma and Arkansas were foreshadowed when operators, members of the Southwestern Interstate Coal Operators' Association, held out from March 28 to May 3, 1924, before consenting to a three-year extension of the 1920-23 agreement. During these negotiations at Kansas City, producers vainly endeavored to persuade the union leaders to accept a reduction in days rates from $7.50 to $6. They pointed out that much of the railroad tonnage formerly enjoyed had gone to oil; that considerable industrial tonnage had also deserted coal, leaving only a precarious business to the union operations of the Southwest. Union representatives, however, insisted that they could not recognize any special conditions or handicaps in the Southwest. The Jacksonville agreement had been signed: the Southwest must accept the terms imposed by the contract entered into in the Central Competitive Field.

"Thereupon," explained one of the leading producers in the region, "operators in the Southwest advised Mr. Lewis that it would be impossible for them to survive under the 1924 agreement, and by mutual consent a provision was inserted in the union contract to the effect that at any time a coal operator withdrew as a member of the Southwestern Interstate Coal Operators' Association or the Oklahoma Coal Operators' Association he would be free from further liability or obligation under the union contract."

The change referred to was effected by making the

## Table V—Pick-Mining Rates in Southwestern Interstate Field

(Rates in Cents per Ton)

| | 1902 | 1903–8 | 1910 | 1912–14 | 1916 | April, 1917 | Nov., 1917 | Dec., 1919 | 1920 and Current* |
|---|---|---|---|---|---|---|---|---|---|
| Arkansas: | | | | | | | | | |
| Thick Vein | 55.0 | 62.0 | 65.0 | 68.0 | 71.0 | 81.0 | 91.0 | 102.0 | 115.0 |
| Thin Vein (Spadra Field) | † | 87.5†† | 90.5 | 93.5 | 96.5 | 106.5 | 116.5 | 127.5 | 140.5 |
| Kansas: | | | | | | | | | |
| Thick Vein | 65.0 | 72.0 | 75.0 | 78.0 | 81.0 | 91.0 | 101.0 | 112.0 | 125.0 |
| Thin Vein (Osage County) | 135.0 | 160.0 | 165.0 | 170.0 | 175.0 | 185.0 | 201.6 | 240.0 | 291.7 |
| Missouri: | | | | | | | | | |
| Thick Vein (Bevier, etc.) | 60.0 | 67.0 | 70.0 | 73.0 | 76.0 | 86.0 | 96.0 | 107.0 | 120.0 |
| Thin Vein (Ray, Clay, Lafayette, etc.) | 100.0 | 111.0 | 116.0 | 121.0 | 126.0 | 150.0 | 152.7 | 171.0 | 192.7 |
| Oklahoma: | | | | | | | | | |
| Thick Vein (Eastern Okla.) | 55.0 | 62.0 | 65.0 | 68.0 | 71.0 | 81.0 | 91.0 | 102.0 | 115.0 |
| Pittsburg County, etc | † | † | 75.0 | 78.0 | 81.0 | 91.0 | 101.0 | 112.0 | 125.0 |
| Thin Vein (Henryetta) | 70.0 | 70.0 | 80.0 | 83.5 | 86.5 | 96.5 | 106.5 | 117.5 | 130.5 |

* Union scale rates.
† Date not available or non-comparable.
†† Rates under 1908 Contract.

first clause of section 22 of the general contract read:

> All the provisions and terms of this contract are hereby mutually agreed to by and between all the operators, *while* members of the Southwestern Interstate Coal Operators' Association and all the miners of Districts 14, 21 and 25—

instead of:

> All the provisions and terms of this contract are hereby mutually agreed to by and between all the operators, members of the Southwestern Interstate Coal Operators' Association, and all the miners of Districts 14, 21 and 25—

The same month the interstate agreement was signed at Kansas City mines in the McAlester-Wilburton district in Oklahoma made known their determination to revert to the November, 1917, scale. By July the movement was in full swing and clashes between union sympathizers and open-shop workers began to take place. From sporadic disturbances these developed into organized attacks: two were directed against the Kali-Inla mine near Cambria and a third against Rock Island No. 12 at Hartshorne. In a number of cases, workers were shot at from ambush, but no fatalities resulted and there was no destruction of property. Oklahoma guardsmen were called out to protect the operations and their rigor was not relaxed until late in the year. In the meantime organized opposition to the open-shop movement disintegrated. By the end of the year only the Henryetta district maintained its fealty to the union and the 1920 scale.

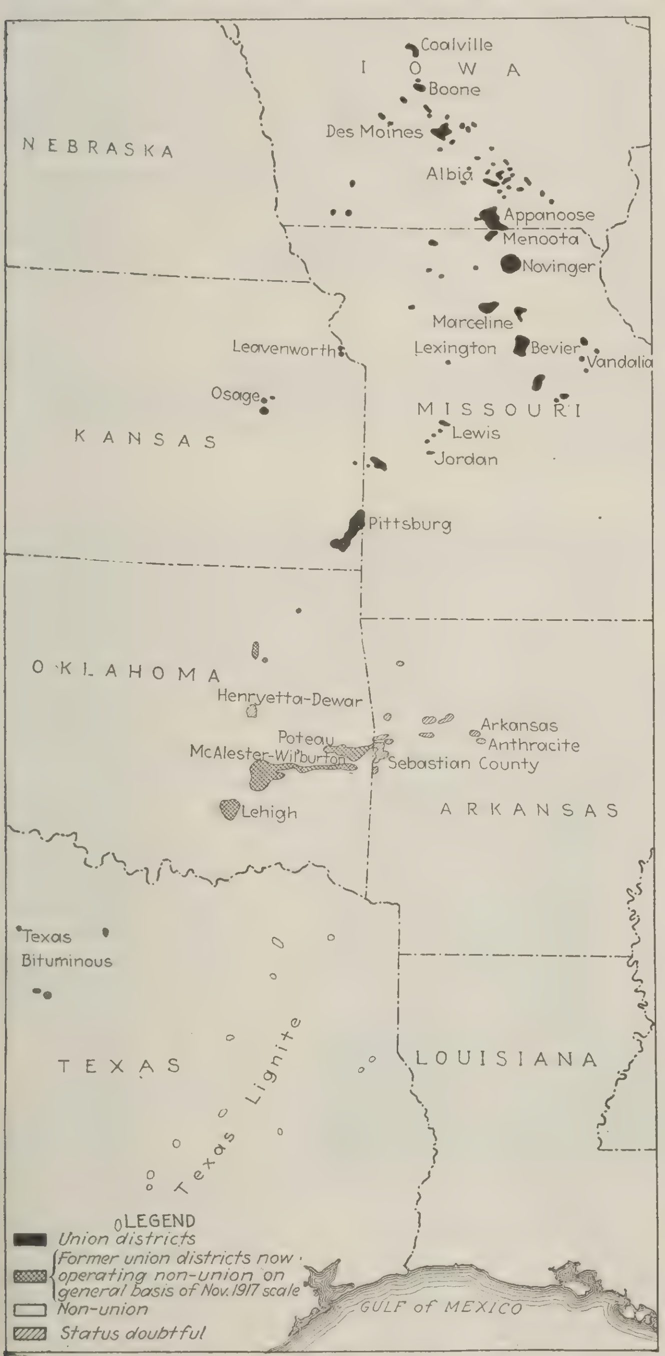

**Fig. 12—The Shifting Labor Status in the Southwest**

The Southwestern Interstate Field as a wage-making entity comprises the producing districts in Arkansas, Kansas, Missouri and Oklahoma. Texas, geographically and historically part of this field, has been acting independently for several years. As a matter of fact, the southern Texas bituminous mines along the Rio Grande, not shown in the map, have always denied the union recognition.

The Henryetta district gave up the struggle to continue operations on the Jacksonville-Kansas City basis with the beginning of the present coal year. At that time 42 mines offered steady work throughout the summer if the men would accept the 1917 scale. This meant minimum day rates of $4.36 and $5, against $6.86 and $7.50 under the union scale, and a cut of 24c. per ton in the mining rates. The miners rejected the offer. Thereupon the Puterbaugh interests took the lead in reopening under open-shop conditions by starting up the B. & A. mine at Schulter. A few days later the McAlester Colliery Co. resumed work at Kincaid and shortly after that Crowe No. 6 and the Atlas mines fell into line. By the end of July practically all the operations then working in that district were paying the 1917 scale.

The defections in the Henryetta district have aroused union officials to new activities, culminating in a general strike order issued the last of August, 1925, and directed against all mines in District No. 21 paying less than the Jacksonville-Kansas City scales. This latest drive has been centered, not against the Henryetta field, where picketing by prayer has already led to several court clashes, but against the McAlester-Wilburton district, the scene of the original revolt against the union. Rock Island No. 12 at Hartshorne seems to be the first main objective in the new campaign, as it was in the earlier attempts to stop the collapse of the union in Oklahoma. The final outcome is still in doubt, but judging by the developments of the past year, the present chances of the United Mine Workers to regain lost ground in that state are dubious.

Although the movement was slower in getting under way, in its major aspects the situation in Arkansas has paralleled that in Oklahoma. The first definite break with the union came in January, 1924, when C. L. Melton announced that he would run open-shop. The majority of the operators, however, held aloof for more than a year after this pioneer took his stand. This delay upon the part of other producers to follow the lead of Mr. Melton—and of the stripping operations at Charleston and Branch and certain shaft and strip pits in the Spadra field—may be explained by their reluctance to sever their union connections so long as there was any hope that the officers of the United Mine Workers would consent to a modification of the Jacksonville-Kansas City agreement. Up to the time William Dalrymple succeeded Andrew McGarry as president of District No. 21, optimists cherished the delusion that the election would usher in a change in policy. Mr. Dalrymple soon undeceived them.

With that hope gone, the movement to abandon the union has been accelerated. By the first of July the list of open-shop operators had been swelled by the Bernice mine at Russellville, the Collier-Dunlap at Hartman, the Arkansas Mining Co. operation at Montana, the Warner and the Semi-Anthracite company at Coal Hill. A little later the Greenwood Coal Co., one of the largest producers in the state, posted notices that it would reopen on the 1917 basis. The Backbone Coal Co. at Excelsior and the Mammoth Vein colliery at Hartford, controlled by the same interests, also shifted to the non-union column. The announcement that they would run open-shop was not in every case followed by an immediate resumption of operations, but enough mines started up again to convince the miners that the declaration was not an empty gesture.

### FAMILIES HOLD "PRAYER MEETINGS"

There have been the usual appeals to court against intimidation by union pickets, and some destruction of property. As one part of the campaign of the operators to cripple the fighting strength of the labor organization application was made for the appointment of a receiver for District No. 21 of the United Mine Workers of America. More recently temporary federal injunctions were issued against 32 locals in Sebastian, Franklin, Logan, Johnson and Pope counties, prohibiting intimidation. As in Oklahoma, miners' wives and daughters have held "prayer meetings" at the open-shop mines in the Alix and Denning Districts "in an effort to influence the men who have gone to work at a reduction in wages, taking the places of the striking miners in this field."

It is, of course, too early to make any prophecies as to the ultimate outcome. The movement has not developed the sweep of the Oklahoma revolt, but the drift is strong. The largest producer in the Southwest is not now operating its Arkansas and Oklahoma mines, so the union can receive no help from that quarter.

In Kansas the union has been much more successful in holding its lines. Several attempts have been made to evade the 1924-27 scale by co-operative mining, but demonstrations by union sympathizers appear to have checked them. Missouri pursues the uneven tenor of its ways with no signs of open rebellion against the union scale. Iowa, not a part of the Southwestern Interstate Field, but closely allied to it geographically and geologically, also seems resigned to, if not content with, its lot. This state, like the Southwest, was long ago denied admission to the Central Competitive Field councils, although in the case of Iowa the opposition was confined to the operators of Indiana, Ohio and Pennsylvania. It has given the United Mine Workers of America two of its international presidents of the past decade, and remains strongly union.

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# Experts Talk Anthracite and "Contract Breaking"

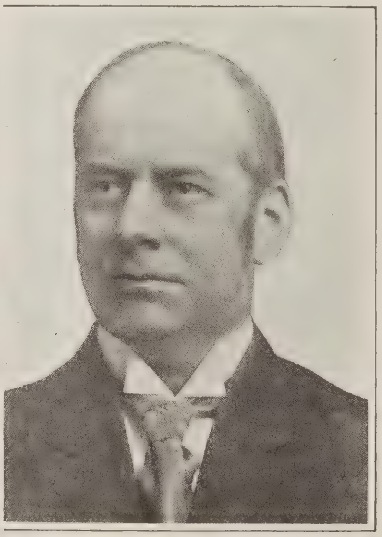
**By Paul Wooton**

Washington Correspondent of *Coal Age*

NEW ENGLAND RETAILERS will not jeopardize their anthracite allotments in the slightest by handling bituminous coal or other substitutes. On the other hand they will be doing just what the operators want them to do if they will protect users of anthracite by meeting their fuel requirements in any way within their power. Assurances to that effect were given by Dr. E. W. Parker, of the Anthracite Bureau of Information, in the course of remarks last week before the Washington Section of the American Institute of Mining and Metallurgical Engineers.

George S. Brackett, vice-president of the Northern West Virginia Coal Operators' Association, defended bituminous operators—especially those of northern West Virginia—who have reopened their mines at wages less than those specified in the Jacksonville agreement. He held that union miners, by going to work at non-union wages in other and competing regions had already scrapped the contract. Allen H. Willett, economist for the National Coal Association, also spoke.

George S. Brackett



Dr. E. W. Parker

Dr. Parker raised some significant points thus: "Rumors are current that other agencies of mediation, political or otherwise, are actively at work endeavoring to devise some plan by which the opposing forces can be called together and at the same time not prove to be a boomerang to the mediator. There does not appear to be any apprehension of the federal government mixing in unless or until there is danger of suffering or inconvenience on the part of the public from a scarcity of fuel. To my mind such a danger is somewhat remote.

"From April 1 to Aug. 31 the mines have produced, according to the U. S. Bureau of Mines, approximately 32,800,000 gross tons, of which about 70 per cent, or say 23,000,000 gross tons, were of the domestic sizes, pea and larger. By far the greater part of it is in the cellars of consumers. Moreover, as last winter was unusually mild, considerable quantities of hard coal were left over.

"I feel safe in saying that if the local distribution has been looked after as systematically as has the distribution from the mines to communities every user of anthracite should have enough coal on hand to last him well after the first of January, and if the lighting of furnace fires this fall is put off until they are absolutely needed the next year will be at least a month old before it will be necessary to indulge in the use of substitutes for anthracite.

"The present suspension may last three or four weeks longer; it may last until the robins appear again next spring. Its duration depends upon a number of contingencies and it will continue until this time next year if it depends for its termination on the operators acceding willingly either to adding any more to the consumer's burden of fuel cost, or of saddling the check-off on the industry. What they may be forced to do is another question.

### Recalls President Harding's Warning

"It is as true now, so far as anthracite is concerned, as it was in 1922, when on Aug. 18 the lamented President Harding, after being flouted and defied by John Lewis, reported to Congress that 'the country is at the mercy of the United Mine Workers' and the quality of that particular kind of mercy is not strained.

"Another chief executive, President Wilson, on an occasion produced by events similar to the present, said: 'The business of government is to see that no other organization is as strong as it is; to see that nobody or group of men, no matter what their private business is, may come in competition with the authority of society.' He further declared that the conduct of the mine workers' union 'had been not only unlawful but unjustifiable.' "

Mr. Brackett made the most convincing case, some of his hearers thought, that has yet been put forward in behalf of those operators who have ignored the Jacksonville agreement. He said:

"As the large union companies were forced to close their mines, many of their operatives, chafing under the idleness imposed by what they considered impossible conditions under the agreement, requested the companies to resume on a basis similar to that prevailing in non-union fields. These requests came up in the form of demands from individual miners requests from groups headed by a spokesman, resolutions by local unions and finally by legal petitions prepared by the miners, through legal advice.

"Thousands of union miners had individually withdrawn from the wage contract as individuals and obtained employment in the non-union mines of competing fields.

### Contract Already Broken

"The alternatives as stated by Senator Watson, of the consolidation Coal Co., to John L. Lewis, facing both the union operator and the union employee were 'not the choice of both working under the contract and either breaking it. The contract, being in its essence a collective agreement, was already broken and gone.' Nothing remained then but those alternatives 'between sharing idle mines and unemployment on the one hand, and sharing competitive production and prevailing wages on the other.'

"The pressure brought upon the large companies to do the latter was gone. The economic situation in the district was acute. The belief prevailed that northern West Virginia, by reason of isolation, freight differentials, etc., was faced with economic ruin unless a level could be found where mines could be operated on a basis of sustaining both employer and employee. All classes of people—union men of every craft and trade, merchants, professional men, property holders, and in fact, every class of citizenship, approved of the step to be taken—all, I say, but the officials of the international mine union.

"Local autonomy in District 17 of the miners' union had been suspended. The affairs of the men were in the hands of personal representatives of President Lewis. The regularly elected officers of the local organization had been supplanted and had no voice in matters of government.

### Union Repudiated Contract

"In other words, so far as the miners' individual action is concerned, the union contract relationship had been specifically repudiated by an overwhelming majority of the union members.

"Public opinion on all sides urged a resumption of mining and the disregard of an agreement that all thought did not legally exist.

"If a contract was disregarded, it was done by the individual members of the union, who accepted a choice between idleness and employment. The companies, watching their organizations disintegrate and their best men forsake their union and go to work, and urged and supported by universal public opinion, fell into line.

"These are the facts of the controversy, if there be a controversy. By far the majoritiy of the coal companies had no agreement, and their employees would listen no longer to the dictation of the unions' international representatives without voice or vote or district autonomy. Very able lawyers on both sides examined the contract. No suit in our courts has ever been filed.

"Under such conditions the issue to be decided is not the technicalities of a document which exists only in the files of the operator and employee, but their mutual decision on the obligations which they owe to the families and to the properties entrusted to their care. These obligations existed prior to and independent of the relationship to the third party of the union.

### Accuses Seven Union Operations

"I would like to say a few words as to the seven union companies still operating in northern West Virginia. I know that one of the largest of these companies has a three-year contract covering their tonnage which does not expire until next April. One company is the only operating mine, producing a suitable byproduct coal within the first zone freight rate to a local industry. One other company is operating under a contract by which the employees place the coal on the railroad car at a fixed price lower than that justified by the union wage scale. One other company controls docks at the lake front and is in a position to protect its coal in the markets of the northwest, and I have no hesitancy in saying that it is my firm belief that every one of these seven companies is violating the Baltimore agreement in some way.

"It is also my belief that, in the so-called union mines, these violations of the agreement are permitted by the international officials of the union with their full knowledge and consent; and by such permission they are tacitly recognizing the economic impossibility of the Baltimore agreement in northern fields of West Virginia."

# Uncle Sam Can Aid Public by Leaving Coal Alone

**By Harry L. Gandy**
Executive Secretary, National Coal Association,
Washington, D. C.

THE COAL INDUSTRY has enjoyed the unenviable distinction of being the favorite object of attack by advocates of the extension of governmental control of industry. My observation is that at times there has been a quite ready welcome for suggestions of federal interference in the industry on the part of otherwise supposedly fair-minded and conservative organs of opinion. What is the explanation of the prevalence of this uncritical bias?

Many advocates of federal interference with the bituminous coal mining industry usually fall back on one or an other of the following assertions:

(1) *That the government must prevent any interruption in the supply of coal and excessive prices.*

(2) *That the government must deprive monopolistic bituminous mine owners of their ill-gotten gains.*

(3) *That the government should require the elimination of surplus mine capacity and a less wasteful operation of the mines.*

Interruption of supply and high prices will be treated together, because they are mutually interdependent and one is obviously affected by any change in the other.

### A WARNING

IN A PART of his address not reported here, Mr. Gandy told his audience of industrial leaders that the demand for governmental interference just now is not due to any crisis in bituminous coal but only to the hard-coal tie-up. He solemnly warned coal consumers that if they permit themselves to get panicky they will begin bidding against each other ruthlessly as they did in 1920, creating the demoralized conditions of that year and thus probably bring down government action. Once recognize the principle that the coal industry cannot solve its own problems and "no industry will be safe," he warned.

## Debates Three Questions

It is my purpose to take up each of these lines of argument in turn and to consider briefly, on the one hand, what basis, in fact, there is for the implied accusation, and on the other hand what hope of improvement lies in governmental interference, whether state or national.

(1) *Must the government prevent any interruption in the supply of coal and excessive prices?*

Nothing is so apt to arouse the wrath of the American people as the sudden increase in price of some commodity in general use. During the World War when the prices of other commodities were rapidly advancing, that of bituminous coal was kept down by the regulations of the Fuel Administration. As the result of a remarkable combination of circumstances, the withdrawal of regulation, the bituminous coal miners' strike of 1919, the switchmen's strike of mid-summer 1920, and the failure of consumers to use ordinary business precaution in obtaining their future requirements of bituminous coal early in the season, the late summer and fall of 1920 witnessed an unprecedented advance in the price of bituminous coal. On that occasion an insistent demand for federal regulation of the industry swept over the industrial East and was especially vociferous in New England. The fact that only an insignificant proportion of the bituminous coal marketed sold at high mine prices, had no weight; isolated instances of excessive prices were quoted as though they were typical.

The fact is that bituminous coal operators took less advantage of profit-making opportunities than did many other industries in those troublous times. It was by no means an unusual thing for an operator, even when not bound by contract to continue to furnish coal to his regular customers at prices little, if any, above his then normal fair-profit price. That the 1920 bulge in prices was due to temporary conditions was conclusively shown by the steady reaction which resulted in the depressed market in 1921.

There are two characteristics of the bituminous coal industry that should lead any observer to accept as proper the somewhat wider fluctuation in coal prices, with changing conditions, than in the prices of most commodities. On the one hand no adequate substitute for bituminous coal as industrial fuel can be obtained in a short time. On the other hand, the cost of fuel constitutes so small an item in the total cost of the finished product of most lines of manufacture that manufacturers are prepared to pay high prices if such prices are necessary. For these reasons, even a slight shortage of coal causes a rapid advance in prices. But it is a remarkable fact that few staple commodities have shown smaller general fluctuations in price year in and year out than has bituminous coal.

Such variation as there has been, except during and immediately after the war, has been brought about by one of three things, namely: general industrial depression; strikes in the industry; or inadequate transportation. The bituminous coal operators are prepared to mine and ship, at short notice, all the coal that the country can possibly need, and so long as an adequate supply is available it is obvious that unfairly high prices are an impossibility. Reduction in output in times of general industrial depression is economically desirable, for coal is not a commodity which can be conveniently stored in large quantities far in advance of the time of its need.

Interruptions in supply on account of inadequate transportation facilities are very largely a thing of the past, if the recent performance of the railroads in handling 11,000,000 and 12,000,000 tons of coal every seven days for weeks in succession without a car short-

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From an address made by Mr. Gandy before the National Association of Manufacturers at St. Louis, Mo., Oct. 26, 1925.

age is an indication of their future ability. Interruptions as a result of strikes of mine employees are still a possibility and will be so long as the mine workers' organization sets its face against the peaceful settlement of wage disputes in the union fields, but even interruptions from that source will be less felt today than at any time for many years, on account of the growth of so-called non-union production.

Advocates of interference who base their demand on occasional interruptions of supply or advances in price, should be made to explain in detail how they think the situation can be remedied by governmental action. Regulation of the mining end of the industry will not make good deficient transportation, and unless a soldier is to stand at the back of every miner, no governmental orders will compel men to mine coal against their will. Strikes do not become an impossibility through governmental operation or regulation, as is shown by the history of our railroads since the establishment of the Interstate Commerce Commission. Peace in the mining industry could be purchased even by governmental agencies only at the expense of yielding to every demand of the mine workers.

(2) *Must the government deprive "monopolistic bituminous mine owners of their ill-gotten gains?"*

When mine prices are high some operators make money. During the runaway market of 1920 a few operators made big profits. The public became convinced that big profits were a normal characteristic of the bituminous coal mining industry and it became fashionable to speak disrespectfully of coal barons and coal profiteers. Here again let us briefly consider how much truth there is in the charge and what remedy the government would have to offer.

The normal condition of the bituminous coal mining industry is one of low mine prices and little or no profit for the operator. For many years before the war it is unquestionable that the bituminous coal mining industry operated on a lower margin of profit than any other important mining or manufacturing industry in the country. During and immediately after the war prices were relatively higher. Today, however, the industry is running true to form and is again fueling the country at little or no profit to itself.

### PROFIT WAS LESS THAN TAX

What the slump in prices that occurred in 1921 after the so-called run-away market in 1920 meant in terms of profits to the bituminous coal mining industry may be seen from the fact that of the companies reporting to the income tax unit on that year's transactions more than half showed a loss on the year's operation, and the net gain to the entire industry, obtained by deducting the losses of the unprofitable operations from the gains of the profitable companies, was less than the amount paid as tax to the federal government. In other words after taxes were paid, the entire industry showed in red ink in the ledger the results of the year's operations. The condition today in that respect is not far different from the condition in 1921.

Even if it were true that at current prices some operators made large profits, how would the government go about correcting that situation? So long as coal must be mined from operations with higher costs, the price must be high enough to induce operators of such mines to turn out coal. Is the government going to insist that the operator with the low cost operation must sell his coal at a low price in the same market in which the coal of the high cost operator is sold at a high price? Such an attempt would be doomed to failure not only because of the impossibility of tracing individual shipments of coal to make sure that their selling price did not yield more than the government regarded as a fair margin above cost, but the confused market conditions that would result would cause far more loss to consumers of coal than would be involved in paying a quite uniform market price regardless of cost.

(3) *Should the government require the elimination of surplus mine capacity and a less wasteful operation of the mines?*

Much is heard about the one-third excess of mine capacity and the 200,000 excess coal miners.

Undoubtedly if every bituminous coal mine in the country operated 300 days in the year, more coal would be produced than the country could consume, but as a matter of fact, surplus producing capacity is a typical and healthy characteristic of a rapidly developing industrial community. I very much doubt whether the much bruited excess in the bituminous industry is any greater than in many other lines of activity.

### WOULD PREVENT EXCESS CAPACITY

It has been suggested that the government should acquire title to all bituminous coal deposits and should lease the privilege of operating under such regulations and restrictions as would prevent the development of excess capacity. I need not dwell upon the difficulty or practical impossibility of determining just what is necessary and what is excess capacity. It would be the most short-sighted of policies to limit mine capacity to the point where a sudden demand for a large output could be met only after opening and equipping new mines.

Then there is the inevitable tendencies which would develop in a democracy like ours for any bureau having such tremendous powers as would be involved in the authority to regulate the opening of coal mines all over the country, to use that power to further personal ambitions, personal friendships or political expediency. Such a power would go far beyond that now lodged in any federal agency, even the Interstate Commerce Commission.

Surplus labor in the industry is not held there by force of arms. The door of employment swings outward as well as inward. In modern machine-equipped operations, bituminous coal miners are no longer especially skilled men. Unskilled labor is mobile labor and can easily flow from industry to industry. Unskilled labor is in demand in this country owing to the restrictions put upon immigrants coming from other countries. And yet in 1923 there were nearly 10 per cent more men in bituminous mines than in 1920 producing about 1 per cent less coal. Is it any wonder that the average days worked dropped from 220 in 1920 to 179 in 1923? Thus there was no flow of labor away from bituminous coal mining.

Figures become still more significant if we compare the record of the three union states, Ohio, Indiana and Illinois, on the one hand, with that of the two predominately non-union states of Kentucky and West Virginia on the other hand. Production in the three union states in 1923 was 11 per cent less than it was in 1920, while the number of men employed in the same states in 1923 was 12 per cent greater than the number employed in 1920. On the other hand, production in the two non-union states was 22 per cent larger in the later year and the number of men employed 16.8 per cent greater. These figures being interpreted mean that in the non-union fields, demand for increasing production was met partly by more efficient operation and partly by increasing the labor force, whereas in the union fields just named, with their high wage scale, the number of men increased 12 per cent at the same time that the output diminished 11 per cent.

The point that I am leading up to is this: It is easy to deflate mine capacity. Unprofitable mines will close voluntarily or under compulsion in due time. It is not so easy to deflate the labor supply of an industry whose rates of pay and working conditions are so attractive that more and more men flock into it at the very time that the number of days of operation is falling off.

There is one way to deflate the labor supply, and that is to allow economic forces to work themselves out, and to reduce the inflated wage scale to a point where the earnings of part-time operation will no longer be so attractive as to draw a constantly increasing supply of men into the industry. That one and only method of deflating labor in the industry is the one method which no government in a democratic country could undertake to enforce. There are unmistakable evidences that natural economic forces are rapidly accomplishing this reform.

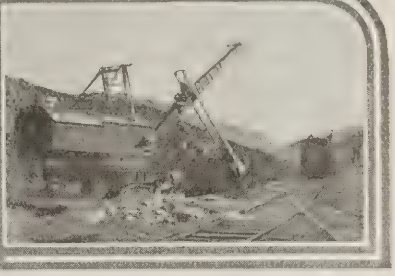
There are people so seemingly ignorant of what is going on about them and so apparently incapable of learning from experience as to advocate governmental interference in the coal mining industry for the sake of promoting efficiency. It has been a common-place of economic philosophy since the days of that canny Scotchman, Adam Smith, that governmental handling of industrial matters is sure to be inefficient. For evidences of the wisdom of that doctrine we need look no further than to the record of our own government's handling of railroads, airplanes and ships during and since the war.

Bituminous coal operators are not as inefficient as critics of the industry seem to believe. In the matter of extraction, for instance, whether 60 per cent or 80 per cent or 90 per cent should be extracted depends largely upon the prices which consumers are willing to pay for coal. Practically 100 per cent extraction is possible if the operator can obtain a price to recoup him for the large expense involved. If the government is going to undertake to obtain a higher percentage of extraction, it must compel consumers to pay the price.

**These Mining Men Are Keen to Swap Ideas**

Every year the Southern Mining Co. holds a technical conference for its own mechanical and electrical men and those of its affiliated companies at Williamsburg, Ky. It is a sort of mining institute where operating ideas from the several mines are discussed. This year the attendance reached 100. Part of the group is shown in the large picture below. F. A. Signer, electrical engineer, who presided at all the sessions for two days, had to be carried into the hall (see inset) and used a wheel chair, thanks to a broken leg and sprained ankle suffered in an accident underground. Bearing him out of the automobile are: G. L. Birch (left), chief electrician of the company's Balkan mine, and Bryan Harkness, chief electrician of the Insull mine.

# News Of the Industry



## Rumors of Peace in Hard-Coal Strike Denied by Operators and Union Heads; Coolidge Asked to End Suspension

Unqualified declarations on Oct. 26 by both operators' and miners' leaders that no settlement proposal was under consideration or in prospect indicated that the possibility of peace in the hard-coal field was not yet in sight. Speaking for the producers, Samuel D. Warriner, chairman of the Anthracite Operators' Conference, told General Charles W. Berry, chairman of the New York State Coal Commission, that "there isn't even a hen on the nest." John L. Lewis, president of the United Mine Workers, was equally emphatic in denying peace reports, declaring that the 158,000 hard-coal miners are standing firmly for the demands served on the producers.

Mr. Warriner said there was not the slightest chance of an early settlement of the strike, as the operators were determined to fight to "a final showdown" in the effort to reduce "labor cost per ton" and obtain a guaranty that the miners will not strike in the future when a contract expires and a renewal is being negotiated. While the vigor of these denials would seem to foreshadow a long and bitter struggle, it is recalled that in the past equally blunt statements have been quickly followed by a resumption of negotiations.

Reports that were current throughout the anthracite field over the week-end and which were given publication in daily papers in the region as well as in New York and Philadelphia to the effect that a compromise had been effected between the miners' union and operators were emphatically denied by officials of both interests.

### Name Father Curran as Mediator

The story had it that the operators, through the mediation of Rev. J. J. Curran, of Wilkes-Barre, had advanced the proposal to the miners that a 5 per cent increase in wages and a modified form of the check-off would be granted in exchange for a long-term agreement.

W. W. Inglis, chairman of the anthracite operators' negotiating committee, when interviewed concerning the rumor, declared: "Reports that the anthracite operators have offered the mine workers a 5 per cent increase in wages and that we have partially accepted the check-off demand are absolutely and entirely untrue. My first knowledge that such a proposition had even been spoken of came when I read the reports of the rumor in the press. The statements are without foundation."

When asked if there was any likelihood of an early resumption of mining Mr. Inglis said: "From present indications I would judge that it will be quite a while before work is resumed."

Thomas Kennedy, international secretary-treasurer of the miners' union, flatly denied the story of the reported proposal, as did Chris J. Golden, president of District 9, United Mine Workers. Both are members of the miners' scale committee. The Philadelphia headquarters of the miners' union also issued a denial of the report.

It is understood that the proposal was actually made by Father Curran to John L. Lewis, president of the union, at Atlantic City some weeks ago, but without the authority or knowledge of the operators.

President Coolidge, Governor Pinchot of Pennsylvania, and John L. Lewis, international president of the United Mine Workers, were asked to aid in an early settlement of the "suspension" in a resolution adopted Oct. 23 by the Bronx Grand Jury, New York City. The resolution followed a hearing on coal conditions in that borough at which Major Gen. Charles W. Berry, chairman of the State Coal Commission; Edwin J. O'Malley, Manhattan Commissioner of Markets; Chief Sanitary Inspector Joseph Lonergan, representing Dr. Frank J. Monaghan, Health Commissioner, and Roderick Stephens, vice-president of the Stephens Fuel Co., Inc., were among the witnesses.

The resolution stated that "a distressful condition has arisen and that unless immediate steps are taken to adjust the present strike, untold misery and suffering will befall many poor families in our country. In order to prevent the dire consequences resultant from a continuation of the strike we urgently and respectfully ask you to take such steps as will bring about an immediate and peaceable settlement between the operators and miners."

Many dealers object to laying in heavy stocks of soft coal, contending that an unexpected ending of the strike would find them loaded up with soft coal which they could sell only at a loss. On the whole, said Major Deegan, foreman of the Bronx Grand Jury, the coal trade had acquitted itself commendably in its expressed willingness to co-operate in the present situation.

**Major General Charles W. Berry**

Chairman of the New York State Coal Commission, recently revived by Governor Smith to act in the emergency brought about by the suspension of operations at the anthracite mines, advises the public to lay in soft coal at once, "and not wait until dead of winter." He also abandoned his previous stand on $16 as a "fair price" for anthracite, saying that "there is no anthracite."

General Berry said that rumors of a strike settlement which had drifted in from the mine fields were not borne out by opinions he had received "from men supposed to know something about the mines." He quoted his informants as saying the strike "is going to be fought out and there is not likely to be an end within six months." On the other hand, he said, Wall Street men who were generally well informed had held that the strike would end soon.

Spokesmen for the mine workers' union said positively that nothing was under way to their knowledge, and, further, President Lewis, it was learned, is scheduled for addresses at Shamokin and Mahanoy City, Pa., on Oct. 29.

Unless New York City coal dealers provide an adequate supply of soft coal and sell it at reasonable prices, Major Gen. Charles W. Berry, chairman of the New York State Coal Commission, asserted Oct. 24 that he would urge the city to open municipal coal depots for the sale at cost, of soft coal and other substitutes for anthracite.

"The commission," he said, "is making every effort to persuade dealers to obtain soft coal, but if they fail to do so we must act in the name of public welfare and see if the city authorities cannot provide fuel for the people.

"There is no doubt in my mind that

### *Urges Retailers to Stock Substitute Fuels*

"Stock substitute fuels," was the warning sent out to the country by the board of directors of the National Retail Coal Merchants' Association at a meeting held at Toledo, Ohio, last week. "Pending the resumption of anthracite mining," the board urged "all retail merchants who deal in hard coal to immediately obtain a supply of substitute fuels, sufficient to offset the loss of tonnage due to the refusal of the miners to continue at work pending negotiation of a new working agreement in the hard coal fields."

The board also recommended full co-operation with all properly constituted public authorities "in every practicable effort to assure equitable distribution of available supplies and the avoidance of hoarding, speculation or unreasonable prices." In a third resolution the directors asked the producers to discourage pyramiding by stipulating that coal sold to a jobber should not be resold to another middleman. The same resolution called upon retail dealers to confine their sales to established team and consumer (household) trade.

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if there were places in New York City where anybody could buy soft coal at a reasonable price there would be an end to the present situation."

Health Officer J. J. Hagan, Fuel Administrator of Jersey City, announced that he had obtained 1,000 tons of anthracite from Pennsylvania, which would arrive in Jersey City this week and be sold to poor families at 60c. per 100 lb., a rate equal to $12 a ton. Peddlers in Jersey City are now charging $1.25 per 100 lb.

Mr. Hagan said the city coal would be distributed by city employees with city shovels and city trucks, and would be sold only in small lots to persons who could not afford to buy in the open market. The coal was originally bought by a Western firm, which cancelled the order, and it was obtained while in shipment by a Jersey City firm, which turned it over to the city at cost.

Hagan told of taking an option on all the Welsh coal he might want at $18 a ton, which he said would mean $21 a ton on this side of the Atlantic, and of planning to import it if the famine became acute.

S. A. Wertheim president of Burns Brothers, New York City, who arrived on the "Berengaria" Oct. 24, said that he had made large contracts for shipments of British anthracite to New York and that two 5,000-ton ships had already left laden with the fuel for this port.

Mr. Wertheim declined to tell how much coal he had bought in England. He said that he would not comment on the coal situation in New York until he had conferred with the directors of Burns Brothers.

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# Anthracite Field Has 670,000 Tons Of Domestic Coal Now, Survey Shows

By R. J. Arthur
Scranton, Pa.

The volume of anthracite coal left in the field or in railroad yards near the producing districts is small, judging by a survey made for *Coal Age*, Oct. 24. The total of domestic sizes is estimated at 670,000 tons and of steam sizes (buckwheat and smaller), 1,190,000 tons. These tonnages were determined with indifferent assistance from anthracite producers and official agencies. Statements from these sources were withheld because of the difficulty of arriving at definite figures, due to constantly changing tonnages at various storage points.

By observation and from unofficial sources the following information was obtained:

In the Hampton storage plant of the D. L. & W. Coal Sales Co., at Scranton, about 200,000 tons of coal is stored. About half this quantity is domestic fuel. In one trimmer 70,000 tons of chestnut coal reposes; about 40,000 tons of pea coal and approximately 90,000 tons of buckwheat comprises the remainder of the storage. In cars on the D. L. & W. R.R. throughout the anthracite field between 60,000 and 70,000 tons of coal, domestic and steam sizes, is said to be awaiting shipment. Lines of filled cars are in evidence on sidings and switches throughout the Northern field. A representative of the D. L. & W. Coal Sales Co. declared that the company "has enough coal to last throughout the suspension." It is understood that a rationing system is in effect by this company and that hospitals, charitable institutions and industries which have a direct bearing on the public welfare will be the first among its customers to be served. This policy is said to be in effect by other distributors also.

The Hudson Coal Co. has instituted a program which calls for the rapid movement of stored coal. This is evidenced by the fact that the company has emptied its Carbondale (Pa.) trimmers of 400,000 tons of prepared sizes since the suspension started. Dealers in Hudson coal are required to stock the fuel in their own storage plants. Storage of Hudson company coal at Parsons, Pa., is estimated to total 70,000 tons. This is birdseye coal. In Olyphant, Pa., the Hudson storage piles contain about 300,000 tons of buckwheat coal.

The Lehigh Valley Coal Co. at its Ransom (Pa.) storage plant has about 25,000 or 30,000 tons of pea coal. This does not represent one-half of the total storage in piles and cars held by that company's coal selling agent.

The Scranton Coal Co. at its Cadosia and Middletown (N. Y.) storage plants two week ago had approximately 350,000 tons of coal, the greater part of which was domestic fuel. This coal is being moved rapidly.

In the lower field the Philadelphia & Reading Coal & Iron Co. is said to have larger storages, especially of smaller sizes, than any of the other hard-coal producers.

No estimates were available on the Lehigh Coal & Navigation Co.'s storage.

The Temple Coal Co. of Scranton is said to be in about the same condition as the Scranton Coal Co. Other independents throughout the region are understood to have a total of 800,000 tons of various sized coal on hand.

Reports from all of the "old line" companies and their selling agencies quote prices the same as those which prevailed previous to the suspension of mining. A check is being made on dealers by the sales agencies in an effort to uncover profiteering. A threat of loss of supply is held over the heads of dealers or retailers who sell coal at premium prices.

**Anthracite Tonnages Now in Storage in Piles or on Wheels, Estimated**

| | Domestic Sizes | Buckwheat and Smaller |
|---|---|---|
| D. L. & W. Coal Co., Hampton Yards . | 110,000 | 90,000 |
| D., L. & W., on cars elsewhere ....... | 30,000 | 30,000 |
| Hudson Coal Co... | ...... | 370,000 |
| Lehigh Valley Coal Co. .............. | 30,000 | ...... |
| Scranton Coal Co., in yards ........ | 100,000 | 100,000 |
| Temple Coal Co.... | 100,000 | 100,000 |
| Other independents | 300,000 | 500,000 |
| Totals .......... | 670,000 | 1,190,000 |

## Johnstown Men Discuss Top Rock Blasting

At the first 1925 meeting of the Pennsylvania Coal Mining Institute of Johnstown, in Johnstown, on Friday, Oct. 16, the blasting of top rock as a means of preventing the cutting and breaking of roofs in mines was one of the practical theories advanced by mine officials and employees. President Charles Enzian, of Windber, presided and led the discussion. Safety lamps and other safety appliances and measures were discussed. Secretary William Flemming of Johnstown presented a financial report of the Institute.

Among those who took prominent parts in the discussions were Nicholas Evans, local mine inspector; John Ira Thomas, mine inspector; A. E. Roberts, of Revloc; A. C. Cook, Windber; Lewis Evans, Cardiff Coal Co.; David Davidson, Nant-y-Glo; Martin Ankeny, Johnstown, and Prof. W. G. Duncan, State College. It was planned to hold meetings in the future every two months, the next session to be held in December. The executive board of the Johnstown branch is composed of Prof. W. R. Chedsey, State College; Dennis Boyle, Johnstown; Patrick Frear, Seward; Patrick Nairn, Johnstown; Archie Miller, Cairnbrook; Professor Duncan, Mr. Evans and Mr. Thomas.

# Survey Shows Bitter Anti-Anthracite Campaign in New England

Previous to and during the suspension of anthracite mining, which is now ending its second month, the anthracite operators, as well as other agencies, pointed out that a cessation of anthracite production would result in further loss of hard coal markets, especially in New England. President Lewis, of the United Mine Workers, scouted this prophecy on the basis that the installation of special apparatus to burn oil was too costly, that oil itself was a more expensive fuel than hard coal and that bituminous coal would be generally unsatisfactory.

After a trip to the section involved and consultations with governmental organizations, coal-trade leaders and others concerned, a *Coal Age* correspondent reached the following conclusions:

> New England, through government and civic organizations, is conducting a far-reaching campaign to displace by substitute fuel 10,000,000 tons of anthracite which is used yearly in that territory. And further, the campaign is meeting with success.
>
> Anthracite is being singled out, pictured as an ogre and practically boycotted.
>
> Coal consumers in New England feel they are being tricked and mulcted by the anthracite industry. They are sure they are being made the goat of profiteers. Collusion between the producers and the miners' union is charged openly. Recurring strikes and suspensions are regarded solely in the light of trade politics to bring about an advance in the price of the commodity concerned.

Since the present suspension of mining the consumers in the northeastern states have assumed a determined attitude. They are going to destroy what they term "the anthracite bogey." The reassurance is given New England coal consumers that bituminous coal can be adopted readily, with little or no more trouble than anthracite and with less expense.

### Attack Supply, Quality and Price

New England is basing its case against anthracite on three fundamental objections: uncertainty of supply, poor quality and high price. Another argument advanced against the continued use of hard coal is summarized in a recent statement by the New England Governors' Fuel Committee as follows: "Experts report that the easily mined anthracite is being rapidly exhausted, and in the future the cost of mining anthracite will increase." It is then added, "Geologists estimate the supply of bituminous coals to be adequate for more than 2,000 years; consequently, the ultimate depletion of bituminous coal is not a factor affecting the price to the present generation."

The New England Governors' Fuel Committee is the principal agency in the campaign against the use of anthracite. It is headed by John Hays Hammond, a national figure. Eugene C. Hultman is vice-president and Bernard P. Scanlan is secretary of the committee.

The commissioners explain that the only power they wield is that of public opinion and this they endeavor to create favorably toward the use of anthracite substitutes through the medium of newspapers. They are getting unprecedented co-operation both editorially and in the news columns of New England papers.

The issuance of pamphlets and circulars also is a part of the day's work. These are distributed to consumers, to public organizations, chambers of commerce, Rotary and Kiwanis clubs and other civic organizations. Speeches advocating the use of substitute fuels are "always in stock."

Not a small part of the work of the fuel committee is the assistance it is giving to retail coal dealers in the actual handling of bituminous coal. Sources of supply, quality, freight rates and methods of shipment of bituminous coal as well as other pertinent facts regarding soft coal are regularly sent out to dealers.

### Distributed Under Rationing System

At the present time New England is short three million tons of its annual supply of anthracite. According to the best available figures the northeastern states have less than seven million of the ten million tons of anthracite which they burn annually. The tonnage now stocked in coal yards is being distributed under a rationing system and with what approaches discrimination. The retail marketing is being done on a "substitute selling" plan, by which the retailer induces the customer at first to take deliveries of both hard and soft coal. Later the buyer gets nothing but soft coal.

New England is primarily concerned, however, with its industrial welfare. Comparison shows, according to a statement issued by the Governors' fuel committee, that the annual household heating bill of New England is at least double that of other sections of the country having a similar climate and with which it competes industrially. Translated into dollars this means that about $70,000,000 a year additional is included in wages and living costs in New England due to its dependency on anthracite.

There is a saving grace in the situation for the anthracite producers—with conditions. The present price of anthracite delivered in the cellars of consumers in New England is being paid with little complaint. By reason of the campaign against the fuel, however, anthracite will gradually lose its market in the Northeast. An indication that it has been losing its market continuously is shown in that its tonnage has not increased in the past half-dozen years, despite increases in population and homes.

### Supply Must Be Assured

The anthracite producers' best weapon in combating the campaign against them is the assurance to New England consumers of continuous supply of fuel. This can be done only with the co-operation of the men who mine the coal—through agreement with the United Mine Workers. That such an agreement would benefit the worker as well as the owner goes without question.

**Samuel A. Taylor**

Pittsburgh's choice for A.I.M.E. president is a graduate of the Western University of Pennsylvania (now University of Pittsburgh), of which he is now a dean in charge of the School of Mines. He was technical adviser in the Fuel Administration during the war and in 1912 was the president of the American Mining Congress. He also is a coal operator, banker and consulting engineer.

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Figures on the shipments of various fuels to New England in 1922, 1923 and 1924, which will undoubtedly prove of much interest to those studying the fuel situation, follow:

RECEIPTS IN 1922

| | |
|---|---|
| Anthracite (strike), tons | 6,471,000 |
| Bituminous, tons | 18,807,000 |
| Mineral crude oil, gallons | 749,192,000 |

(About four barrels of oil—168 gallons—equals one ton of bituminous coal in heat value.)

RECEIPTS IN 1923

| | |
|---|---|
| Anthracite, tons | 12,184,000 |
| Bituminous, tons | 23,684,000 |
| Mineral crude oil, gallons | 582,581,000 |

RECEIPTS IN 1924

| | |
|---|---|
| Anthracite, tons | 10,608,557 |
| Bituminous, tons | 18,894,267 |
| Mineral crude oil, gallons | 637,270,000 |

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# Veil Hoover Committee Plans Till Washington Meeting

An agreement that no publicity be given the findings of the subcommittees studying the work of the U. S. Bureau of Mines until final action shall have been taken on them by the whole advisory committee was adopted by the committee at its Pittsburgh meeting, last week. Another meeting of the committee is to be held early in November in Washington.

Every effort is being put forth to expedite the work of the committee, in order that the reorganization of the Bureau will indicate to Congress that the mining industry is prepared, through that agency, to do voluntarily some of the things which certain legislators would make compulsory. While the only drastic legislation likely to be proposed at this session of Congress will apply to coal, it is recognized that the prescribing by law of a program of returns which must be made by coal producers would establish a precedent which soon would be applied to other commodities entering into general use.

## One Dead, Four Injured In Attack on Employees Of Pittsburgh Co. Mine

In the first labor trouble growing out of the resumption of work on the 1917 scale in the Pittsburgh district, six men, all negroes, employed at the Midland Mine of the Pittsburgh Coal Co. battled their way to freedom after being attacked by a mob of 100 men at Houston, Pa., last Saturday night. One of the attackers was killed and four others were slashed. James Johnson, of Jeannette, and Arthur Thornton, of Pittsburgh, both negroes, were arrested and lodged in the Washington County jail.

The Pittsburgh Coal Co. issued a statement Oct. 26 in which it condemned the action of the union sympathizers and announced that it would "afford its employees the fullest protection, both legal and otherwise."

With Banning Mine No. 2 setting a new daily record, the three mines of the Pittsburgh Coal Co. in the Pittsburgh field operating under the November, 1917, scale, produced a total of 2,295 tons of coal in a single day, it was reported by the company Oct. 24. Banning No. 2, the pioneer mine, near West Newton, loaded 1,239 tons in a single day; Banning No. 1 loaded 638 tons, and Midland Mine, near Canonsburg, which was opened a week ago, loaded 418 tons. Each of the three mines made a new daily record.

The number of men working at the three mines is 637, divided as follows: Banning No. 2, 271; Banning No. 1, 196, and Midland No. 1, 168.

Robert Baughman is superintendent at Banning No. 2, Oscar Steckman at Banning No. 1 and John Bartrom at Midland No. 1. William Lauder is division manager in charge of the Youghiogheny Valley and H. M. White is the division manager in charge of the Midland operations.

## Connellsville Coke Ovens Blowing in Rapidly

In the Connellsville (Pa.) coke region the H. C. Frick Coke Co. has fired 200 of 352 ovens at the Whitney plant, and is firing the remainder and 50 additional ovens at Hostetter. The number of ovens in blast at the Mammoth and Marguerite plants also is being increased and by the end of this week 770 more ovens will be in than last week. The Hustead-Seamans Coal & Coke Co. has fired all its idle ovens at East Middlesboro. The Century Coke Co., at Brownsville, has all but 15 of its 205 ovens at work. The Hillman Coal & Coke Co. has all its ovens going except some at the Isabella and Brownsville plants.

The Baton Coal & Coke Co. is firing all but 7 of its 142 ovens at Linn, near Brownsville, and 240 at the Sunshine plant, near Martin. The Etna Connellsville Coke Co. is resuming operations and firing all of the 119 ovens at the Garwood plant, and the Southern Connellsville Coke Co. is firing the 64 ovens at the Marion plant. The Sterns Coal & Coke Co. is firing the 132 ovens at the Eleanor plant, between Brownsville and Uniontown. The champion Connellsville Coke Co. has resumed operations and fired 40 ovens near Brownsville.

All sorts of crushing and screening schemes are being adopted to produce different sizes of domestic coke to ship into anthracite consuming territory. Coke breeze from the yards is being screened and old breeze piles scraped up and screened to produce nut coke. Screened sizes of domestic coke range as high as $8 and $8.50, and screened breeze $6.50 and over at ovens in the Eastern market.

### *Home Coal from Factories*

Henry L. Shattuck, a Boston attorney and a former member of Massachusetts Commission on the Necessaries of Life, is urging the industrial companies of the state to screen their coal supplies and sell the large sizes to their employees. This is being done to increase the use of bituminous coal.

## Soviet Buys Locomotives Here for Mines

The Westinghouse Electric International Co. has just received an order from the Amtorg Trading Corporation, the commercial representatives of the Soviet Government in America, for twenty-five mine locomotives to be used in connection with the electrification of the coal mines in the Donetz district, near the Black Sea, in Russia.

Some of these locomotives will be trolley and the remainder are of the storage battery type. A distinctive feature is that they will have adjustable wheel gages so that they can be operated on tracks of from 24 to 30 in. wide.

### *Big Doings in Coke*

In the Uniontown-Connellsville district, where the fuel industry has been awakened from a lethargy of several months, due to the demand from the East for anthracite substitutes, independent coke operators without crushing equipment have put gangs of men to work with sledge hammers breaking coke. Crushed coke brings a premium of $2 a ton over regular 48-hr. furnace coke.

As has happened many times in the past, the operations that are making the most of the present situation are those that do not have permanent blast furnace contracts. The backbone of the coke producing industry in the beehive field is a few large companies and their product is moving to blast furnaces on $3 or $3.25 contracts in spite of the $8 market for furnace coke. The H. C. Frick Coke Co., however, is selling some domestic fuel for the first time in its history, according to reports.

## Carnegie Coal Co. Bankrupt But with Large Assets

The Carnegie Coal Co., formerly dominated by John A. Bell, bankrupt coal operator, was placed in receivership on Oct. 21 in United States District Court at Pittsburgh, Pa., following the filing of an equity suit by the Harrison National Bank of Cadiz, Ohio, which holds an unpaid promissory note for $10,000, signed by the coal company. The court appointed W. M. Wilshire, sales manager of the coal company, and C. C. McGregor, vice-president and general manager of the Montour Collieries Co., temporary receivers, to conduct the affairs of the Carnegie Coal Co. The receivership acts as a supersedeas in a suit filed by Harry F. Sinclair, New York millionaire oil man, to obtain $125,000 on a promissory note.

The Ohio bank estimates the outstanding obligations of the Carnegie Coal Co. at $9,500,000, of which $7,500,000 is in first mortgage, 6 per cent bonds and other obligations and claims. The bank believes the assets of the coal company have an aggregate value in excess of the indebtedness. J. H. Sanford, president of the coal company, in an answer to the suit admitted the allegations, and joined in the request for the appointment of receivers.

The Carnegie Coal Co. was created Dec. 12, 1923, by the merger of the Carnegie Coal Co., Verner Coal & Coke Co., the Burgettstown Coal Co. and the Wabash Coal Co. During its existence the company was dominated by Mr. Sanford, then by Mr. Bell, and recently, when the latter became in financial difficulties, the control again reverted to Mr. Sanford and associates.

## "Power Show" May Teach Coal Burning Economies

The Fourth National Exposition of Power & Mechanical Engineering will open at 2 p. m. on Monday, Nov. 30, at the Grand Central Palace, New York City. It will extend through the week, ending Dec. 5, opening each day at noon. The basic purpose of the exposition is to bring together showings of manufacturers of power and mechanical equipment so that engineers and industrial executives may have an opportunity for comparative study of the outstanding developments in the field.

Devices to increase the effectiveness and economy of combustion will be presented at the show in distinguished array. Air preheaters, pulverized fuel equipment of all types, stokers, water-cooled boiler furnace walls, soot blowers, and draft apparatus will be shown. One of the features of this group of exhibits will be the showings of recent developments in the more economical use of pulverized fuel. This will include new designs of boiler furnaces, several new types of burners for pulverized fuel and the latest achievements in crushing and drying coal. The managers of the show are Fred W. Payne and Charles F. Roth, with offices in the Grand Central Palace.

# Strike Call to Non-Union Miners In West Virginia Seems Doomed To Failure as Production Mounts

The second strike call by the United Mine Workers to the non-union miners of northern West Virginia seems to have fallen on deaf ears, and the daily non-union coal production is gradually working back to where it was prior to Sept. 25, when the last strike was declared. The general feeling is that the union has lost out unless a runaway market develops, and that is practically impossible with the present heavy flow of bituminous coal all over the country.

In an effort to furnish grist for his mill, Van A. Bittner, chief international representative of the United Mine Workers in northern West Virginia, is doing his level best to discountenance the daily production figures announced by the non-union coal operators in the Fairmont field.

"Admitting for the sake of argument, that these figures are correct, which is far from the truth," Bittner says, "we find that 203 non-union mines loaded 1,649 cars of coal" in a day, "which is an average of only 8 cars to the mine, while 16 union loaded 305 cars, an average of 19 cars per mine." Continuing, he says in part: "If these figures of the non-union operators' propaganda bureau were true, it demonstrates that each union mine that is in operation is really two and a half times as efficient as the non-union mines.

"The actual car rating of these non-union mines is more than three times as great as the actual number of cars being loaded. This is another demonstration that even according to the operators' own figures they are getting less than one-third of their production at the non-union mines that are attempting to operate."

### Union Seeks Referee

The union miners are resorting to the old play of involving the clergy and the newspapers to referee their bout with the coal operators. This developed recently, when Bittner issued a statement in which he set forth the following challenge: "If the members of the United Mine Workers are not in favor of the policies inaugurated by the officers of the union who are now in charge in northern West Virginia, then we are willing to leave this section of the country."

The challenge was made after George S. Brackett, head of the Brackett Statistical Organization, was purported to have said in an address before the American Mining Institute in Washington, D. C., recently that the international union destroyed the autonomy of the miners of northern West Virginia and left them without control over their own affairs, according to Bittner.

After a long statement in which personalities play a big part, Bittner suggests that he and Brackett make a round of the union miners in the field and ascertain if this is true. He suggests that newspapermen or clergymen of all of the Christian churches of northern West Virginia accompany them to ascertain the facts first-hand.

In the first four days of last week the non-union mines in northern West Virginia produced 6,427 cars of coal compared to 6,821 cars in the corresponding period of the previous week. There was a slight increase in non-union tonnage along the Monongah Division, B. & O., and the Monongahela toward the approach of the week-end, but no records were broken. Non-union production was reduced considerably along the Western Maryland branches in northern West Virginia, due to car shortage and the rail engine men's strike.

Union tonnage increased slightly in the region last week. In the first four days of the week 1,179 cars of coal were produced, an increase of 22 cars compared to the first four days of the previous week. Union mines in the region loaded 312 cars of coal on Oct. 22, the largest day's output since Oct. 13. Union operations along the Monongahela loaded 224 cars of coal Oct. 22, which was the largest daily union production since the strike began, April 1.

Despite the wintry weather the United Mine Workers continue to hold mass meetings in the region. Gatherings are held in halls most of the time now. Recent meetings were held at Monongah, Watson, Brady, Lumberport and other mining towns.

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## Detroit Retailers Will Educate Public

The movement for better public education in coal consumption was forwarded Oct. 27 when the coal retailers of Detroit formed the Detroit Fuel Research Institute. This body expects to advance the cause of coal by showing the people of the community how to get the most out of their fuel.

## *Non-Union Miners Would Enjoin Prayer Meetings*

An action unprecedented in labor disputes in the Southwest was taken Oct. 6 by non-union miners in Oklahoma, when they filed an intervening petition in connection with operators' application in the U. S. District Court at Oklahoma City for an injunction against the United Mine Workers to prevent interference with workers in Oklahoma mines. The application of the non-union miners was directed principally against the "prayer meetings" which union men have been holding in the vicinity of the mines since the strike was called on Sept. 1.

## *Lilley Mine on 1917 Scale*

The Lilley Coal & Coke Co., with head offices in Charleroi, Pa., is reported to have started its Lilley Mine, near California, Pa., on Monday morning of this week on the 1917 wage scale. The normal complement of the mine is 400 men. This is the third company that has started operations on the 1917 scale in the Pittsburgh union district.

## Eleven First-Aid Teams in Tennessee Meet

Tennessee's thirteenth annual first-aid contest was held Oct. 3, at the East Tennessee Division Fair, Knoxville, Tenn., under the auspices of the Southern Appalachian Coal Operators' Association, Tennessee Mine Inspectors, East Tennessee Fair Association and the U. S. Bureau of Mines.

Eleven teams were entered, the Pruden Coal Co. having three; Black Diamond Colleries Co., two; Campbell Coal Co., Clearfork Coal Co., Cambria Coal Co., Pioneer Coal Co., Lafollette Coal & Iron Co. and the American Zinc Co., one each.

The Cambria Coal Co. team took first prize, consisting of a silver loving cup donated by the Southern Appalachian Coal Operators' Association and $28 in cash. Second prize went to the Pruden Coal Co.'s Valley Creek team, which received a loving cup given by the Provident Life & Accident Co., Chattanooga, and $20 in cash; third prize to the Pioneer Coal Co., Kettle Island, Ky.; fourth prize to the Pruden Coal Co., Pruden, Tenn.

A feature of the meeting was a demonstration in a glass gallery of the explosibility of coal dust by George Grove, engineer of the U. S. Bureau of Mines, Pittsburgh, Pa.

The contest was judged by Knoxville doctors. Dr. Kile Copenhaver was chairman, assisted by Dr. Merryweather, surgeon for the U. S. Bureau of Mines, Birmingham, Ala., and George K. Brown, technical engineer for the du Pont Powder Co., Huntington, W. Va.

R. E. Howe, secretary of Southern Appalachian Coal Operators Association, chairman of the general arrangement committee, and J. M. Webb, of the U. S. Bureau of Mines, trained the teams for the contest.

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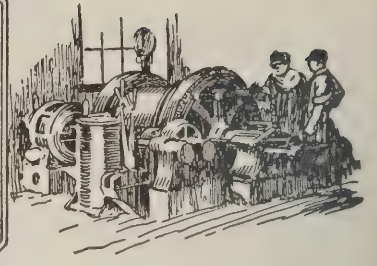
The National Coal Association has appointed the following committee to meet with the Trades Relations Committee of the American Wholesale Coal Association: A. W. Calloway (chairman), president, Davis Coal & Coke Co., Philadelphia; W. D. Ord, president, Empire Coal & Coke Co., Landgraff, W. Va.; H. N. Taylor, president, U. S. Distributing Corp., New York City, and Ezra Van Horn, general manager, Clarkson Coal Mining Co., Cleveland, Ohio. The American Wholesale Coal Association requested the National Coal Association to name a committee to confer with wholesalers on the subject of the open consignment of coal.

# Practical Pointers For Electrical And Mechanical Men



## Inexpensive Signal System Tells if Distant Fan Is Running

At Mine A of the Pike County Coal Corporation, Petersburg, Ind., the ventilating fan is located in a field about 900 ft. from the tipple and hoist house. This location makes it necessary to have an unfailing signal to indicate when the fan is in operation.

The signal system used is of the interrupted, closed-circuit type, as illustrated in Fig. 1. It consists of an incandescent lamp in series with an interrupting device on the fan shaft. The lamp is located in the hoist house, within normal range of vision of the engineer but shaded so that there is no irritating glare. The circuit is interrupted for about 1/25 of a second during each revolution of the fan shaft. This causes a perceptible winking of the lamp. The frequency of this winking indicates the fan speed, and failure to wink indicates that the fan has stopped or that the signal is out of order.

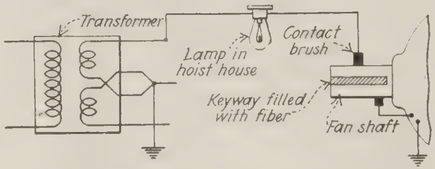


**Fig. 1—Circuit Arrangement of Indicator**

The lamp, located in the hoist house, is lighted continuously, except for a perceptible wink occurring once during each revolution of the fan. The indicator is connected to a grounded circuit, therefore but one line wire is necessary.

Inasmuch as the lamp is lighted from a grounded circuit, but one wire is carried from the hoist house to the fan. This wire is connected to a brush which makes contact to the periphery of the fan shaft. The keyway, which is in the path of the brush, is filled with fibre. The circuit is broken once during each revolution while the brush passes over this insulated section.

Fig. 2 is a close-up of the fan shaft and contact brush. The keyway does not show because the fan was in operation while the photograph was being made. On the other end of the fan shaft there is a copper ground wire which makes a continuous brush contact to the shaft. This is to avoid any possibility of the signal current affecting the bearing surfaces.

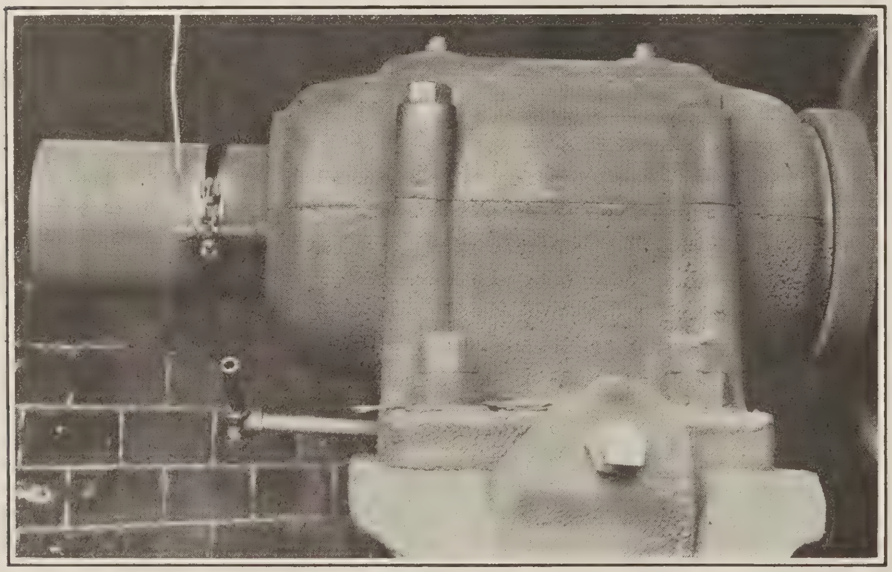


**Fig. 2—Contact Brush of Indicator, Mounted on End of Fan Shaft**

That part of the keyway which passes under the contact brush is filled with fiber. This insulated section causes the circuit to be broken for an instant during each revolution. On the other side of the fan a copper ground wire makes a continuous brush contact to the shaft, so that the signal current does not have to pass across the surface of the machine bearings.

## Homemade Press Proves Extremely Handy

Forcing bushings into or out of wheels or bearings is a job that requires a reasonable amount of precision. While solid bushings of this nature sometimes can be driven into or out of place by means of a drift and sledge, this procedure is extremely liable to batter the soft brass or other metal and seriously interfere with its usefulness and life.

The accompanying illustration shows a bushing press made and used in the shops of the Orient No. 2 mine of the Chicago, Wilmington and Franklin Coal Co., at West Frankfort, Ill. As may be seen in the illustration this device is extremely simple in construction and consists of a U-shaped channel iron provided with a cross-brace near the top, also of channel iron. An adjustable support for the part which is to be bushed is made of two channel irons which span the opening of the U. The bottom also is provided with angle-iron feet holding the entire press in an upright position. A threadbar and handwheel complete the press.

By means of a series of holes drilled in the two legs of the uprights through which suitable pins pass, the transverse support upon which the part to be bushed is placed can be raised and lowered to suit the conditions encountered. The pins can readily be removed and the crosspiece adjusted up or down as may be desired. Such a device as this finds frequent use in coal mine shops where much repair work, especially

**Easily Adjusted to Suit Work**

This device, built in the shop where it is now used, has been made of such a size as to accommodate practically any bushing work that the shop may be called upon to perform. The work support is easily adjustable up or down.

that on mining machines, locomotives and the like, must be performed. The particular device here shown has proved itself extremely handy in the shops at New Orient.

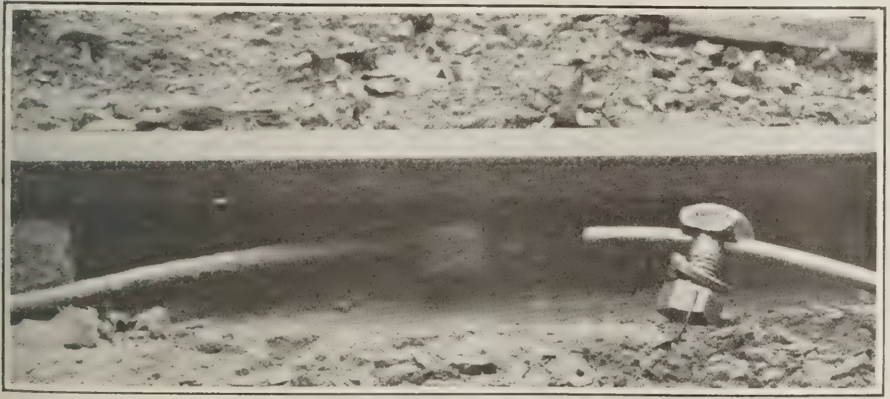
## Special Bolt Serves as Bond Terminal

In so far as permanent track is concerned there seems to be little demand for a better or less expensive rail bond than those now available, but for temporary track, such as in rooms and in certain entries, there seems to be a demand for an inexpensive but effective bond which can be removed easily and which will be in condition for further use. The accompanying photograph, taken at Nisbet No. 11 mine of the West Kentucky Coal Co. at Earlington, is evidence of this demand.

This bond consists of a short length of No. 00 solid copper wire clamped to the rails by means of bolts of special design. The application requires the drilling of a hole in the web of the rail, as is necessary also for bonds of the pin-driven, channel-pin, and compressed-terminal types. At the left in the illustration is the terminal of a bond which is in use, and at the right is one of the special bolts slipped onto a short piece of wire to show the method of installation.

### Provides Better Contact

The bolt is $\frac{11}{16}$ in. in diameter and $1\frac{5}{8}$ in. long, under the head. The hole for the No. 00 wire is drilled half in the head, and half in the shank, so that when the nut is tightened the wire is compressed between the bolt head and the web of the rail. This hole is $\frac{3}{8}$ in. in diameter, or about .01 in. larger than a No. 00 wire. The shank of the bolt is tapered between the end of the thread and the head, with the largest diameter at the head. The hole in the rail is the same diameter as the small end of the bolt, so that when the nut is tightened the bolt it pulled tightly into the hole. This feature provides for a better contact between the bolt and the rail and also helps to hold the bolt from turning while the nut is being tightened. The lock washer used is of the positive pattern.

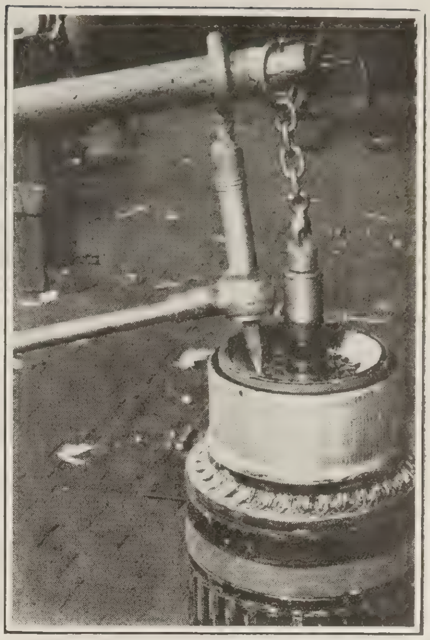


**Close-Up of Bonded Rail and Bolt**

At the right is a sample of the special bolt used in applying bonds such as that at the left. The hole in the bolt is large enough so that the No. 00 wire can be pushed through easily. Tightening the nut drifts the tapered bolt into the hole in the rail and compresses the copper between the bolt head and the web.

## Improvised Device Tightens Commutators Quickly

Loosening or tightening the flat headed cap screws holding the V-ring on the armature of a common mining machine usually is performed by the aid of a T-shaped screw driver and a wrench. This tool requires two men for its manipulation, one to push down on the screw driver and the other to operate the wrench. By this method it often takes two or three hours to tighten up a commutator. A special tool for this purpose by means of which one man can do the same work in fifteen minutes is shown in the accompanying illustration.



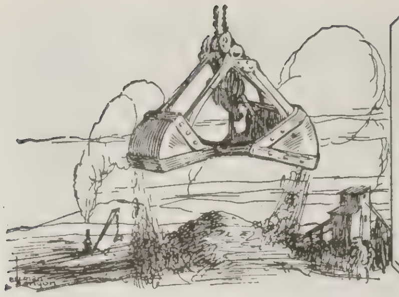
**The Cap Screw Must Move**

By the aid of this home-made device a commutator can be tightened by one man in fifteen minutes. He bears down on the lever with one hand and manipulates the rachet screw driver with the other.

### Construction and Operation

This tool consists of several parts. The first is a reversible ratchet into which is fitted a heavy screw driver bit. This ratchet is held down against the screw by means of a lever similar to a trolley pole. The lever fastens in a ring welded to the ball thrust on top of the ratchet and is anchored to the end of the shaft by means of a chain. A special fitting is provided at the lower end of this chain and screws into the tapped hole in the end of the armature shaft. This chain is fitted with a swivel to avoid twisting as the ratchet is moved from screw to screw around the circumference of the commutator during the tightening process. The man doing the work bears down on the outer end of the lever with one hand and operates the ratchet with the other. There is no slipping of the screw driver and no difficulty is experienced in exerting all the force upon the screws that they will stand.

This homemade device has been built and is used in the central repair shop of the Island Creek Coal Co. at Holden, W. Va. It is a typical example of some of the ingenious devices that have been developed in this shop.



# Production And the Market

## Bituminous Coal Market Shows Firm Tone; Prepared Sizes in Lead

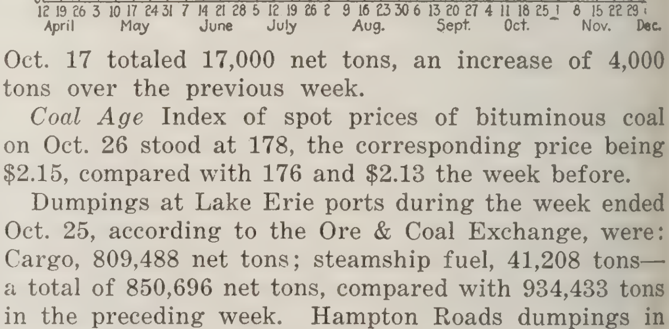
A much better tone pervades the bituminous coal trade, thanks to the stimulating influence of biting autumn temperatures over a large portion of the country. Naturally enough, the firmness is most marked in screened and sized coals suitable for domestic use. Less change is in evidence in the steam-coal business, though railroad consumption is heavy. Movement to the lakes is especially heavy for this time of year, 3,323 carloads having passed through Cincinnati in this trade last week. Embargoes were necessary on the Pennsylvania and B. & O. lines because of congestion at Toledo and Sandusky.

West Virginia smokeless is coming back strong, especially in the Middle West, where prices are mounting steadily. For that matter, Illinois and Indiana prepared coals are in such good demand that "no bills" are being cleaned up and unfilled orders are beginning to be in evidence. Screenings are a trifle weaker, however, due to the output having been too heavy for the market to absorb easily. Kentucky is getting better working time in all fields, some of the product replacing West Virginia coal now going to the East.

Seasonal briskness marks the trade at the Head of the Lakes and the Southwest. All-round firming up is in evidence at Cincinnati and the other Ohio markets also are somewhat stronger. Even Pittsburgh shows signs of a steady influx of strength. All the Eastern markets are steadily gaining except Baltimore, which is rather flat, and New England, where buying has eased off.

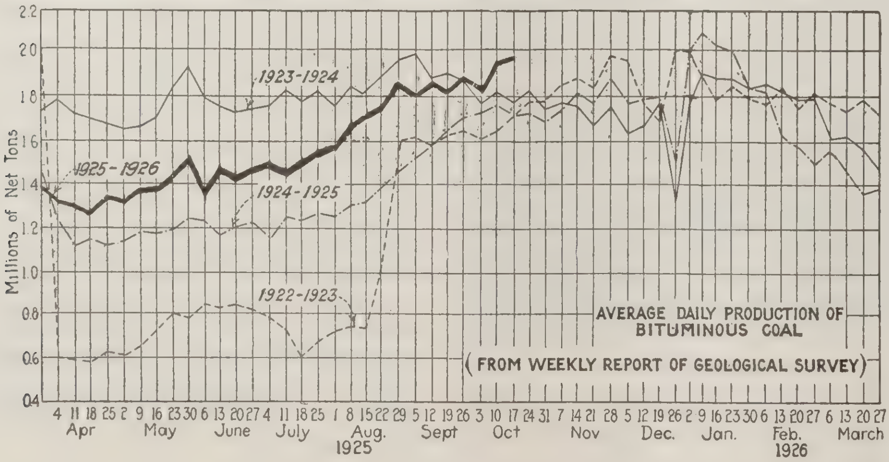
Despite rumors of a compromise being at hand, the end of the anthracite strike seems to be as far off as ever. The wholesale market has practically disappeared and retail stocks of domestic sizes, except of pea, are beginning to feel the strain of the lopsided movement. Buckwheat is still in plentiful supply, but tightening, and the end of the stock of pea is said to be in sight. Coke is the headliner in demand as a hard-coal substitute, so much so that prices are steadily advancing, but the supply, even under forced pressure, can never hope to catch up with the present demand.

Output of bituminous coal during the week ended Oct. 17 is estimated by the Bureau of Mines at 11,767,000 net tons, which again exceeded that of any week since early last January. This compares with 11,681,000 tons produced in the preceding week, according to revised figures. Anthracite output in the week ended Oct. 17 totaled 17,000 net tons, an increase of 4,000 tons over the previous week.



*Coal Age* Index of spot prices of bituminous coal on Oct. 26 stood at 178, the corresponding price being $2.15, compared with 176 and $2.13 the week before.

Dumpings at Lake Erie ports during the week ended Oct. 25, according to the Ore & Coal Exchange, were: Cargo, 809,488 net tons; steamship fuel, 41,208 tons—a total of 850,696 net tons, compared with 934,433 tons in the preceding week. Hampton Roads dumpings in the week ended Oct. 22 totaled 437,190 net tons, against 355,202 tons in the previous week.



### Estimates of Production

(Net Tons)

| BITUMINOUS | | 1924 | 1925 |
|---|---|---|---|
| Oct. 3 | | 10,614,000 | 11,008,000 |
| Oct. 10 (*a*) | | 10,904,000 | 11,681,000 |
| Oct. 17 (*b*) | | 10,599,000 | 11,767,000 |
| Daily average | | 1,767,000 | 1,961,000 |
| Cal. yr. to date | (*c*) | 371,144,000 | 394,801,000 |
| Daily av. to date | | 1,514,000 | 1,607,000 |
| ANTHRACITE | | | |
| Oct. 3 | | 1,425,000 | 14,000 |
| Oct. 10 | | 1,737,000 | 13,000 |
| Oct. 17 | | 1,750,000 | 17,000 |
| Cal. yr. to date | (*c*) | 72,283,000 | 61,710,000 |
| COKE | | | |
| Oct. 10 (*a*) | | 127,000 | 203,000 |
| Oct. 17 (*b*) | | 147,000 | 226,000 |
| Cal. yr. to date | (*c*) | 7,793,000 | 7,709,000 |

(*a*) Revised since last report. (*b*) Subject to revision (*c*) Minus two days' production to equalize number of days in the two years.

### Middle West Feels Better

A little snow and a drop of a few degrees in the temperature throughout the North and Northwest brought about an infinitely better feeling in the Midwest coal market last week. The demand for Illinois and Indiana prepared sizes took a spurt and gave most of the operators in those fields a nice volume of business. Some of them have actually cleared their tracks of "no bills" and have a satisfactory number of unfilled orders on their books, a condition which has not existed before this year. There is said to be very little coal in Iowa, as the trade there is buying strictly on a hand to mouth basis. Southern Minnesota is a little better off, as most dealers have reserve stocks. The same is true in South Dakota. Western Illinois and Wisconsin are depending upon current shipments to fill their needs, as practically no retail dealers have reserves.

Led by the smokeless operators of West Virginia, prices on Eastern coal in the Midwest market have advanced. Western sales agents of smokeless producers have not, however, increased their prices as much as they have been raised on such coals in the East. The price level today appears to be about $5.50@$6 for prepared sizes, although an increase can be expected. Smokeless mine-run has not reacted with the prepared sizes and good grades can be had in almost any quantities in Chicago at $2.25@$2.50 f.o.b. mines. High-grade West Virginia high-volatile coals are moving out here priced at $2.50@$3; egg, $2.25@$2.50. Specialty coals from West Virginia and eastern Kentucky are selling at around $4.

The steam coal market appears to have suffered a slight relapse; screenings were produced in such great volume that the market was not readily able to absorb the extra tonnage and prices weakened. There is considerable activity in the steam market, however, and it is expected to recover soon.

Colder weather has had its effect in southern Illinois and coal is moving out. Lump and egg appear to be oversold at most mines. No 1 nut is slow and the smaller sizes are heavy at the shaft mines. Railroad tonnage is just fair. The movement on the railroads is disappointing. Working time is good—four and five days a week as a rule in the Carterville field. The strip mines are working well except when wet weather interferes. Many mines in southern Illinois that have had a hard time on account of water shortage are beginning to get back to normal. There is no change in prices.

In the Duquoin field conditions show improvement; one mine is getting five and six days a week and the others four and five. All sizes except nut and screenings are moving in this field. No railroad tonnage is being shipped except from one mine. Strip properties are doing fairly well but prices are demoralizing. The Mt. Olive field has almost full working time, domestic sizes are moving un-

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Oct. 27 1924 | Oct. 12 1925 | Oct. 19 1925 | Oct. 26 1925† |
|---|---|---|---|---|---|
| Smokeless lump.......... | Columbus.... | $4.50 | $4.60 | $4.65 | **$4.75@$5.00** |
| Smokeless mine run...... | Columbus.... | 2.35 | 2.55 | 2.55 | *2.35@ 2.65* |
| Smokeless screenings..... | Columbus.... | 1.30 | 1.50 | 1.50 | **2.00@ 2.10** |
| Smokeless lump.......... | Chicago..... | 4.60 | 4.10 | 4.10 | **5.50@ 6.00** |
| Smokeless mine run...... | Chicago..... | 2.00 | 2.10 | 2.10 | **2.00@ 2.50** |
| Smokeless lump.......... | Cincinnati... | 4.25 | 4.50 | 4.75 | **5.00@ 7.00** |
| Smokeless mine run...... | Cincinnati... | 2.25 | 2.35 | 2.50 | 2.50 |
| Smokeless screenings..... | Cincinnati... | 1.15 | 1.90 | 1.90 | **2.00** |
| *Smokeless mine run..... | Boston...... | 4.45 | 4.75 | 4.60 | 4.50@ 4.75 |
| Clearfield mine run...... | Boston...... | 2.00 | 1.90 | 1.95 | *1.75@ 2.10* |
| Cambria mine run........ | Boston...... | 2.40 | 2.20 | 2.25 | 2.00@ 2.50 |
| Somerset mine run....... | Boston...... | 2.15 | 2.05 | 2.10 | *1.85@ 2.20* |
| Pool 1 (Navy Standard).. | New York... | 2.75 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pool 1 (Navy Standard).. | Philadelphia.. | 2.70 | 2.65 | 2.65 | 2.50@ 2.85 |
| Pool 1 (Navy Standard).. | Baltimore.... | 2.60 | 2.30 | 2.30 | *2.10@ 2.20* |
| Pool 9 (Super. Low Vol.). | New York... | 2.10 | 2.20 | 2.20 | 2.10@ 2.30 |
| Pool 9 (Super. Low Vol.). | Philadelphia.. | 2.15 | 1.95 | 1.95 | 1.95@ 2.00 |
| Pool 9 (Super. Low Vol.). | Baltimore.... | 1.90 | 2.05 | 2.15 | *1.90@ 2.00* |
| Pool 10 (H.Gr.Low Vol.).. | New York... | 1.90 | 2.00 | 2.00 | 1.85@ 2.15 |
| Pool 10 (H.Gr.Low Vol.).. | Philadelphia.. | 1.75 | 1.85 | 1.85 | 1.75@ 2.00 |
| Pool 10 (H.Gr.Low Vol.).. | Baltimore... | 1.70 | 1.90 | 2.00 | *1.80@ 1.85* |
| Pool 11 (Low Vol.)....... | New York... | 1.60 | 1.80 | 1.80 | 1.75@ 1.90 |
| Pool 11 (Low Vol.)....... | Philadelphia.. | 1.45 | 1.70 | 1.70 | 1.60@ 1.80 |
| Pool 11 (Low Vol.)....... | Baltimore... | 1.60 | 1.70 | 1.80 | *1.50@ 1.60* |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.).. | New York... | 1.55 | 1.60 | 1.55 | 1.55@ 1.60 |
| Pool 54-64 (Gas and St.).. | Philadelphia. | 1.50 | 1.60 | 1.60 | 1.50@ 1.70 |
| Pool 54-64 (Gas and St.).. | Baltimore.... | 1.50 | 1.65 | 1.80 | *1.55@ 1.60* |
| Pittsburgh sc'd gas........ | Pittsburgh... | 2.40 | 2.50 | 2.50 | **2.75** |
| Pittsburgh gas mine run.. | Pittsburgh... | 2.10 | 2.15 | 2.15 | **2.25@ 2.35** |
| Pittsburgh mine run (St.). | Pittsburgh... | 1.85 | 2.05 | 2.05 | **2.05@ 2.25** |
| Pittsburgh slack (Gas).... | Pittsburgh... | 1.20 | 1.55 | 1.55 | *1.35@ 1.50* |
| Kanawha lump........... | Columbus.... | 2.55 | 2.60 | 2.60 | 2.45@ 2.80 |
| Kanawha mine run........ | Columbus.... | 1.50 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings...... | Columbus.... | 1.00 | 1.30 | 1.30 | **1.25@ 1.40** |
| W. Va. lump............. | Cincinnati... | 3.00 | 2.60 | 2.60 | **2.50@ 3.00** |
| W. Va. gas mine run..... | Cincinnati... | 1.55 | 1.65 | 1.65 | *1.60@ 1.65* |
| W. Va. steam mine run... | Cincinnati... | 1.45 | 1.55 | 1.55 | *1.50@ 1.60* |
| W. Va. screenings........ | Cincinnati... | .95 | 1.25 | 1.25 | *1.10@ 1.25* |
| Hocking lump............ | Columbus.... | 2.55 | 2.70 | 2.70 | 2.50@ 2.90 |
| Hocking mine run......... | Columbus.... | 1.55 | 1.65 | 1.65 | 1.50@ 1.85 |
| Hocking screenings....... | Columbus.... | .90 | 1.30 | 1.30 | 1.25@ 1.40 |
| Pitts. No. 8 lump........ | Cleveland.... | 2.40 | 2.35 | 2.35 | **2.20@ 2.75** |
| Pitts. No. 8 mine run..... | Cleveland.... | 1.85 | 1.85 | 1.85 | **1.95@ 2.00** |
| Pitts. No. 8 screenings.... | Cleveland.... | 1.00 | 1.25 | 1.25 | **1.30@ 1.40** |

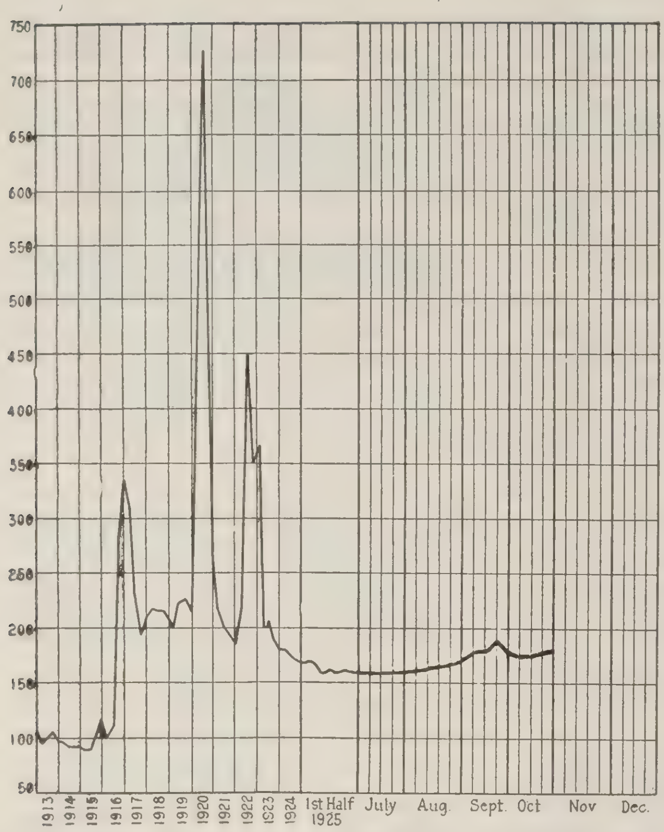
| Midwest | Market Quoted | Oct. 27 1924 | Oct. 12 1925 | Oct. 19 1925 | Oct. 26 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump....... | Chicago..... | $3.35 | $3.25 | $3.25 | $3.25 |
| Franklin, Ill. mine run.... | Chicago..... | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings.... | Chicago..... | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Central, Ill. lump........ | Chicago..... | 2.85 | 2.85 | 2.85 | 2.75@ 3.00 |
| Central, Ill. mine run..... | Chicago..... | 2.20 | 2.10 | 2.10 | **2.15@ 2.25** |
| Central, Ill. screenings..... | Chicago..... | 1.15 | 1.55 | 1.55 | 1.35@ 1.75 |
| Ind. 4th Vein lump...... | Chicago..... | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run... | Chicago..... | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings.. | Chicago..... | 1.30 | 1.60 | 1.60 | 1.50@ 1.75 |
| Ind. 5th Vein lump...... | Chicago..... | 2.85 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run... | Chicago..... | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings.. | Chicago..... | .95 | 1.40 | 1.40 | 1.35@ 1.50 |
| Mt. Olive lump.......... | St. Louis..... | 2.85 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run...... | St. Louis..... | 2.50 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings..... | St. Louis..... | 1.35 | 1.75 | 1.75 | 1.75 |
| Standard lump.......... | St. Louis..... | 2.85 | 2.25 | 2.25 | 2.25 |
| Standard mine run....... | St. Louis..... | 2.20 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings...... | St. Louis..... | .80 | 1.15 | 1.15 | 1.15 |
| West Ky. block.......... | Louisville.... | 3.10 | 1.75 | 1.85 | **1.75@ 2.25** |
| West Ky. mine run...... | Louisville.... | 1.65 | 1.30 | 1.35 | 1.20@ 1.50 |
| West Ky. screenings...... | Louisville.... | .65 | .95 | 1.00 | **.85@ 1.25** |
| West Ky. block.......... | Chicago..... | 2.75 | 2.05 | 2.05 | 1.85@ 2.25 |
| West Ky. mine run...... | Chicago..... | 1.65 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump.......... | Birmingham.. | 3.10 | 2.25 | 2.25 | 2.00@ 2.50 |
| Big Seam mine run....... | Birmingham.. | 1.60 | 1.80 | 1.80 | 1.60@ 2.00 |
| Big Seam (washed)....... | Birmingham.. | 1.85 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block.......... | Chicago..... | 2.85 | 3.00 | 3.00 | 2.75@ 3.25 |
| S. E. Ky. mine run....... | Chicago..... | 1.60 | 1.95 | 1.95 | 1.85@ 2.10 |
| S. E. Ky. block.......... | Louisville.... | 3.25 | 2.60 | 2.60 | **2.50@ 3.00** |
| S. E. Ky. mine run....... | Louisville.... | 1.60 | 1.50 | 1.50 | 1.40@ 1.65 |
| S. E. Ky. screenings...... | Louisville.... | .85 | 1.20 | 1.25 | 1.20@ 1.35 |
| S. E. Ky. block.......... | Cincinnati... | 3.10 | 2.85 | 2.80 | **2.75@ 3.75** |
| S. E. Ky. mine run....... | Cincinnati... | 1.55 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings....... | Cincinnati... | 1.00 | 1.25 | 1.30 | *1.10@ 1.35* |
| Kansas lump............ | Kansas City.. | 5.00 | 4.50 | 4.50 | **4.50@ 4.75** |
| Kansas mine run......... | Kansas City.. | 3.10 | 2.85 | 2.85 | **3.00** |
| Kansas screenings........ | Kansas City.. | 2.00 | 2.40 | 2.40 | *2.25@ 2.35* |

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Oct. 27, 1924 | | Oct. 19, 1925 | | Oct. 26, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Indpendent | Company | Indpendent | Company |
| Broken............ | New York......... | $2.34 | ............ | $8.00@$9.25 | ............ | $8.20@$8.95 | ............ | $8.20@$8.95 |
| Broken............ | Philadelphia....... | 2.39 | ............ | 9.15 | ............ | ............ | ............ | ............ |
| Egg............... | New York......... | 2.34 | $9.25@$9.75 | 8.75@ 9.25 | ............ | 8.65@ 8.90 | ............ | 8.65@ 8.90 |
| Egg............... | Philadelphia....... | 2.39 | 9.25@ 9.75 | 8.80@ 9.25 | ............ | ............ | ............ | ............ |
| Egg............... | Chicago*.......... | 5.06 | 8.17@ 8.27 | 8.14@ 8.20 | $9.50@$10.00 | 8.03@ 8.28 | $9.50@$10.00 | 8.03@ 8.28 |
| Stove............. | New York......... | 2.34 | 10.00@10.50 | 8.75@ 9.50 | ............ | 9.15@ 9.40 | ............ | 9.15@ 9.40 |
| Stove............. | Philadelphia....... | 2.39 | 9.85@10.25 | 9.15@ 9.50 | ............ | ............ | ............ | ............ |
| Stove............. | Chicago*.......... | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@11.00 | 8.48@ 8.80 | 10.00@11.00 | 8.48@ 8.80 |
| Chestnut.......... | New York......... | 2.34 | 9.50@10.25 | 8.75@ 9.25 | ............ | 8.65@ 8.95 | ............ | 8.65@ 8.95 |
| Chestnut.......... | Philadelphia....... | 2.39 | 9.65@10.00 | 9.15@ 9.25 | ............ | ............ | ............ | ............ |
| Chestnut.......... | Chicago*.......... | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@11.00 | 8.50@ 8.75 | 10.00@11.00 | 8.50@ 8.75 |
| Pea............... | New York......... | 2.22 | 5.25@ 5.50 | 5.50@ 6.00 | ............ | 5.00@ 6.25 | ............ | 5.00@ 6.25 |
| Pea............... | Philadelphia....... | 2.14 | 5.75@ 6.35 | 5.75@ 6.00 | ............ | 5.00@ 6.25 | ............ | 5.00@ 6.25 |
| Pea............... | Chicago*.......... | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 |
| Buckwheat No. 1.... | New York......... | 2.22 | 2.25@ 2.75 | 3.00@ 3.15 | ............ | 2.50@ 2.60 | ............ | **2.50@ 2.75** |
| Buckwheat No 1..... | Philadelphia....... | 2.14 | 2.50@ 3.00 | 3.00 | ............ | 2.50@ 2.75 | ............ | **2.50@ 3.00** |
| Rice.............. | New York......... | 2.22 | 1.80@ 2.15 | 2.00@ 2.25 | ............ | 2.25 | ............ | 2.25 |
| Rice.............. | Philadelphia....... | 2.14 | 2.00@ 2.25 | 2.25 | ............ | 2.25 | ............ | 2.25 |
| Barley............ | New York......... | 2.22 | 1.25@ 1.50 | 1.50 | ............ | 2.25 | ............ | 2.25 |
| Barley............ | Philadelphia....... | 2.14 | 1.50 | 1.50 | ............ | 1.50 | ............ | 1.50 |
| Birdseye.......... | New York......... | 2.22 | 1.35@ 1.60 | 1.60 | ............ | ............ | ............ | ............ |

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Oct. 26 | Oct. 19 | Oct. 12 | Oct. 27 |
| Index .................... | 178 | 176 | 175 | 176 |
| Weighted average price.. | $2.15 | $2.13 | $2.11 | $2.12 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

usually well and steam has shown considerable improvement.

In the Standard district there is an increased demand and working time has shown some improvement, but prices are still about cost. Many mines are still idle and are afraid to resume at the present prices. All mines have some kind of "no bills" on hand every night and steam is not moving well, which is why some mines are idle. There is no change generally in prices.

Colder weather has caused a good demand for domestic coal in St. Louis. All grades, including Carterville, Mt. Olive and Standard, seem to be moving fairly well. All dealers have ample supplies of anthracite to pull them through the winter, but there seems to be no real demand for it. Coke is moving fairly well and smokeless is pretty well used up, but there is no unusual demand for that. Country domestic is good principally on middle grades. There is a feeling that Franklin County and Carterville are too high and the fact that western Kentucky is quoted at about $2 at the mine with a 25c. higher rate—which means $1 per ton less delivered than Franklin County—is encouraging the use of that coal. Country steam is quiet. St. Louis wagonload is unusually good; carload is fairly active but the demand is not equal to the supply. There has been no change in price.

## General Condition Better in Kentucky

Steady cold weather in Kentucky last week resulted in a much better demand for prepared sizes, resulting in better general conditions in the coal market. "No bills" and distress fuel are being absorbed, the fag end of the season finds a good deal of coal being shipped to lake ports, and as a whole business is a trifle better than it has been.

Utility, industrial, railroad and general steam demand is good and screenings are being kept fairly well cleaned up, although prices are a shade lower than they were last week on screenings. Other prices are just about as they have been for the past several days, although block is a little stronger. Railroad consumption has been especially heavy.

The anthracite situation is moving more West Virginia smokeless coal East, enabling eastern Kentucky operators to get business in replacing smokeless. Better operating time is reported in all state fields, with unbilled coal reduced to a minimum.

## Northwest Continues Active

Activity continues in the coal trade at Duluth-Superior. All of the docks operate with full crews on their loading sides. Operators have, however, noted that retailers seem to have stocked heavily. Demand from industrial companies over Minnesota and northern Wisconsin is still good. Foundries have been especially good buyers of steam and gas coal together with hydro-electric power companies which foresee water-power shortage.

Considerable anthracite has been distributed from the docks lately. Stocks of hard coal probably will be fairly well cleaned up by about Feb. 1. However, the docks are planning to reserve certain tonnages for the use of consumers unable to use bituminous coal. A survey of conditions has shown that more orders have been booked for Pocahontas and other smokeless coals than ever before in the history of the trade.

The movement of coal from Lake Erie ports to Duluth-Superior has continued in good volume. Thirty-seven bituminous cargoes have unloaded at the docks during the last week, and eighteen cargoes were reported to be en route. Prices are practically unchanged in both anthracite and bituminous coals. Domestic coke is in more active demand as an anthracite substitute and its price is unchanged at $8.50. Briquets are beginning to move at $9.

The coal market in Milwaukee seems to be irregular. Comparative slowness is reported from the docks, though retailers report a brisk demand. There is a demand for anthracite now that stocks here virtually are exhausted. Notice of a prospective advance in Pocahontas comes from the mines, and retailers will, of course, promptly pass the advance to the consumer, who now is paying $13 for nut when carried to the bins, or $12.25 shoveled, and $13.50 and $12.75 for egg. Lake cargo receipts at Milwaukee up to Oct. 23 total 2,934,934 tons—488,234 tons of anthracite and 2,446,700 tons of bituminous coal. The total for the same period in 1924 was 2,600,748 tons—667,254 tons of anthracite and 1,933,494 tons of bituminous coal. During the month of September Milwaukee received 3,650 tons of hard and 34,361 tons of soft coal by all-rail routes.

## Coal Business Brisk in Kansas

Snappy fall days have been making brisk business for the coal trade in the Southwest. Householders who were not to be persuaded to buy early have been putting in rush orders, and as a result the price of Kansas lump was advanced Oct. 19 by some producers to $4.75. Kansas is profiting most since it is the only state of the Southwestern district where production is stable, but more miners are returning to work in Oklahoma and Arkansas and operators there are finding a ready market for all the coal they can mine. Screenings are inclined to drag, but with the price for the Kansas product reduced to $2.35, some operators quoting $2.25, and some others even less, no heavy surplus has accumulated.

Cold weather during the past ten days has increased the demand for Colorado furnace coal. This has reduced retailers' stocks and, consequently, increased orders. Demand for lump now exceeds production. As the nut sizes are rather slow to move, steam call is brisk. Demand is good for Colorado anthracite.

In Utah the mines are working a little better than half time. Larger sizes of coal are selling best. The grade known as domestic lump is leading, but straight lump is in good demand, too. Slack is being dumped now, and nut is drugging the market. As a result of the nut coal accumulations some mines have had to go on short time. The car situation is not entirely satisfactory. H. F. Fernstrom, president of the Utah-Idaho Coal Dealers' Association, estimates that Salt Lake City coal dealers have about 35,000 tons of coal in their yards at the present moment. This is a little more than last year, but consumers take it slowly. Prices remain firm.

### Smokeless Skyrockets at Cincinnati

Eastern orders, favorable weather and conditions at the seaboard all contributed to throw domestic sizes of smokeless further off balance at Cincinnati last week and the skyrocketing of five or six weeks ago wasn't a patch in comparison. Lump, egg and nut for Eastern delivery wobbled somewhere between $5.50 and $7 a ton. Again egg was in the lead with nut a close competitor and lump also moving along. Inland markets failed to become unduly excited, most of the "regular" dealers being disposed to bide their time rather than force the issue. Declarations of "sold up" were met with orders for future datings. Mine-run and slack strengthened a wee bit, knocking out existing spreads.

Embargoes to the lakes by the Pennsylvania and B. & O. lines because of a jam of cars at Toledo and Sandusky helped tremendously to steady the high-volatile market, which for a couple of weeks showed signs of wobbling. Happily, this coal was sacrificed within a given area and did not force other markets out of plumb. Under the reflection of the low-volatile upturn domestic sizes stiffened up a bit. The "lows" on Hazards, Harlans, Elkhorns, Thackers and high-grade Kanawhas were virtually wiped out. Slack has weakened, however, $1.10 low grades again being "peddled."

Movement still continues at the top notch with 14,493 cars going through the Cincinnati gateways last week, according to the American Railway Association. This was 27 cars more than the week before and 682 more than the corresponding week of last year. Of these 3,323 cars went to the lakes, 184 cars less than in the preceding week, but a record breaker for this time of year.

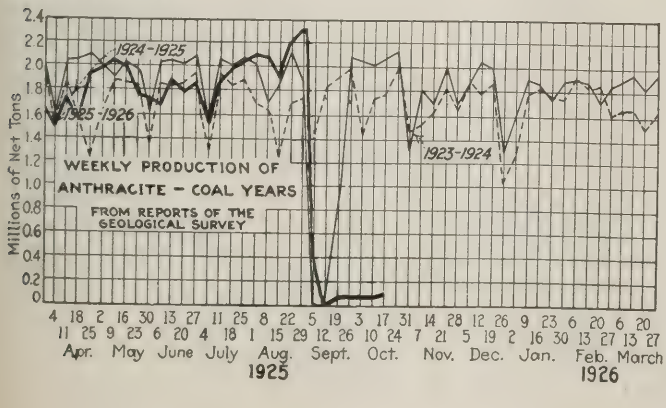
Colder weather has stimulated the domestic demand at Columbus and producers as well as shippers report a better trade with dealers. The bulk of the business is for smokeless, splints and Kentucky block, although there is a fair volume of orders for Hocking and Pomeroy lump. Retail prices are steady with smokeless at $8.75@$9.25; splints, $6.75@$7.25 and Hocking lump around $6. Kentucky grades are selling at about $7.25. Little free coal is on the local market, as the lake trade is taking all the surplus.

Steam business does not share in the activity of domestic sizes. Users are gradually building reserves up to normal but this buying has had little effect on the market. A number of short-term contracts were made recently, in most cases expiring April 1. Some of the larger users are buying on the open market, notably the Ohio Department of Welfare, which consumes about 225,000 tons of nut, pea and slack in the twenty-five state institutions.

Spot prices stiffened all along the line in eastern Ohio last week, due to much colder weather and the stronger demand in general for both steam and domestic fuel. A much better tone prevails all around. Retail yards have been drawing heavily upon stocks to supply the increase in domestic orders and have already begun replacement orders. Smokeless fuels from non-union mines to the south also have stiffened; Pocahontas lump is quoted at $5 f.o.b. mines.

The railroads have increased their commitments during the past week and are now taking a larger percentage of eastern Ohio coal. The volume of late season Lake shipping has kept up well too.

Output in eastern Ohio during week ended Oct. 17 was 287,000 tons, a decrease of 13,000 tons as compared with the preceding week, and about 41 per cent of potential capacity. This was 66,000 tons under the corresponding week a year ago.



### Market Stiffens at Pittsburgh

The Pittsburgh district coal market has been growing stronger daily. Eastern demand has even invaded this district. There is almost no demand for mine-run, either gas or steam. Buyers in search of a particular size of coal freely pay prices asked, egg actually selling above lump.

There is little if any differential on gas coal above steam, because of the demand coming from outside the regular distribution area for coal for domestic consumption. Slack naturally has sold off, with heavier shipments of lump.

At Buffalo bituminous coal has not began to feel the effects of the strike yet. Just now a stir is appearing in all sorts of egg-size bituminous, high-volatile as well as smokeless, but this hurts slack, which is often selling close to $1 and is hard to sell anyhow. When the lakes close, which they will do soon, the situation will be still worse. Prices are fully as weak as they have been at any time since the strike began, so the wise wholesaler tries to sell the coal as house fuel.

### New England Trade Easier

Except on screened sizes of bituminous the market in New England is extremely quiet. Buying has eased off in most directions and neither industries nor utilities are showing much interest in current prices. The trade hardly looks for improvement in November, and even a continuing anthracite strike is not expected to lift bituminous in general from the dullness that is its present characteristic.

Accumulations at Hampton Roads still are the rule. Nearly 300,000 tons of low volatile is understood to be on cars awaiting boats and spot demand is extremely light. Most of what smokeless coal is dumped is being applied on coastwise contracts, there being only occasional sales at the present range of $4.50@$4.75 per gross ton f.o.b. vessel for navy standard Pocahontas and New River. Smokeless slack is being offered on a basis of $1.25 per net ton at the mines, with few takers.

For delivery inland from Boston and Providence prices are easy at $5.85@$6 per gross ton on cars. There is only scattering demand, and most factors are piling up storage from current receipts.

The only active feature of the market is the steady call for prepared sizes. Pocahontas and New River lump and egg are now arriving here, but not as yet in anything approaching large volume. The operators and sales agents are exacting $6 and upward per net ton, and this, added to the high freight rate all-rail, has the effect of slowing up sales, a development that has been brought forcibly to the attention of factors who allowed coal to come forward in advance of sale. Prepared sizes all-rail from central Pennsylvania, however, have been in good request at prices running all the way from $5.50 to $7 per net ton at the mines. The minimum Clearfield rate opens a large territory to these coals, but there is danger that here, too, the shipper will overreach.

For Pennsylvania run of mine all-rail there is no better demand than a month ago.

### Active Demand at New York

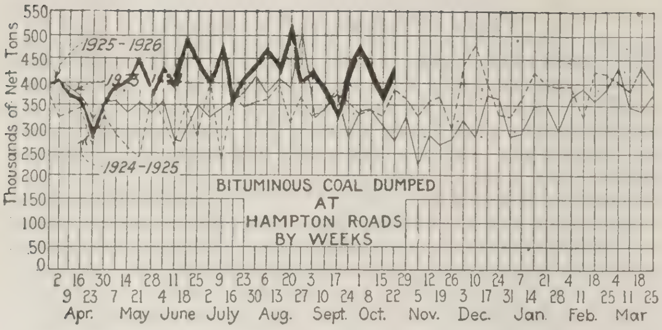
At New York in addition to a heavy run of mine-run coals there is an active demand for screened bituminous coals from central Pennsylvania and the Southern fields. As operators in Pennsylvania are well sold up the trade is turning toward the Pocahontas and New River fields for substitutes to take the place of anthracite.

Reports that the hard coals are nearly all cleaned up and fears that the strike may continue for some weeks has caused considerable anxiety among consumers, who are being advised by state and local authorities to burn substitutes.

Industrial consumers of bituminous coal continues to increase their reserves but the added demand has not yet changed prices from the levels current for the past few weeks.

Broad Top operators are finding a ready market for their prepared coals, which are quoted at $7.50@$9. High-volatile ¾ lump is quoted at $1.60@$2 and low-volatile lump at $4@$5, according to size. Pool 15 is quoted at $1.75.

Quotations by local houses for prepared sizes of Pocahontas and New River coals range around $7 for nut and egg.



Any evidence of better buying in the Philadelphia soft-coal market is confined to grades adapted to domestic purposes. Low-volatile Pennsylvania sized grades are hard to get and prices run from $4 to $5 a ton, with a tendency to rise daily. Pittsburgh seam gas coals in sizes also are in very strong demand, and prices, which were $2.25 a week or two days ago, have moved up to $3.

Since the new freight rate on Pocahontas coals became effective the first sized coals from that field have appeared, and quite a good business has been closed. Prices started at $5 for egg, stove and nut, and in a few days were quickly advanced to $6.

In the mine-run grades there is practically no change, industrial users feeling that they can get all they want at any time.

Except for prepared sizes, which are being used as substitutes for anthracite, the Baltimore bituminous market is again somewhat flat. Prepared sizes are very active, prices being frequently around $5.50 or better the net ton. A downward trend in both demand and prices on the regular runs of both gas and steam coals is due partly to a surplus having piled up. Coke is active and the price headed skyward. The export movement continues light, there having been but three shipments between Oct. 1 and 13.

At Birmingham there is a very active demand for all the better grades of commercial fuel and a large number of the mines in the Cahaba and Warrior fields are operating full time. Inquiry and consumption in the general industrial field have increased and buying in the spot market is showing steady gains. No contracting worth mentioning is being done, though there is a good movement on contracts closed earlier in the year. Most of this coal is for current use, very little tonnage going into reserve. While the cheaper grades of fuel are not as actively sought, mines of this class are getting sufficient business to operate three to five days a week. Quite a few operations in the district are still idle, production being approximately 400,000 net tons weekly.

While there has been a noticeable improvement in the open market for domestic sizes within the last two weeks, sales have not yet reached a volume adequate to meet current production, which is not being moved without effort and some delay.

The market for foundry coke has stiffened in the last week or so with quotations for spot byproduct and beehive going to $5.50 ovens. Inquiry and bookings are good also for domestic nut and egg coke, the entire production being required to meet the demand, the former being quoted $4.25 and the latter $4.50 ovens.

## Hard-Coal Trade Shifting to Substitutes

Contradictory statements as to the amount of anthracite lying in cars on the railroads has created some uncertainty in the minds of New York consumers as to the quantity available and as to the truthfulness of statements that there is a scarcity of fuel. Coal men generally assert that the favorite sizes are pretty well cleaned up, but reports in the daily papers that there are at least 1,000 cars of various sizes on the tracks near Scranton have engendered a feeling that operators are holding back shipments in order to obtain high prices.

Retail dealers with few exceptions are short of all domestic sizes except pea. They are advising customers to take in buckwheat to mix with the larger sizes in their bins. A few boatloads of pea are reported in the harbor with quotations high and few buyers. Independent buckwheat coals are quoted as high as $4 along the line.

Demand for coke is so heavy that manufacturers cannot promise prompt shipments. Quotations have advanced rapidly in the last few weeks and quotations are given subject to change at any time. Quotations for all sizes of byproduct coke range as high as $10 at the ovens, with furnace coke quotations ranging at $7@$8 at the ovens.

Screened bituminous coals are in fair demand as substitutes, but the supply is growing tighter as the hard-coal strike continues.

Some light shipments of pea coal are being received at Philadelphia, but the one big company shipper that has any left in storage estimates that by the end of next week all of its coal will have been sent to market. The retail price is about $12, a few asking $12.50. There is a plentiful supply of buckwheat, but even this size is tightening up. The Reading company last week advanced the price of buckwheat from $2.75 to $3 a ton.

Coke is extremely difficult to get, and the price has moved from $5 a month ago to around $9.50 and $10, and not much is to be had at that.

Little hard coal is left in Baltimore yards for delivery, but the Baltimore public is not at all excited over the situation, largely because of the proximity of soft-coal fields that can supply large quantities of prepared sizes of bituminous. Prices of anthracite, when it can be gotten, are around the levels that have prevailed for some time past, although in a few cases there may be some slight advances recorded in individual sizes. The Baltimore City Council has passed an ordinance introduced through the Baltimore Coal Exchange which will allow local dealers to sell hard coal in units of 2,000 lb. instead of the gross ton of 2,240 lb., as required under a state law.

Lake anthracite shippers at Buffalo say it looks as if there would be no more of it for that branch of the trade this season. About 2,000,000 tons has been shipped and the upper lake districts probably will have to get along without any more. Some of the dealers in near-by towns still have more or less coal, which they laid in while it was to be had. As a rule they are selling it in small amounts at considerable premium. For some reason the Buffalo trade did not buy any and shut off deliveries just as soon as the strike began. Coke is hard to get for less than $13 and prices are steadily advancing. Semi-anthracite producers are trying to get into this trade.

## Advances Still Feature Coke Market

The Connellsville coke market has continued to advance because of buying by Eastern jobbers. The turnover has not been as heavy, but supplies being so well absorbed, lighter buying has just as much effect on prices. There also has been buying by regular industrial consumers both in the Pittsburgh district and toward the west.

By Monday of last leek $8 had been paid, though operators had not obtained so much. By Thursday some operators had obtained $8—even $8.50 in a few cases—and Eastern jobbers had paid up to $8.75 if not $9.

Foundry coke has had no market of its own. Foundries have not taken kindly to advanced quotations and have been holding off, but the asking price advances along with prices realized on 48-hour coke, and enough production is switched from 72-hour to 48-hour to equalize. Furnace coke may be quoted conservatively at $8@$9 and foundry coke at the same range, both for practically spot shipment. There is, of course, no market for extended deliveries. The market is taken entirely out of the iron and steel trade. Furnaces are covered by contract to the end of the year and cannot think of trying to buy for first quarter. Pig-iron consumers, fairly well covered to the end of the year, are simply holding off as to first quarter, preferring to take chances. The Standard Sanitary Manufacturing Co., however, succeeded in covering for first quarter at old prices.

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## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Oct. 10, 1925 | 1,106,099 | 184,331 |
| Previous week | 1,112,463 | 174,317 |
| Week ended Oct. 11, 1924 | 1,088,956 | 198,840 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Oct. 8, 1925 | 136,009 | 58,256 | ........ | ........ |
| Sept. 30, 1925 | 140,842 | 61,370 | ........ | ........ |
| Oct. 7, 1924 | 103,730 | 52,643 | ........ | ........ |

# Foreign Market And Export News

## All-Round Betterment in Tone Appears In British Coal Market

After several weeks of disappointment through fogs and storms, delaying the arrival of the steamers, shipping conditions at the Welsh coal port show a fairly substantial improvement. Standing stocks are enormous, and through failure to effect prompt clearance of wagons, collieries are held up from day to day in various parts of the steam coal area, particularly in Monmouthshire.

The aggregate trade is approximately two-thirds of that of the corresponding period in 1923 and at least 50,000 Welsh miners are unemployed, while many thousands more are engaged only two or three days a week. It seems that orders are coming forward more freely at the reduced prices recently asked for Welsh coal—especially from the Continent.

A much better tone has developed in the Newcastle coal market with the advent of October. Inquiry all round has improved, especially in best steams. Prices are firm and in many instances are now on the top grade. The coal position also is improving, the best classes being well booked, and bunker coals are firmer. Indications point to a steadier trade on the whole for the rest of the year. A fair amount of business has been passing in the contract market.

Production of British coal during the week ended Oct. 10, according to a special cable to *Coal Age*, totaled 4,685,000 gross tons, compared with 4,620,000 tons in the preceding week.

### Belgian Trade Slightly Better

Industrial coals continue to be in small request in the Belgian market, though there has been a slight improvement. Prices are still sagging, having fallen so low that it seems difficult for them to go lower. The situation is made worse by increasing foreign competition.

Good semi-bituminous coals and smalls for cement and lime making are much inquired for and in lean smalls there is still nothing to dispose of. Briquets are rather dull and will certainly not be improved by a rise in the price of pitch, which is foreseen for this month.

There is no abatement in the excellent demand for domestic fuels; for anthracite it may even be termed very strong, especially from France. The scarcity of supplies is causing prices to go higher. Prices quoted for coke are nominal.

Prices for industrial coals have been reduced 2 fr. on semi-washed half-bituminous smalls, washed lean smalls, and coking smalls; 7 fr. on washed half-bituminous smalls; 3 fr. on half-bituminous and lean peas; 2 fr. 50c. on briquets.

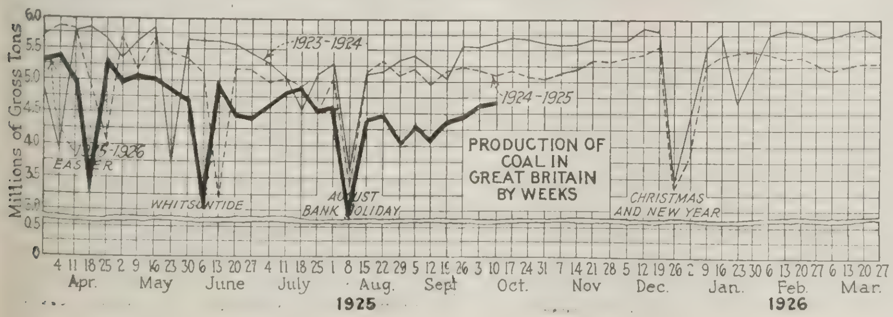
For domestic coals increases have been made of 5 fr. on half-bituminous through coal, 50-60 per cent; 10 fr. on half-bituminous and anthracite beans; 15 fr. on half-bituminous nuts, anthracite nuts and anthracite cobbles; 5 fr. on half-bituminous cobbles.

### Industrial Coals Reviving in French Market

In the French coal market a revival in the textile and glass-making trades is making itself felt in the consumption of industrial coals. In domestic grades the situation is even better than might have been hoped for a few months ago.

The Nord and Pas-de-Calais collieries having finally agreed to raise to 40 per cent the "living costs bounty," the prices of certain sorts of coals—sized coals particularly—will be increased, but, quotations on the whole will not be greatly modified.

Imports of free German coals, which can be brought into France only under special import permits, have not been important thus far, as the French Government has been desirous that such German fuels purchased on the free market be considered as "prestations in kind" and paid for by the Payment Agent of the Reparation Commission, as in the case for indemnity coals. The Germans were at first unwilling to accede to this demand, but the pressing necessity of selling their coals seems to have put them in a more conciliatory frame of mind.



### Normal Tone at Hampton Roads

Hampton Roads business is about the same as last week, except that coastwise movement is somewhat stronger. Approaching cold weather in some sections gives promise of a livelier market and has a slight tendency to strengthen prices. Foreign trade is falling off, but bunker business is about normal.

Movement to Canada, which had strengthened the market for months, has fallen to a minimum, due to shipments of Welsh coal. None of it has come this way, however. The tone of the market is fairly strong—approximately normal for this season.

### Export Clearances, Week Ended Oct. 24, 1925

| FROM HAMPTON ROADS | Tons |
|---|---|
| For Newfoundland: | |
| Nor. Str. Tosto, for St. John's | 2,013 |
| For Cuba: | |
| Dan. Str. Rolf, for Santiago | 2,007 |
| Br. Str. Sheaf Spear, for Havana | 4,600 |
| For Jamaica: | |
| Br. Str. Baron Douglas, for Kingston | 2,160 |
| For Canal Zone: | |
| Amer. Str. Achilles, for Cristobal | 12,054 |
| For Italy: | |
| Ital. Str. Fortunato, for Bagnoli | 6,202 |
| For Martinique: | |
| Br. Str. Hollypark, for Fort de France | 4,965 |
| FROM BALTIMORE | |
| For Cuba: | |
| Am. Schr. Dunham Wheeler, for Cape Francis, Cuba | 2,803 |
| For Porto Rico: | |
| Am. Schr. Evelyn, for Port Real | 375 |
| FROM PHILADELPHIA | |
| For Cuba: | |
| Br. Str. General Lukin for Antilla | —— |

### Hampton Roads Pier Situation

(Gross Tons)

| N. & W. Piers, Lamberts Pt.: | Oct. 15 | Oct. 22 |
|---|---|---|
| Cars on hand | 1,674 | 1,707 |
| Tons on hand | 105,423 | 110,637 |
| Tons dumped for week | 119,882 | 121,568 |
| Tonnage waiting | 10,000 | 12,000 |
| Virginia Piers, Sewalls Pt.: | | |
| Cars on hand | 1,577 | 1,258 |
| Tons on hand | 125,050 | 100,850 |
| Tons dumped for week | 81,595 | 117,311 |
| Tonnage waiting | 7,513 | 23,531 |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,873 | 2,781 |
| Tons on hand | 145,765 | 140,535 |
| Tons dumped for week | 115,686 | 151,469 |
| Tonnage waiting | 17,650 | 13,350 |

### Pier and Bunker Prices, Gross Tons

| PIERS | Oct. 17 | Oct. 24* |
|---|---|---|
| Pool 1, New York | $5.35@$5.60 | $5.35@$5.60 |
| Pool 9, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 10, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 11, New York | 4.45@ 4.70 | 4.45@ 4.70 |
| Pool 9, Philadelphia | 4.85@ 5.05 | 4.85@ 5.05 |
| Pool 10, Philadelphia | 4.55@ 4.75 | 4.55@ 4.75 |
| Pool 11, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 1, Hamp. Roads | 5.00 | *4.75@ 4.90* |
| Pool 2, Hamp. Roads | 4.75 | *4.60* |
| Pools 5-6-7, Hamp. Rds. | 4.50 | 4.50 |
| BUNKERS | | |
| Pool 1, New York | $5.60@$5.85 | $5.60@$5.85 |
| Pool 9, New York | 5.25@ 5.50 | 5.25@ 5.50 |
| Pool 10, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 11, New York | 4.70@ 4.95 | 4.70@ 4.95 |
| Pool 9, Philadelphia | 5.05@ 5.25 | 5.05@ 5.25 |
| Pool 10, Philadelphia | 4.75@ 4.85 | 4.75@ 4.85 |
| Pool 11, Philadelphia | 4.60@ 4.75 | 4.60@ 4.75 |
| Pool 1, Hamp. Roads | 5.10 | *4.75@ 4.90* |
| Pool 2, Hamp. Roads | 4.85 | *4.70* |
| Pools 5-6-7, Hamp. Rds. | 4.60 | *4.50* |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Oct. 17 | Oct. 24* |
|---|---|---|
| Admiralty, large | 23s.6d.@24s. | *22s.3d.@23s.6d.* |
| Steam smalls | 10s.3d. | 10s.3d. |
| Newcastle: | | |
| Best steams | 15s.3d.@15s.6d. | 15s.3d.@15s.6d. |
| Best gas | 16s.6d.@16s.9d. | *16s.6d.* |
| Best bunkers | 15s.@16s. | *14s.6d.@15s.* |

* Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

The byproduct coke plant of the Republic Iron & Steel Co., located at Thomas, which has been in course of construction for the past year, was placed in commission last week. There are fifty-seven ovens and necessary facilities and equipment for the preparation and storing of all the various coal byproducts. The plant is modern to the minute in every way and was constructed by the Koppers Co., of Pittsburgh, Pa.

The Tennessee Coal, Iron & Land Co., Bessemer, is planning the development of a town for its employees, equipped with water works and electric lights.

L. E. Boyette, of Birmingham, is interested in the development of coal lands in Blount County, Ala.

The Brown Lumber Co., with main office at Fayette, is contemplating development of coal mines on its holdings near Tuscaloosa.

## ARKANSAS

Preliminary arrangements have been perfected by A. M. Malone and his associates and articles of incorporation will be applied for in a few days by the Ouita Coal and Railroad Co., which will build a railroad line into the old Ouita coal basin and carry on extensive mining operations in that section, which was the scene of the first mining activities in the Russellville field. Officers of the company, which will be capitalized at $150,000, are: A. M. Malone, president; D. R. Dorente, vice-president; W. D. Brogdon, secretary, and C. E. McKoin, treasurer.

## ILLINOIS

B. F. Bliss, of Chicago, was appointed receiver Oct. 7 for the Union Fuel Co., operating mines in Sangamon County. The appointment was made by Judge E. S. Smith, in circuit court, at Springfield.

The properties of the St. Louis Coke & Iron Co., east of Granite City, was bid in at public auction at noon Oct. 20 for $3,000,000. The successful bidder, C. H. Hand, of New York, represented the holders of the $6,800,000 first mortgage bonds, $3,099,000 of preferred stock and 92,000 shares of $5 par value common stock. It is anticipated that the sale will be approved immediately by the United States District Court at Springfield, so that an early reorganization of the company can be effected. The new company will be incorporated under the laws of either Delaware or Maryland and have about $2,000,000 of additional capital. This will finance the installation of a new blast furnace and other improvements to the plant.

## KANSAS

James Howat, a miner, brother of Alexander Howat, deposed president of District 14, United Mine Workers, and George Brown, a former miner, were found dead in a house in which they "batched" near Girard, Oct. 21. Several empty whiskey bottles and one containing some liquor indicated that they had drunk poison "hooch," and the coroner considered an inquest unnecessary. Howat was 50 years old. He was born in Scotland. Brown was 70 years old and had not worked for several years because of his age.

A Kansas coal digger, Ludwig Reindhaler, of Croweburg, committed suicide Oct. 16 by tying a stick of dynamite about his neck and lighting a fuse attached to it. Reindhaler was said to have been acting queerly three years.

## KENTUCKY

The government last week placed two sixty-car orders for mine-run coal through Louisville jobbers, the Drabelle Yager Coal Co. getting a contract for delivery on the Ohio River at Addison, and the Southern Coal Co., at Owensboro, also for river work. It is reported that the coal was sold on a delivered basis, which would figure about $1.25 f.o.b. mines. The business was placed under option whereby the buyer can take as much more coal at the same price.

Coal had an important bearing on car-loading by the Louisville & Nashville R.R., which broke all traffic records for August and September and also set its largest day on record, according to President W. L. Mapother. On Oct. 8 7,144 cars were loaded and moved. In August 168,181 cars moved; and September broke that record with 171,165. October is expected to run over 180,000. It is believed that the final quarter of the year will far exceed past records.

## MISSOURI

James C. Wilson, president of the Wilson Coal Co., Kansas City, Kan., was fined $100 in police court in Kansas City, Mo., Oct. 22, on a charge of misrepresenting coal he sold a buyer on the Missouri side of the line. The charge was supported by the Coal Credit & Correct Weights Bureau, of Kansas City, Mo., an association of retailers organized to promote public confidence in the industry by maintaining a high standard of ethics in the trade. Wlison was accused of delivering Hume (Mo.) coal on an order calling for Cherokee coal. His defense, supported by witnesses, was that "Cherokee" was a name used by the trade to denote a particular vein of coal, and that to be "Cherokee," coal need not come from the Cherokee County (Kansas) field. He charged his arrest was persecution by Missouri dealers to prevent his competition on their side of the line.

Operation has been resumed at the Trenton mine after a period of idleness lasting since last spring. It is expected that near capacity production will be attained within a few weeks.

## NEW YORK

The fires of 55 coke ovens of the Hudson Valley Coke & Products Co., Troy, were lighted at 7 a.m., Oct. 18 and after 24 hours of operation more than 1,000 tons of coke had been produced. Full production is expected by Nov. 1, at the latest, when the byproducts plant, producing coal tar, benzol and various other chemcials, is expected to go into operation. The gas produced incidental to the manufacture of the coke is to be sold at wholesale to the utility companies supplying Troy, Albany and Schenectady.

"Earnings of the United States Distributing Corporation and subsidiaries are good and those of one of its principal subsidiaries, Pattison & Bowns, have not been reduced so far by the anthracite suspension," was the statement on Oct. 23 of Harry N. Taylor, president. "Earnings of Pattison & Bowns have held well as a result of storing a large amount of hard coal before Sept. 1, from which deliveries have been made since."

## OHIO

Bids will be opened Nov. 16 by J. E. Harper, director of Public Welfare, Oak and Ninth streets, Columbus, for two steel coal bins of 500 tons capacity each and an ash bin of 50 tons capacity for the Hospital for Epileptics at Gallipolis; also for an electric coal elevator with a capacity of 50 tons per hour and a larry to haul the same capacity.

Dumpings at the docks of the Hocking Valley Ry. for the week ending Oct 21 totaled 210,582 tons. The same docks have handled 6,933,921 tons up to and including Oct. 21 as compared with 5,556,473 tons during the same period in 1924. Dumpings at the docks of the New York Central lines for the week ending Oct. 21 were 43,715 tons; or for the entire season up to that date, 2,143,534 tons. Dumpings for the season of 1924 up to Oct. 21 totaled 102,817 tons.

J. P. Brennan, state purchasing agent, who expected to receive bids the latter part of August for approximately 225,000 tons of either nut, pea and slack or run of mine coal for 25 state institutions, has not yet set the date. Mr. Brennan has been buying coal on the open market, rather than on contract, to make sure that strikes will cause no delay in the shipment. At the same time he is getting fuel from 10c. to 30c. per ton cheaper than would be possible on contract. "I will continue to buy on the open market, unless conditions change materially, and prices are reduced," he said. To date about 75,000 tons have been purchased.

The Y. & O. Coal Co. has resumed operations at its No. 1 mine at Amsterdam. The mine was idle for 18 months. Married men were given the first chance at the available jobs.

## PENNSYLVANIA

At a recent patriotic meeting held in Scranton under the auspices of the American Constitutional League an attempt was made by leaders of the United Mine Workers to introduce a resolution condemning the courts of West Virginia for injunctions and demanding that the government act in the situation there. The leaders of the meeting spragged the resolution, however, on the ground that it was of a political nature. The resolution was to the effect that the courts of West Virginia have denied the right of free speech to union mine workers.

A contracting company has started work on a pile foundation for a coal tipple at the Ella Mine at Milesville, on the Monongahela River, for the Hillman Coal & Coke Co. Construction is about to start also on a river tipple for Evan I. Brown, at Riverview, 35 miles above the mouth of the Monongahela River.

The Youngstown Sheet & Tube Co. will enlarge its coal mining property at Nemacolin. This mine, developed during the last five years, is now producing an average of 4,500 tons a day with output running as high as 5,000 tons some days. It will be expanded and new equipment purchased for a production of 6,000 tons a day.

Appointment of a fuel administrator to take over and have charge of the distribution of fuel at Erie, owing to the strike of anthracite miners, is being sought by the city's finance director, who plans to sound Governor Pinchot on the subject. While Erie is supplied largely from the bituminous district, the director felt that there would be suffering in the city during the winter.

The new breaker of Madeira, Hill & Co., at Marion Heights, is almost finished and the management hopes to have operations started in it once the strike in the anthracite field has ended. This breaker will take the place of two other structures once it begins to operate. The structure is built of concrete and steel throughout, and is equipped with the most modern machinery.

**A Coke Producing Plant in the Hills of New Mexico**

These coke ovens, boilers and power house are located in Dawson, N. M., and are owned and operated by the Phelps Dodge Corporation.

The Buck Ridge mine at Johnson City, said to be one of the most modern in the anthracite valley, is involved in an interesting legal battle. More than a year ago the operation went into the hands of a receiver. About this time it was placed in charge of Madeira, Hill & Co. of Philadelphia, which improved the mine in different ways, replacing old pumps with new electric ones and driving new tunnels to tap rich coal veins. Now it is rumored that other mining interests are using their influence with a Philadelphia banking concern which controls the Buck Ridge operations to gain possession. It is reported that the Madeira-Hill company has been notified of a change in the lease and that injunction proceedings are now contemplated.

Coal companies in West Mahanoy Township have launched proceedings in court in Schuylkill County with the hope of wiping out some of the high paying tax collector and school treasurer jobs in boroughs and townships. The coal companies, by far the heaviest taxpayers in the township, contend in court that it is out of reason for the school treasurer to receive a salary of $12,000 a year. The operators believe a salary of $5,000 would be ample and have asked the court to hand down an order to this effect.

The new steel washery at Coleraine, which will replace the abandoned colliery of Van Wickle & Co., is fast assuming definite shape. The new owners are said to be planning heavy production when the mine suspension ends.

The Margaret Coal Mining Co., located in Indiana County, has let a contract to the Fairmont Mining Machinery Co. to erect a rope and button conveyor at its mine.

Maintenance men assert that the coal companies in the Panther Creek region are making heavy reduction in the forces. Operations at the Lansford shops also have been curtailed due to the mine strike. Usually more than 600 are employed at these shops, but just now the working force does not exceed 200.

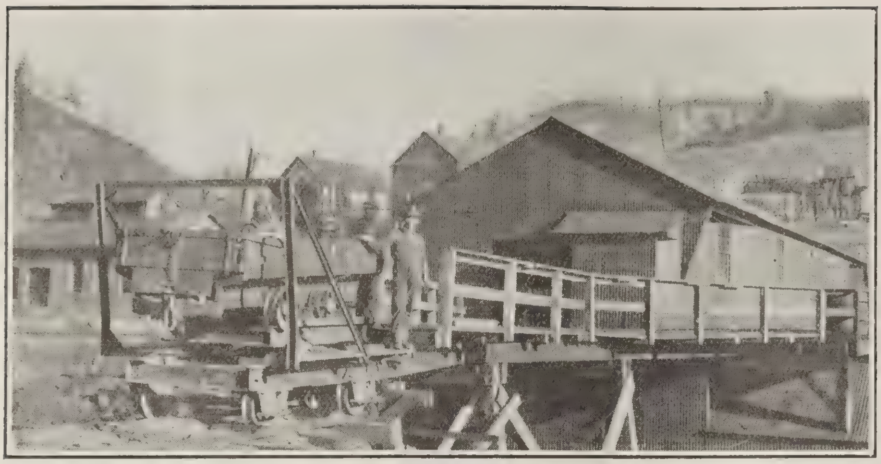
A new situation affecting the coal industry in the Pittsburgh district has arisen in the proposed abandonment of the slackwatering project in the Youghiogheny River which would make the stream more readily navigable. The United States Army engineers have suggested that plans for three locks in this river be abandoned and the immediate result has been many objections. There is a coal reserve of 14,000 acres in the lower Youghiogheny valley containing approximately 100,000,000 tons of coal, according to the Pittsburgh Coal Co., one of the principal objectors. The coal company points out that eventually consumers, principally steel companies, all along the Monongahela and Ohio rivers as far as Wheeling, will turn to the Youghiogheny valley for their coal supply.

## UTAH

H. H. Calvin, special representative of the United States Fuel Co. for the past two or three years, prior to which he was general salesmanager, has resigned to go to California. He is a son of the vice-president of the Union Pacific System and has been connected with the local fuel company since 1913.

## WASHINGTON

The engineering department of the Pacific Coast Coal Co. has announced that the two tunnels at the company's New Black Diamond mine, 20 miles southwest of Seattle, have been connected, and that the mine is expected to commence commercial production early in 1926. When in full working order the mine will produce about 2,000 tons of coal per day. About $1,000,000 has been spent in this development work since July, 1924. The town around the old mine will be abandoned and accommodations for the men will be provided in the locality of the new operation, which will give employment to about 500 men.



**End-Dumping Larry at Pond-Creek Pocahontas Co.'s Big 4 Mine**

This West Virginia operation disposes of slate by running cars carrying three and one-half to four tons of rock through the tipple onto an electric car-dumping larry. As this larry does not swing, it can dump over the end only. The track, as shown, is only about 50 ft. long so trolley wires are not in use, the larry being operated by a cable reel.

## VIRGINIA

The Virginia Iron, Coal & Coke Co. reports for the quarter ended Sept. 30, 1925, net income of $61,997 after interest, depreciation and taxes, equivalent after preferred dividend requirements to 30c. a share. This compares with net loss of $70,264 in the preceding quarter and net loss of $27,973 in the third quarter of 1924. Net income for the first nine months of 1925 totaled $209,038, equal to $1.15 a share, comparing with net loss of $73,380 in the corresponding period of 1924.

## WEST VIRGINIA

The sale of the Coal River & Eastern R.R. to the Chesapeake & Ohio Railway Co. was completed at a meeting of officials of both roads held in Washington on Oct. 15. Negotiations for the sale of the road have been going forward for some time. The Interstate Commerce Commission passed the final order for the sale of the road two weeks ago. This road is owned by the Coal River Collieries Co. It extends ten miles into Boone County between Seth and Prenter.

Fire of unknown origin late on Oct. 16 destroyed the blacksmith shop of the Starford Gas Coal Co. at Brydon, six miles west of Grafton. During a rainstorm the building burst into flames and burned to the ground in a few minutes. Officials said that burning of the shop resembled work of the conspiracy gang that operated in the Brydon section during the first five months of the year.

The Clarksburg District Mining Institute held a meeting Oct. 24, when plans were made for the revival of a mining extension class.

The coal industry was represented by a number of operators and sales agents who carried the message of Southern coal to New England when the visit of certain New England organizations last year was returned between Oct. 11 and 20 by representatives of Virginia, West Virginia and the Carolinas. In the party of West Virginia operators were T. E. Farrell, vice-president of the Pocahontas Fuel Co.; E. E. White, president of the E. E. White Coal Co.; Major W. P. Tams, Jr., president of the Gulf Smokeless Coal Co.; W. E. E. Koepler, secretary of the Pocahontas Operators Association, and others. R. H. Gross, president of the New River company, who lives in Boston, and numerous others connected with the smokeless industry joined the party on its arrival in New England.

The Wise Pocahontas Coal Co., Fairmont, has increased its capital from $50,000 to $100,000.

Increased production from the mines of eight coal companies operating in Raleigh and Wyoming counties in the Winding Gulf field, is to be made possible, according to an announcement, through a reorganization effected by Pittsburgh and New York capital. The Cory-Mann-George Corporation, of New York, is to be the sales agent for the various companies concerned. Included in the reorganization are the following companies: Sullivan Pocahontas Coal Co., Wood-Sullivan Coal Co., Pickshin Coal Co., Mead-Pocahontas Coal Co., Tommy Creek Coal Co., Raleigh Fire Creek Coal Co., Harty Coal Co., and the Barkers Creek Coal Co. Howard N. Eavenson is to become vice-president and treasurer of the New organization.

The Raleigh-Wyoming Coal Co., Glen Rogers and Edwight, is distributing a Safety-First button 1¼ in. in diameter in red, white and blue, "the colors of our national flag, believing that a careful man is at the same time a good citizen."

The Lovejoy Coal Co., composed of Masontown and Uniontown (Pa.) interests, has purchased the mine of the A. L. Black Coal Co. at Maidsville, near Morgantown, which consists of 30 acres of Sewickley coal land.

A sudden call for 3-in. lump coal came to the Northern West Virginia coal fields last week. Some of this coal is moving to the piers, but other shipments are being made to Jersey City and as far north as New Hampshire by rail, according to reports. The shortage of anthracite has created a demand for this size.

The American Coal Co. of Allegany County, McComas, is installing five type Y American pneumatic coal separators at its Crane Creek plant to treat coal passing $\frac{1}{8}$-in. screens as one size with a portion of the dust removed through aspiration. As a result of this additional installation all $\frac{1}{16}$-in. screens, or one-third of the total in the plant, will be removed. Two older type separators also will be removed, which with the screens will partly equip an additional plant. After this change has been made the coal company will treat all coal passing 2-in. screens with two less sizes than heretofore. The plant will have a capacity of 300 tons per hour when the work has been completed. The American Coal Cleaning Corp., Welch, is supplying the separators and the coal company is erecting them.

J. W. McCarthy has been arrested in New York City and is held under $5,000 bond to apear in federal court at Charleston on Nov. 17, it has been announced by W. C. Volkerdin, post office inspector. McCarthy, who operated the Kanawha-Hazard Coal Co., with general offices in the Moore Building at Charleston, is charged with using the mails to defraud. It is alleged that McCarthy represented to coal operators that he had an unlimited market for coal of all kinds and would place orders with various companies for coal to be delivered to consumers. After he secured orders he would have the coal shipped to the consumers, collect for the shipment and then fail to pay the operator for his product, according to the authorities.

## WYOMING

About 100 members of the United Mine Workers in Rock Springs have enrolled in the Rock Springs Labor College, which started class work Oct. 20. Six courses, including economics, civil government, journalism and public speaking, are offered. Co-operation between ministers of various Protestant churches and the labor leaders make this college possible.

Despite a recent heavy increase in production, the Rock Springs district coal output for September was approximately 20,000 tons short of the same period in 1924.

Following its policy of making home owning possible for its men, the Union Pacific Coal Co. is offering more lots for sale in the Brooks and Clark additions to Rock Springs. Recently the company agreed to deed to the City of Rock Springs a three-acre tract in the center of the city for the creation of a city park. The people who have been living in this district will be given preference in the purchase of the proffered lots. Sections of the former course of Bitter Creek also have been deeded to Rock Springs and when the filling in process is completed, will form salable lots and streets. The creek has been changed from a course through the center of the city to the northern edge, traversing coal and railroad company ground.

### CANADA

The house of William Hopkins, in the village of Newcastle in the Drumheller coal district of Alberta, was wrecked by an explosion on the night of Oct. 15. A stick of dynamite with a fuse attached had evidently been used. Hopkins is a coal miner and had worked at the A. B. C. mine during the strike and was quite active in the United Mine Workers organization. Some material was stolen from the Newcastle powder house two days before and this is apparently the use to which it was put. An investigation is being made by the authorities and the miners belonging to the U. M. W. A. have appealed to the federal Minister of Labor and the Attorney General of Alberta asking for protection from further outrages.

## Traffic

### Rates to Cement Mills Put on Parity

The Interstate Commerce Commission has ordered railroads hauling bituminous coal from the Pittsburgh-Youghiogheny, West Virginia, Meyersdale and Cumberland-Piedmont districts to Union Bridge, Md., via the Western Maryland direct and via the Baltimore & Ohio and Western Maryland railroads through Cherry Run, W. Va., to apply rates to that destination no higher than the charges contemporaneously maintained by the same carriers to Security, Md.

Tidewater Portland Cement Co. et al vs. Cumberland & Pennsylvania R.R. Co. et al (mimeographed report). The principal complainant, a cement mill, pointed out that the existing adjustment forced it to pay 51c. per ton more on coal from the Cumberland-Piedmont and Meyersdale regions than did its competitors at Security, 39 miles less distant. At the same time the Commission declined to disturb general group interrelationships or to find the rates to Union Bridge per se unreasonable.

### Demurrage at Mines Outlawed

The attempt of the Tennessee R.R. to charge demurrage on empty cars placed at the mines for coal loading and on cars held under load awaiting billing instructions has come to grief. The Interstate Commerce Commission, in a mimeographed opinion in I. & S. Docket 2443, *Demurrage on Coal and Coke*, has ordered the carrier to cancel tariffs under suspension, which excepted such cars from the exemption provided in the Uniform Demurrage Code. The carrier sought to justify the exception to the general exemption on the ground that per diem charges on foreign equipment held at the mines were a serious drain upon its financial resources and further alleged that operators, recognizing this, had agreed several years ago to reimburse it for such car rental when cars were held over 48 hr. following the first 7 a.m. after placement. Refusal of the Roach Creek Coal Co. to continue such payments led to the filing of the tariff under suspension.

"Although respondent (carrier) states that the proposed schedule was published for the sole purpose of recovering its car hire cost on cars under load," concludes the Commission, "It would be applicable to all cars. In other words, it would have the effect of largely offsetting respondent's cost of car hire by assessing shippers an amount equal thereto beyond a certain time. Respondent is under obligation to furnish the equipment necessary for the transportation of traffic tendered to it, and if it does not possess such equipment the charges paid for the rental thereof cannot be considered as an item of expense which is not included in the rate. * * * The exception here proposed has no apparent purpose except to transfer respondent's car-hire costs to the coal operators."

### Tombstone Rates Approved

Rates on bituminous coal and coke from mines in Colorado and New Mexico, groups 1, 2, 3 and 4, and from Albuquerque, San Antonio and Gallup, N. M., to Tombstone, Ariz., are not unreasonable, holds the Interstate Commerce Commission in a recent mimeographed opinion dismissing the complaint in *Harry E. Macia v. A. T. & S. F. Ry. Co. et al.* Complainant had sought the application of main-line points maintained at Fairbanks to Tombstone, located on a branch-line of the Southern Pacific 9 miles distant from Fairbanks. The differential against Tombstone is 70c. per ton.

## Obituary

**Warren S. Lee**, 72, veteran merchant, banker and president of the Russett Coal Co., operating mines in the Buckhorn district of Cambria County, and who also had a hand in the development of the Wopsonnock district some years ago, died at his home in Altoona Oct. 18.

**Senator William Roche**, of Halifax, N. S., died on Oct. 19, at the age of 83 years after an illness of several months. He was extensively engaged in the steamship and coal business and was one of the prominent business men of Halifax, where he was born and spent most of his life. He represented Halifax in the Canadian House of Commons for some years and in 1910 was appointed a member of the Senate.

## Industrial Notes

**The Robert June Engineering Management Organization**, of Detroit, Mich., has acquired control of the **Electric Flow Meter Co.**, at Kansas City, Mo., formerly the Hyperbo-Electric Flow Meter Co., of Chicago, and will henceforth operate the business under its own management with executive offices at 8835 Linwood Ave., Detroit. Robert June becomes president of the company, J. M. Naiman, formerly general manager, becomes vice-president, consulting and chief engineer, with Major W. W. Burden, of the Robert June Organization, as treasurer.

A direct factory branch has been opened in Birmingham by Fairbanks-Morse & Co., with offices in the Birmingham Athletic Club Building, Fourth Avenue and Twenty-third Street, North. A large warehouse will be established for the distribution of Diesel engines, electric pumps, motors, domestic light and water plants, gasoline engines and feed mill machinery. M. B. Brister, formerly located in New Orleans, will be the local manager.

**The Climax Engineering Co.**, Clinton, Iowa, announces the appointment of the Coast Machinery Corporation, 829 Folsom St., San Francisco, Calif., as sales representative for California. Other new agencies are as follows: The George W. Whitehead Co., 61 The Terrace, Buffalo, N. Y.; Edward C. Dingman, 1005 Keefer Building, Montreal, Can.; Harvard Turnbull & Co., Ltd., 912 Excelsior Life Building, Toronto, Ont.; the Advance Contractor Repair Co., 1332 W. Lake Street, Chicago, Ill.; the Mine & Smelter Supply Co., 121 West Second St., Salt Lake City, Utah; McDonald & Burgman, Jacksonville, Fla.

**The Electric Controller & Mfg. Co.** announce the appointment of **Eicher & Bratt**, Seattle, as representatives for the sale of E. C. & M. control equipment in Oregon, Washington, Alaska, and the Panhandle district of Idaho. Eicher & Bratt also represent in their territory the Pittsburgh Transformer Co., Jewell Electric Instrument Co., and the Electric Power Equipment Corporation.

At a reorganization meeting of the board of directors of the **Cincinnati Electrical Tool Co.**, Cincinnati, Ohio, the following officers were elected: Joseph Wolf, president and treasurer; R. K. LeBlond, vice-president; Edw. G. Schultz, secretary. This company manufactures a large variety of portable electric drills, grinders and buffers, has branch offices in all the large cities and also is represented in the principal foreign countries. Plans are under way to move into larger quarters soon and expand the business in a general way.

**The Diamond Power Specialty Corporation**, of Detroit, announces that the territory of the **Lathrop-Trotter Co.**, 733 Union Trust Bldg., Cincinnati, Ohio, which has been sales representative for the Diamond Power Specialty Corp. in the Cincinnati territory for many years, has been extended to take in Indianapolis and adjacent territory in central and southern Indiana.

Consolidation of the Weir Frog Co. and the Kilby Frog & Switch Co., to be known as the **Weir Kilby Corporation**, is announced. O. DeG. Vanderbilt, Jr., is president of the company; E. M. Kilby, first vice-president, and J. K. Lansdowne, vice-president. Sales offices and plants are at Cincinnati, Ohio, and Birmingham, Ala.

**The General Electric Co.** has moved its Birmingham (Ala.) office from the Brown-Marx Building to the fourth floor of the new twelve-story office building of the Alabama Power Co., Sixth Avenue and Eighteenth Street, North.

## Association Activities

D. H. Morton was elected president of the **Kanawha Coal Operators Association** by its directors after the directors had been re-elected at the annual meeting of the association held at Charleston W. Va., Oct. 15. Mr. Morton was advanced from the vice-presidency he held last year, succeeding John Laing, of Charleston, as president. E. O. Dana was elected vice-president and John L. Dickinson and D. C. Kennedy were re-elected treasurer and secretary respectively. President Morton, W. M. Wiley and F. O. Harris were chosen as members of the executive board. The board of directors consists of Mr. Laing, Mr. Dana, Mr. Wiley, Mr. Harris, C. A. Cabell, Holmes Morton, W. C. Mitchell, J. L. Warner and E. M. Merrell.

**Coal Operators Association** will hold a combined annual members' meeting, golf tournament, banquet and efficiency meeting in Knoxville, Tenn., Nov. 20. The board of directors, with C. W. Henderson, president, will meet at the association headquarters in the Bankers Trust Building, followed by the general members' meeting and annual election of officers at 10:30 a. m. At 2 p. m. the Southern Appalachian Efficiency Association, composed of the mine superintendents and foremen, will meet. In the afternoon a golf tournament, arranged by Victor N. Hacker, will be held at the Cherokee Country Club, where the banquet will be held at 7 p.m. with Judge H. B. Lindsay as toastmaster. Transportation and other officials of the railroads serving this field will be guests at the banquet.

## Coming Meetings

**Canadian Institute of Mining and Metallurgy.** Annual western meeting, Nov. 3-5, Winnipeg, Manitoba, Can. Secretary, George C. Mackenzie, Drummond Bldg., Montreal, Que., Can.

**Illinois Mining Institute.** Fall meeting, Nov. 6 and 7 at West Frankfort, Ill. Secretary, Frank F. Tirre, St. Louis, Mo.

**Harlan County Coal Operators' Association.** Annual meeting, Nov. 18, at Harlan, Ky. Secretary, E. R. Clayton, Harlan, Ky.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering.** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

**American Mining Congress.** Twenty-eighth annual convention, Dec. 9-11, Washington, D. C. Secretary, J. F. Callbreath, Munsey Bldg., Washington, D. C.

## New Companies

**The Rogers Coal Co.,** Drakesboro, Ky., capital $25,000, has been incorporated by C. A. Rogers, I. C. Rogers and Edgar Rogers.

**The Janney Coal Mining Co., Inc.,** New York City, has been chartered at Albany, N. Y., with $25,000 capital, all subscribed, to operate coal mines. G. M. Janney, Robert R. Schote, 1 Broadway, and G. T. Goldthwaite, 20 East 35th St., New York City, are directors and subscribers.

**The Tar Distilling Corporation,** New York City, has been chartered at Albany, N. Y., with capital of 1,000 shares of no par value, to produce coal, coke and coal tar, by James H. Tully, N. P. Callaghan and Wallace Ingraham, of 25 Broad St., New York City.

**The Muir Pratt Coal Co.** has been chartered by W. C. Muir and Andrew Dunlap, 310 42d St., Birmingham, Ala.

**The Carnall Coal Co.,** capital $15,000, has been incorporated by Wm. McKinnin and Walter Cobb, of Fort Smith, Ark.

**The New Garland Pocahontas Coal Co., Bluefield, W. Va.,** has been chartered by S. N. Huffard and Kenneth C. Patty.

**The Logan-Winifred Coal Co.,** Logan, W. Va., with a capital of $25,000, has been incorporated by G. R. Claypool and G. W. Raike.

**The White Star Coal Co.** of Cincinnati, Ohio, was incorporated under the Ohio State laws on Oct. 16 and will be directed by Louis H. Stone as general manager. Stone until Sept. 1 was general manager of the Southern Coal & Coke Co. Mines at White Star, Mathel, Hamby and Adelia, Ky., are in the group for which this company will be the distributing outlet.

**The Oxita Coal & Railway Co.** has been formed at Russellville, Ark., with A. M. Maline as president to develop coal land in the Russellville region.

**The Republic Coal Co.,** of Mulberry, Kan., has been granted a Kansas charter. The capitalization is $30,000. The incorporators are J. A. Holland, Silas James and A. E. Ginther, all of Mulberry. The company last August purchased the electric shovel and holdings of W. P. Kelley, of Pittsburg, and since then has been producing 200 tons a day on the 200-acre lease, which is near Mulberry.

## Trade Literature

Heisler Locomotive Works, Erie, Pa., has issued a new bulletin on **Haulage**, divided into sections according to the different industries served. Increases in haulage capacity from 60 to 100 per cent are described. The bulletin contains 18 pp.; 8½ x 11 in.; illustrated.

The D. O. James Mfg. Co., Chicago, Ill., announces its new general catalog No. 99, of 288 pp., covering its complete line of products, including **gears, speed reducers and couplings**. It is well illustrated and contains general engineering data of interest to engineers, designers and purchasers of transmission equipment.

**Portable Air Compressors.** Sullivan Machinery Co., Chicago, Ill. Bulletin 77-N. Pp. 31; 6 x 9 in.; illustrated. Describes three distinct types: WK-312 and WK-314, gasoline-engine-driven; WK-34, belt driven from a tractor, and WK-32, driven by belt from an electric motor.

**IXL Speed Reducers.** Foote Bros. Gear & Machine Co., Chicago, Ill. Catalog No. 26. Pp. 80; 8½ x 11 in.; illustrated. This revised edition contains much new engineering information pertaining to the solution of problems involving spur- and worm-gear reducers. Tables, formulas, practical problems and general information of interest to engineers and plant executives are included.

The Diamond Power Specialty Corp., Detroit, Mich., has reprinted a bulletin entitled **"The Best Paying Investment in the Power Plant,"** featuring Diamond Valve-in-Head Blowers and containing information of interest to power operators.

The Kuhlman Electric Co., Bay City, Mich., recently issued a handbook entitled **"30 Years of Uninterrupted Service to the Electrical Industry."** It contains practical engineering data and material for the electrical or consulting engineer and the man who operates transformers.

**Diamond Core Drills.** Sullivan Machinery Co., Chicago, Ill. Catalog No. 80. Pp. 80; 6 x 9 in.; illustrated. Describes the process of diamond core drilling for prospecting mines and mineral lands and for engineers' test borings, and includes specimen lists of diamond drill equipment, instructions for selecting an outfit and a chapter on setting up and operating the machine under ordinary field conditions.

# New Equipment

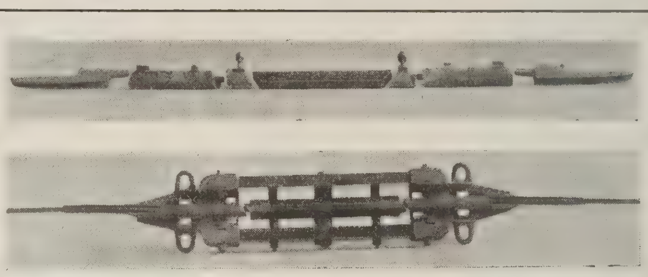
## Double Insulation Improves Section Insulator

Long life, double insulation, bronze arcing tips and renewable underrun are the outstanding features of the new section insulator manufactured by the Westinghouse Electric & Manufacturing Co.

Section insulators should be capable of breaking a motor-load current up to 750 amp. and 650 volts under all conditions without holding the arc, and should also insulate trolley lines from each other and from the ground, up to 750 volts without noticeable current leaks, under all weather conditions. This newly designed section insulator meets these requirements through the use of double insulation, a hickory runner and two air gaps. It has 8 in. of minimum runner insulation. It is claimed that this hickory runner is admirable for its special use, and in addition, is able to withstand severe weather conditions due to the treatment that it undergoes in construction. The additional insulation in the form of air gaps is particularly effective because it has bronze arcing tips of high tin content on both sides—an entirely new feature in air gap insulation. The skewed air gaps will break a current under all weather conditions. They have ample blow-out surface.

Long life of the insulator is assured by its sturdy construction. The main body of the insulator is made of such material that it will last indefinitely. End castings are made of high grade malleable iron, thoroughly cleaned, treated and zinc flooded. All bolts and studs are made of phosphor bronze, while end clamps and arcing tips are of bronze with a high tin content.

Smooth underrun is another feature of this new design. The complete underrun can be replaced without removing the insulator from the line. In fact all wearing parts can be replaced by merely removing two hexagon nuts, and without disturbing suspension spans, trolley wires or insulator bodies. Bayonet approaches help prevent hammer blows as the trolley wheel enters the insulator.



**Increases Its Utility**

Views of Insulator showing double insulation in form of air gaps and hickory runner.

## Recent Patents

**System for Handling Coal, Ashes, etc.;** 1,543,433. Wm. E. Hale, Fort Washington, Pa., assignor to the R. H. Beaumont Co., Philadelphia, Pa. June 23, 1925. Filed Nov. 9, 1923; serial No. 673,693.

**Cutter Head for Coal-Cutting Machines;** 1,543,516. Thomas E. Pray, Chicago, Ill., assignor to the Goodman Mfg. Co., Chicago, Ill. June 23, 1925. Filed Nov. 3, 1921; serial No. 512,453.

**Coal-Handling Plant;** 1,543,627. Russell W. Stem, Bethlehem, Pa. June 23, 1925. Filed March 15, 1924; serial No. 699,561.

**Dusting Apparatus;** 1,543,916. Lee B. Green, Lakewood, Ohio, assignor to the Globe Machine & Stamping Co., Cuyahoga, Ohio. June 30, 1925. Filed Sept. 8, 1923; serial No. 661,585.

**Pulverized Coal Feeder;** 1,543,936. Archibald S. McMillan, St. Louis, Mo., and George W. Whipple, Cherryvale, Kan. June 30, 1925. Filed Oct. 21, 1921; serial No. 509,358.

**Tire for Mine-Locomotive Wheels;** 1,543,971. J. N. Abbott, Christopher, Ky. June 30, 1925. Filed April 13, 1925; serial No. 22,893.

**Mining Machine;** 1,544,071. Morris P. Holmes, Claremont, N. H., assignor to Sullivan Machinery Co., Chicago, Ill. June 30, 1925. Filed July 21, 1919; serial No. 312,346. Renewed Nov. 20, 1924.

**Mining Machine;** 1,544,073. Robt. E. Osgood, Claremont, N. H., assignor to Sullivan Machinery Co., Chicago, Ill. June 30, 1925. Filed June 13, 1921; serial No. 477,045.

# COAL AGE

McGraw-Hill Company, Inc.
James H. McGraw, *President*
E. J. Mehren, *Vice-President*

Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. Dawson Hall
*Engineering Editor*

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## Pleasing the Public

CONSIDERATION for the public has been the watchword of the anthracite producer, wholesaler and retailer, since the quarrel between the operators and miners started.

From the very first the operators desired to forestall trouble. They asked for arbitration. They desired to continue working at the old scale till the matter was arbitrated. They sought a contract so long, yet so subject to reasonable modification, as would assure the public of a continuous supply of coal.

Denied these three they went into conference with the miners and listened patiently day by day to their arguments for more wages and allowances. All in vain; the miners broke up the conference and called a strike.

Then when anthracite began to get scarce, the retailers agreed to buy bituminous coal in place of anthracite, and the hard-coal producers volunteered their services, established to encourage the sale of anthracite, to sell the rival fuel. The retailers also put coal on one side to take care of the small consumer.

Nothing more could have been done. Mr. Lewis realizes that the readiness of the hard coalers to help the consumer has won the hearts of the public, and he is making much capital out of an alleged identity of anthracite and bituminous operators. The fact that the president of one anthracite company, which he manages and does not own, has a son who is in a position of authority in some West Virginia soft coal properties means nothing even if true. The statement that the Glen Alden Coal Co., an anthracite corporation, has a bituminous subsidiary is incorrect. It is true, however, that the Lehigh Valley Coal Co. has a 1,000-ton mine in the bituminous regions. Some of the leading independents like Madeira-Hill, Whitney & Kemmerer, the M. A. Hanna Co. and the Dodsons have bituminous mines, but only one of these companies produces low-volatile coal. Moreover these are smaller concerns, and what are they among so many?

The anthracite companies are in no way profiting from the strike. It is to them a most unfortunate event. They do not like to see soft coal replacing hard but they wish the public to keep warm, they seek the goodwill of the people and do not want a surrender made to those who are creating trouble for operators and public alike.

## Is the Miner a Man Or a Ward?

WHY IS THE PUBLIC so interested in whether the miner is well paid? The ditch digger's family has to live just like the miner's. Why not be as much anxious to see him get a square deal? The difference is that the miner has by good advertising and the threat that he will cut off the public's coal supply made the man on the street take an interest in something that really is not any more a matter of concern to him than whether his iceman, the girl behind the counter at the store or the telegraph boy is getting a sustenance wage. These people shift for themselves and it seems that the public might leave the miner equally free to do the same.

If he is not paid a wage as good as the wage of other men, he can look for other jobs. There are plenty of them. Why worry the public? The cure is in his own hands. Calvin Coolidge hasn't said so but he seems to take the point of view that the miner is just one among many and not entitled to the paternalistic interest of the Government. Is the miner a man or is he a ward? When the federal authorities interest themselves in wages the activity should be general not specific and should be devoted to those industries where the pay is lowest.

## As an Engineer Thinks

NEED for the engineer to take part in the direction of national affairs is being expressed wherever any of the profession meet. This sentiment has been advanced by Herbert Hoover and more recently by Governor Dern, of Utah, at a meeting of the American Institute of Mining and Metallurgical Engineers. In point of fact has not this estimation of the engineer as the real thinker of thinkers been somewhat overdone?

The engineer truly thinks concretely and, as he is, or should be, college bred, he has a degree of idealism which seems to come to most of those who set themselves off from the world for three or more years to study and reflect. But as the rest of mankind does not think quite so concretely, does not analyze, arrange and argue on the basis of statistics and has a lesser degree of idealism it is easy for the engineer to get into a wrong psychologic attitude and to fail accordingly in his leadership. He may draw his conclusions from masses of figures; he may exercise his judgment with due idealism but when he comes to make his suggestions he must speak in the terms of his hearer's psychology. To think in one formula and argue on the basis of another requires a finesse that few engineers acquire.

The engineer is loath to cast overboard all the elaborate figures he has done so much to accumulate. He is prone to endeavor to preach a turgid idealism that the public is slow to accept unless an emotional appeal is added to the argument. He gives pro and con for every statement forgetting that to the public the sum of many pluses and minuses is always zero regardless of which has the greater value. The man who leads is he who lets the public infer that success has only one sign.

As an engineer thinks so is he? Only rarely do we find men who like study and reflection delighting also in the hurly-burly of political life. We seldom discover men who find pleasure in long columns of figures and tabulations who are also gifted in the art of moving the passions of mankind. There are such men, patient in detail and yet capable of forensic effort, but on the whole one class of men is prone to think and the other to talk and the talkers will never be thinkers nor the thinkers talkers, more's the pity.

## What Will Britain Do in May?

AT THE DINNER of the Academy of Political Science in New York last week Lord Thompson, a British brigadier-general and former Secretary of State for Air, received all the honors that Americans usually give to foreigners who come preaching a gospel of beneficence. He prefaced his remarks with a statement that if profits and a living wage are mutually exclusive so that if there is a living wage there can be no profits and if there are profits there can be no living wage, then the profits may have to be foreborne.

But it must be remembered that the mine workers of Great Britain are working only seven hours a day and really have little right, therefore, to be discussing the living wage. Furthermore, they have repeatedly and deliberately restricted output as has been shown by actual tests and by the output of miners in mines run on the co-operative basis.

At one mine having a 4-ft. 6-in. seam of coal with a good roof it was decided by the local union that four gross tons a day was all a man could be expected to get with the aid of a compressed-air "radial drill." The company demurred at setting the daily stint so low. "Accordingly the mining manager," we are told, "described as a man of 50, rather large, in company with an underground manager of 60, who also was very large showed the officials [of the union] what they could do. These two men averaged 15 tons 7 cwt. [17.19 net tons] each for a seven-hour day. After this demonstration the union officials put the figure no higher than eight tons for a day's work."

The big talk about inefficiency in British mining is largely for the consumption of the public. The miners are opposed to efficiency. They think it will lay off British workmen. Nowhere is this idea less justified. In Great Britain, the export trade is important. The British mines are being thrust out of that trade by high prices and if efficient methods of production were adopted it would be foreigners who would be laid idle and not Englishmen, Welshmen or Scotchmen.

Then again, if coal were cheaper, more coal would be bought within the confines of the island. The cost of steel, for instance, would be greatly reduced if coal were cheaper. Yet again, the house fires of Great Britain are used with amazing frugality. It is true they waste coal and heat, but the British householder goes without a fire in as many places as he can. The high price is making him more frugal than ever. In America so well are the houses heated that it would be difficult to increase the sale of domestic coal, at least in normal years. This year there will be some real frugality, it is true, but usually there is no great opportunity to expand domestic demand. But in Great Britain that should not be so.

Another significant fact is that the tonnage per man has been decreasing for years in the British Isles, from 332 tons annually in 1883 to 220 tons annually in 1924 despite the introduction of machinery. There is evidence that the British workman wants a living wage but is none too anxious to earn it. It might be well also to suggest that the lowest living wage is not the basis for calculation. Some of the mining areas which pay low minimum wages really should not be working at all.

What will Great Britain do in May when the subsidy ends? Will she give way to coercion and renew the subsidy? Let us think awhile. The wages cannot be so much lower in mining than in other industries, or the miners would desert the mines. That is what happens in other industries in Great Britain when wages get too low. Why should the miner and railroad man be protected more carefully than any other workman? Why indeed? Solely because they are organized and paralyze the public of Great Britain when they strike. Here, as in England, it is not the wrongs of the worker but the threat of idle factories and cold houses that makes the public act. His Lordship did indeed work a wonderful spell on the Political Scientists of the United States at their annual powwow, that they doffed their thinking caps in his honor.

## Keep Right With the Community

NO COMPANY is justified in ignoring the interests and goodwill of the community in which its plant is located. Friction perhaps cannot always be avoided. The new company officials are interlopers in an old order long established; the superintendent is a newcomer among the first families of the village. Even the county school superintendent, the sheriff, and the distinguished representatives of the bar may be eclipsed temporarily by the new coal company representative.

So it is well to go easily, creating goodwill as one goes. There are assessments to be levied, taxes to be paid, safety laws to be enforced, roads to be maintained, and it is well to have the community favorable to the company success. The miners, too, react to an atmosphere of favor or of criticism. They get some of their ideas from local opinion, and when a newspaper reporter comes into the town he is led or misled as the case may be according to the prevailing sentiment.

No operator seems to care about the local editor who sends press notices to the city and to whom the city reporter directs himself when he comes to town for a story. Knights of the pen working for yellow papers are usually bent on getting just the kind of material they have been sent for rather than the truth, but their work is eased and the result made more certain if the village is well sprinkled with those who wish the company ill.

If the industry would thrive it must have friends at home. It must cultivate the goodwill not only of the miners but of the community. Those industries have been most successful that have looked beyond their employees to the employees' families and beyond the families to people of the immediate vicinity—the merchants, the farmers and others forming the community bordering on the mine. No company will succeed that believes itself to be operating in a vacuum.

MANY ENCOURAGING TRENDS toward greater prosperity are to be observed in the business currents of the country. The Atlantic States Shippers Advisory Board has just completed a survey showing, for instance, that distribution of goods at wholesale and retail in the Eastern Atlantic states for the last quarter of this year will show an increase of from 10 to 15 per cent over the last quarter of 1924. This fact means something to the basic industries of the country.

# Reconditioning Cuts Valier Mine Costs

## Labor and Power Saved and Safety Increased By Program of Changes that Already Has Made Total Reductions Estimated at 20c. a Ton

**By Frank H. Kneeland**
Associate Editor of *Coal Age*
New York City

VOLUME OF OUTPUT from a coal mine usually exerts a potent influence upon the expense of producing coal but it is not always the controlling factor. A determined effort on the part of the operator to cut down his mine costs may be even more potent. This has proven true at the Valier mine of the Valier Coal Co. in southern Illinois. Although this mine for a brief period last year held the world's record for tonnage brought through a single opening during a single shift, thus establishing its claim to greatness, its output for the year dropped 21 per cent which would, in the natural course of events, increase the cost per ton. But the total production cost during 1924 actually was reduced 20c. a ton. And this reduction is still going on. The company hopes for even lower costs through better equipment and management.

### IT *CAN* BE DONE

IF AN operator determined to reduce his mine costs 50c. a ton just where would he begin?

This article tells where the Valier Coal Co. began—and shows it got somewhere. Since the early part of 1924 a program of cost reduction has been in progress at Valier. During that year changes in equipment and method were made involving the expenditure of $48,100. They are resulting in annual economies estimated at $76,380. Even though the mine worked only 158 days in 1924 as compared with 231 days in 1923 and produced less than a million tons instead of equaling the 1923 output of 1,226,447 tons, the operating expense was reduced 10c. a ton and total production cost was lowered 20c. a ton. More improvements have been added this year.

During the past few months a whole series of improvements in various details of operation have been made at this mine, all of which have as their primary object either a reduction in the labor force or a decrease in the expenditure of power. Such changes and alterations cannot fail to make their influence felt on the cost sheets and increase the financial efficiency of the operation, which, in the last analysis is the kind of efficiency in which the stockholder feels the keenest and most lasting interest. On the other hand, some of the improvements made at this mine have aimed at safety and safety alone. It is well recognized, however, that greater safety pays.

The changes made and contemplated at this mine naturally divide themselves into four main divisions, namely: Economic changes below ground, economic changes on the surface, safety measures below ground and similar measures on the surface.

Although the original plan of the bottom permitted the handling of a large volume of coal, it possessed certain clearly defined drawbacks. In the accompanying drawing the original layout is shown in light lines and the improvements made during the past summer are shown heavier. The main haulage headings extend east and west. By the original arrangement when trips came from either side the haulage locomotive uncoupled from them and had to wait until the bottom motor pushed the cars into the bottom before it could couple to the waiting empties and move them back into the mine.

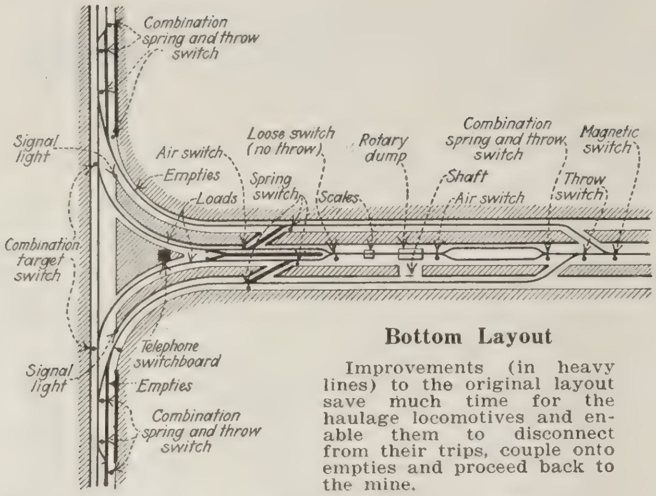
By slightly separating the loaded tracks and laying a motor track between them, switching at the shaft bottom has been minimized. Suppose a trip comes from the west side of the mine. The haulage motor proceeds onto the left-hand loaded track leading to the dump as far as the slant passage or "shoofly" leading to the left-hand or west-side empty track. Here it uncouples from the trip, travels through the shoofly, couples onto the empties there waiting and returns immediately back into the mine.

The forward end of the loaded trip is left in such a position that it may be engaged readily by the shifting ram that works back and forth across the top of the bottom locomotive. By means of this ram or push bar, which is moved by means of a rack on its lower side engaging with a pinion on a shaft actuated by a handwheel from the driver's seat, a trip of cars upon either track may be pushed forward to the dump. Trips coming from the east side are treated in exactly the same manner. Thus there is no waiting of one motor for another on the main bottom.

A trip from either side must, however, be fed practically through the dump before another loaded trip from the same side may proceed into the bottom. This condition is indicated by a signal light at the entrance to the bottom, the position of which is shown on the drawing. A green light indicates that the sidetrack is clear and that a loaded trip from that side may proceed. A red light signals that loaded cars still block the shoofly to the empty track and the loaded trip accordingly waits on the main haulage road until the light changes.

### MANY TYPES OF SWITCHES USED

This bottom is decidedly interesting also because of the various types of switches employed in its layout. Thus, there are spring switches, air switches, throw switches and magnetic or solenoid switches as well as combinations of spring and throw types. Several of the switch stands both here and elsewhere throughout the mine are provided with targets similar to those used on railroads. These are lighted electrically thus obviating all danger of igniting either gas or dust from



**Bottom Layout**

Improvements (in heavy lines) to the original layout save much time for the haulage locomotives and enable them to disconnect from their trips, couple onto empties and proceed back to the mine.

an open flange. Annual savings in 1924 alone are estimated at $9,182.

During the past summer the dump at the shaft bottom, which is of the rotary or revolving type discharging two cars at a time was raised $1\frac{1}{2}$ ft. and the door or valve that controls the flow of coal to the bins below it so arranged that it can be thrown by compressed air. This saved the services of one man and rendered operation of the door quick and positive. At this mine the skips are unusually large, holding three mine car loads of coal or about 13.2 tons each. When this mine broke the world's record on Nov. 25, 1924, by hoisting 8,664 tons of coal in a single shift the hoisting cycle averaged 44 to 45 sec. so that quick, positive manipulation of this valve is essential.

### Rolls Make Heavy Grades

Although the No. 6 coal bed of Illinois is a highly persistent measure and fairly uniform in thickness, it is so subject to rolls and minor faults in this locality that it is the exception rather than the rule that any plan of projection can be strictly adhered to. When, however, a definite plan is followed, as must be the case with the haulage roads if a large output is to be obtained, the grades are liable to be heavy both with and against the loads.

This was the case at Valier and in order to minimize the evil effects of such grades both on the rolling stock and the power consumption much of the main haulage roads have been regraded, bottom being lifted in some localities and top brushed in others. In one place a cut 13 ft. deep has been made. While such work is expensive it means savings in power, decreased wear and tear on both track and rolling stock and increased safety and reliability in operation.

All the main haulage tracks in this mine have been overhauled and all bonds put in proper shape. In this work copper terminal bonds have been electrically welded to the rail flanges. These bonds are located on the inside of the rail and span the fish plates, or splice bars thus assuring a good return for the power circuit.

Automatic reclosing circuit breakers have been installed below ground tying all sections of the mine together electrically. This will obviate delays arising from the overloading of any one section as well as doing away with the services of two men. An investment of $7,500 results in a saving of $3,372 a year.

### Change Motor-Generator Station

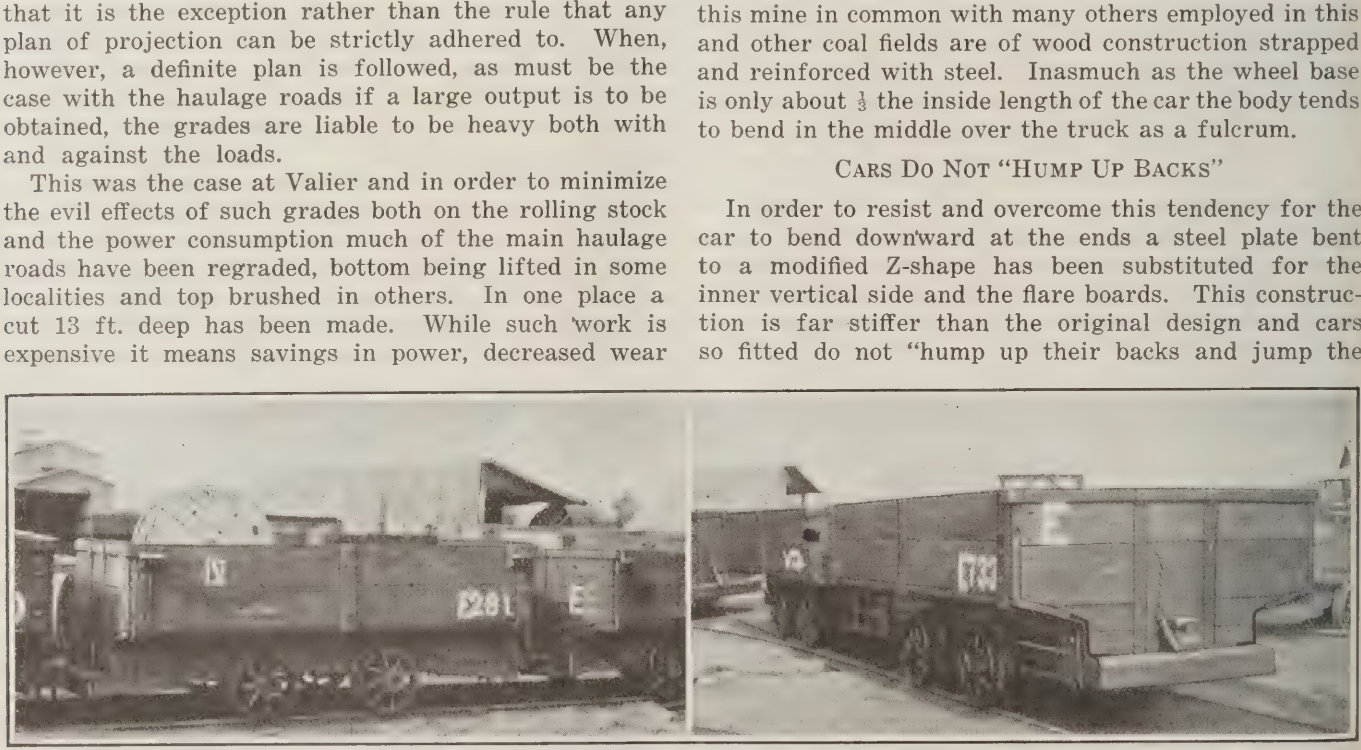
The underground motor-generator station has been relocated. Thus it has been brought more nearly to the center of the underground load which it serves, resulting in better voltage regulation. The capacity of feeder lines has also been increased so as to obtain adequate power for haulage and other purposes throughout the entire mine.

A change has also been made in the lubricant employed for the mine cars and in the means of applying it. Grease was first substituted for oil as a mine car lubricant and then an electrically operated grease gun replaced the hand methods employed in grease application. The saving made by installing the electric gun was $2,000 last year and the total reduction in lubrication cost was $12,000 more.

Nor has improvement to the car been confined to means and methods of lubrication, even though these accomplish much in the way of lessened expense, increased reliability and decreased wear and tear. The design of the mine car has been improved so as to increase its longitudinal stiffness and its resistance to drooping at the bumpers. The cars originally used at this mine in common with many others employed in this and other coal fields are of wood construction strapped and reinforced with steel. Inasmuch as the wheel base is only about $\frac{1}{3}$ the inside length of the car the body tends to bend in the middle over the truck as a fulcrum.

### Cars Do Not "Hump Up Backs"

In order to resist and overcome this tendency for the car to bend downward at the ends a steel plate bent to a modified Z-shape has been substituted for the inner vertical side and the flare boards. This construction is far stiffer than the original design and cars so fitted do not "hump up their backs and jump the



**Drooping Tendency of Old Mine Cars Overcome in New Design**

On the left is an old car of all-wood construction. The tendency toward drooping at the bumpers and humping in the center over the truck is plainly discernible. On the right appears a car of the new design in which is embodied a plate bent to the form of a modified Z affording great longitudinal stiffness. Each car is numbered and those for the east half of the mine are stenciled E and those for the west half W. Thus the cars are kept separate, even though passed through a common dump.

**Where 6,000 Bits Are Sharpened Daily**

Two men, two oil furnaces and two bit sharpening machines do work that probably would require from 12 to 16 men if equipped only with ordinary forge and anvil. Bit sharpening is practically a manufacturing process and manufacturing methods may be followed in its performance.

track" as the old ones sometimes had a way of doing. The difference in the appearance of the old and new cars is readily apparent from the accompanying illustrations.

In order to improve the "nervous system" of the mine and render inter-communication between its various members quick and sure a complete telephone system has been installed. This is fitted with a central exchange the location of which is shown in the drawing. It is similar to that employed in large office buildings and small towns. Where noise is liable to interfere with the use of outlying phones these are installed within a suitable booth provided with a door. The coal mine thus borrows a leaf from the metropolitan telephone system's notebook.

For a long time, probably ever since this mine had been started, men had been employed to carry sharp bits to the machine runners. This was obviously extravagant in man power yet followed precedent established long ago when "nipper boys" carried the pick points of the old pneumatic punchers. Bits for the undercutters are now handled through a regular bit station. Sharp bits are shipped to this point in bulk. Each machine runner has a bit bucket or container and sharp bits to a number equal to that of the dull ones turned in at the close of the previous cutting shift are issued to him at the beginning of the night's run. This one change, which was instituted at practically no cost, is responsible for aggregate savings estimated at well over $5,000 per year.

### Savings Made Above Ground

But changes and savings effected at this mine have by no means been confined to the underground. The original railway track grades were such that handling of cars in the mine yard and at the tipple was difficult and expensive. It was often necessary to resort to pinching in order to move the cars before, during and after loading. These tracks have now been regraded so as to obviate all pinching and car retarders have been installed under the tipple.

Control of all cars while loading has been centralized in the hands of one man stationed in a booth suspended between the lump and egg tracks. This man can easily oversee all loading operations and move the cars as necessity may require. It is estimated that savings in labor costs alone aggregating at least $4,000 per year will result from this method of car control.

Refuse from the picking tables as well as slate and rock were formerly dumped into a bin together. From here this mixed material was shoveled into wagons or carts and hauled away to be used in making fills. Today the pickings and the mine rock are segregated, the rock being discharged into flat cars from which it is unloaded by means of a locomotive crane fitted with a clamshell bucket. Instead of wasting the pickings from the tables this material is now utilized as fuel.

For years materials and supplies intended for use at the mine—ties, props, sand, cement, machinery and what not—were unloaded from cars on the track above the tipple and hauled to storage by teams or trucks. Last summer a "material track" was installed rendering it possible to unload timber direct to the timber yard and other supplies to the appropriate warehouse or storage shed beside the track. The savings in time and man power thus rendered possible are obvious.

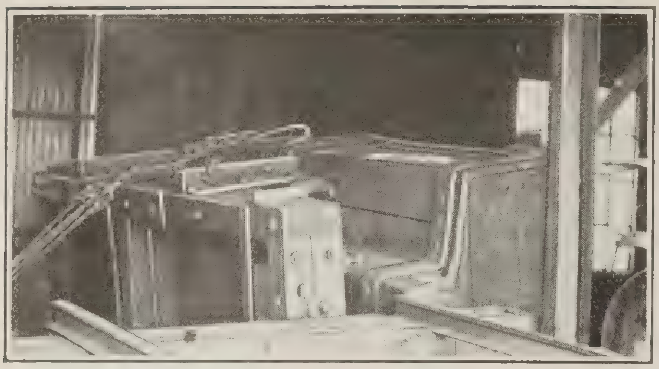
### Motor Truck Does Hauling

For performing the general hauling and trucking about this mine a motor truck has been substituted for horses and wagons. One truck of this kind, largely because of its greater speed of travel, has been able to supplant two teams. The services of one driver and, upon occasion, those of at least one helper have simultaneously been dispensed with.

Steam is generated to heat water for the bath house. Fuel for this purpose was formerly delivered to the steam plant in mine cars from which it was shoveled by hand to the floor space in front of the furnace doors. A rotary, or what might more correctly be termed a tip-over dump has now been installed to discharge these cars of fuel. The track on the platform of this dump turns sidewise on trunnions or a shaft below it so that

**Car Control Underneath the Tipple**

All of these tracks have been so regraded as to avoid all necessity for using pinch bars. Control of the movement of all cars under the tipple is centered in the hands of one man stationed in the narrow booth in the upper foreground at the top of the ladder.



**One Way of Reducing Fuel Cost**

This simple device that overturns by gravity but is righted by an electric motor saves shoveling fuel coal from the mine car to the boiler room floor in front of the furnace. It thus greatly simplifies and cheapens the problem of fuel supply.

the car is nearly overturned and completely discharged by gravity. It is righted by means of a small electric motor arranged to wind a cable onto a spool. This cable passes through a set of tackle blocks one of which is attached to the side of the car. This same motor is employed to pull the loaded cars up the grade leading into the fuel shed of the heating plant. The cost of this installation was $1,800 but the saving is expected to be $1,372 a year.

### HAS 37 MILES OF ENTRY DUSTED

Until about a year ago inert dust for treating the various roads and headings in this mine was purchased. A pulverizing plant has now been erected, however, at which roof rock is ground for rock dusting purposes. Approximately 37 miles of entry have already been dusted in this mine and several miles more yet remain to be similarly treated. All of these passages will be redusted every six months or as much oftener as may be necessary. The plant last year reduced dust costs $7,184 or nearly enough to pay the whole first cost of $7,500.

As originally constructed, the man and material shaft at this mine contained a car cage traveling in one compartment and a counterweight in another. Coal is hoisted at this shaft for docking and boiler fuel purposes only. Cars were pushed off the cage, dumped and recaged by hand. A pneumatic de- and re-cager has been installed in this tipple that does the work formerly performed by two to three men. This device works promptly and consumes a comparatively small quantity of air.

This machine is simple in construction and is easily operated. It consists of a cylinder made of steel pipe provided with a piston, piston rod, crosshead or ram sliding in guides, and the necessary valves, admission and exhaust pipes and the like. The front of the crosshead or ram is provided with both a buffer and a chain fitted with a hook. When a car comes up on the cage the ram is pushed forward and the chain hooked to it. Air admitted to the cylinder forces the piston back, retracting the ram and pulling the car off the cage and onto the dump. After the car has been discharged and righted the ram is thrust forward pushing the car onto the cage. The general appearance of the ram is plainly seen in one of the accompanying illustrations. The whole device is controlled by a 3-way cock, conveniently located.

### SAVES $2,744 A YEAR ON BITS

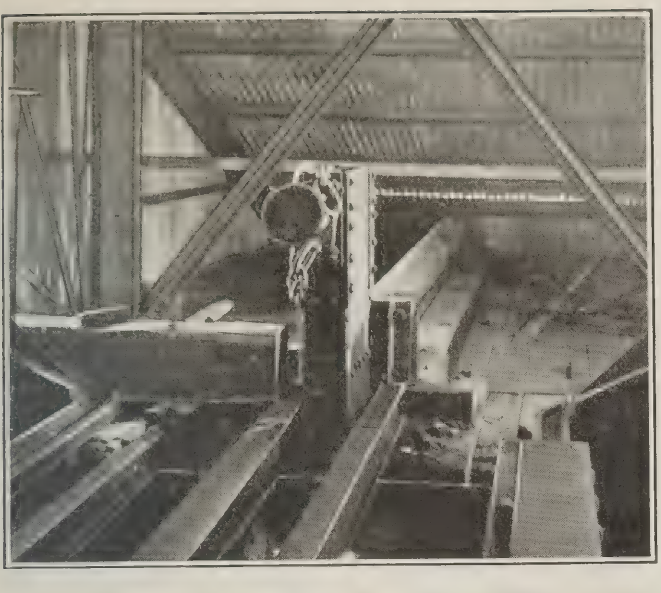
In coal of the consistency here mined it requires nearly one sharp cutter bit for each ton of daily production. Oil fired bit heating furnaces and bit sharpening machines have been installed in the shops at this mine which enable two men to sharpen about 6,000 bits per day. Each bit can be sharpened or resharpened from 15 to 20 times before it is worn out and must be discarded. But sharpening now costs annually $2,744 less, thanks to an investment of $1,100.

Several of the changes and improvements recently made at this mine have been intended primarily to attain safety. Their economic value is thus indirect and intangible although by no means negligible. First and foremost of these comes the practice of rock dusting. As has been stated a dust grinding plant has been built at this mine and many miles of underground passageways have already been treated to a coating of inert dust. This process will be continued until all headings have been similarly treated. These passages will be redusted twice each year or as much oftener as is necessary to maintain the inert content of the mine dust at the inexplosive point.

In addition to rock dusting the mine uses water sprays to reduce coal dust danger. These have been installed over the rotary dump at the foot of the main shaft and in the two runarounds which the empties

**Saved $7,000 Last Year**

This shows the dust grinding plant which last year reduced dust costs, $7,184, while under process of construction. It has long since been completed and placed in operation. Nearly 40 miles of heading in this mine have been treated with inert dust and several more miles remain to be similarly treated. Periodic analyses of the mine dust are made from time to time.



**Pneumatic Ram Does Three Men's Work**

This de- and re-caging device performs the work formerly done by two to three men and does it promptly. Its consumption of air is low and its upkeep practically negligible. It was built in the local shops.

traverse before they return to the active workings to be reloaded. The sprays lay the dust that may be present either in the coal or clinging to the cars themselves.

A partition wall has been built in the air shaft. This is of concrete and separates the intake air compartment from the cage and counterweight compartments. Originally this shaft contained a car cage and a counterbalance. The counterbalance has been replaced by a double-decked man cage onto the lower deck of which a weighted car may be run when coal is to be hoisted. When men are to be raised or lowered this car may be run off the cage and men accommodated on both decks. Double-decked landings have been provided at both the top and bottom of this shaft, and explosion doors also have been placed at the top.

Underground, the oil switches controlling the current to this mine have been inclosed in a fireproof structure. By this means fire originating from any cause within this switch station cannot be communicated to the outside and similarly fire from the outside cannot enter.

### BOTTOM CAN BE ISOLATED

Steel doors sliding on overhead tracks and moving back into narrow slits or kerfs cut into the ribs have been installed upon either side of the air shaft foot. By this means this bottom can be completely isolated in case of emergency.

The mine air and dust are analyzed regularly. Analyses of mine air are made once each week with a portable Burrel apparatus with an Orsat apparatus as a check. Samples of the dust along the headings, haulage roads and like passages are also taken and analyzed at regular intervals. In addition to a safety engineer two other safety men are employed who devote their entire time and effort to the cause of safety. It should be mentioned also that closed lights only (electric cap lamps) are used in this mine.

Some further changes are contemplated but have not yet been made. These, like those already enumerated, have as their objects either increased safety of operation or savings in the expense of coal production. Among them might be mentioned:

(a) The installation of car stops at the foot of the air shaft to facilitate the movement of cars at this point and render running of cars into the sump an impossibility.

(b) Rounding off the shoulder at the foot of the air shaft. As this shaft is at present constructed the heading at its foot leads off at an abrupt right angle. The air coming down the shaft is thus compelled to make an abrupt turn of 90 deg. at this point. This wastes power, and since the ventilation must be maintained continuously even small savings in power expenditure represent appreciable economies at the end of a year's time.

(c) Deepening the sump at the foot of the main hoist shaft and installation of an elevator and cross conveyor so that this sump may be cleaned mechanically. Naturally there is more or less spillage into any shaft sump. This, probably, is in greater volume where skip hoisting is practiced than where the cars are brought to the surface for discharge. At this mine with present arrangements the sump must be cleaned by hand. This expense, which is now appreciable, could be materially lessened by the installation of a mechanical cleaning device, the operation of which would entail only the cost of power and the wear and tear on the machinery.

Most machines require tuning up and adjustment after installation; most large mines must undergo a process that is exactly analagous. The changes made and to be made at Valier and here briefly enumerated partake of this nature. They have already reduced operating and total production costs. Their completion will unquestionably reduce these costs further—possibly even attaining the 50c.-a-ton reduction which is the goal.

**Air Shaft Has Double-Deck Landing**

This shaft contains two hoisting compartments. In one of these travels an ordinary car cage; in the other moves a counterweight cage, upon which a counterweight car can be run or removed at will. This cage is double decked and double landings are provided at both top and bottom of the shaft. Thus the counterweight cage even though far narrower will accommodate approximately as many men as the car cage.

# Don’t Be a John Hardy—*Prevent* Explosions

**By S. L. Morrow**
Birmingham, Ala.

THE MOST ESSENTIAL and the most important thing for a miner to do in the event of a mine explosion is to help prevent that explosion. Accidents of all kinds, including explosions, are constantly wandering around looking for a place to happen; and in ninety-nine cases out of a hundred they cannot happen without the help of some human being. Let every miner take this home to himself and think of it daily.

### WHY THIS WAS WRITTEN

DOWN in Alabama they are pushing safety. The Joseph A. Holmes Safety Association with 27 chapters in that state is backed by the Alabama Mining Institute, the U. S. Bureau of Mines, the state mines department, insurance companies and mining men of all degree. Monthly chapter meetings in some of the mining towns draw 800 or 900 people. This fall a series of papers has been prepared to be read as a part of the program at each chapter meeting. This story is one. It is printed here in the hope that it may be helpful to Holmes chapters everywhere.

Is there a coal mining man who wants to form a partnership with a mine explosion and by his help cause it to occur? Your answer, of course, is no; in big letters. All right then, it is up to each of you to be constantly on the lookout for any dangerous condition in and around your mine and when you find one either correct the condition yourself or report it promptly to the mine foreman or safety inspector.

Keep an eye on all new men who come into the mine and see that they do not jeopardize their own lives or yours. Prevent the explosion and the remainder of this paper will be worthless.

Stupidity and carelessness are first and second lieutenants in the army of accidents. They walk constantly by the side of every miner. Today they go to the face of the Fifteenth Left with John Hardy. John has had many years’ experience in the mines. He reaches his working place and through force of habit taps the roof in various places with his pick. One place sounds hollow and he starts back to the last cross-cut for a timber. Lieutenant Carelessness whispers in his ear: ‘Aw, what’s the use? That place won’t fall for a week.” John hesitates and turns back and greets his new buddy who has just come in.

An hour later the “drummy” place in the roof lets go, crushing a mine car, and the new buddy narrowly misses getting caught. The wreck cleaned up, the two finish loading out their coal and move into the aircourse to shoot down the coal for the next shift.

There is a little pool of water at the face next to the right-hand rib and rather than get his feet wet John points his auger too far to the right, boring his hole well back in the solid. After the hole is up, John looks at it and scratches his head a moment and starts to bore another hole, when Lieutenant Carelessness whispers: “Aw, let ’er go, she’s not much on the solid.”

John sends his buddy across to the heading to gather up the tools while he loads the holes. He places powder in all his holes properly fused. He hesitates at the right rib hole. Caution tells him to bore another, but Carelessness wins and he places his powder in the improperly drilled hole in preparation for shooting it.

John now goes to his clay box and finds it nearly empty. He picks up the box and starts back to the side track for more clay when Carelessness says: “Gee, that’s a long walk, why take it?” Lieutenant Stupidity now chips in with: “Go on and use coal dust. You used it twice last week and nothing happened. Besides you are using permissible powder and it is safe.”

John hesitates and is lost; he turns back to the face and tamps up his holes using what clay he has, finishing out with coal dust. The two lieutenants stand by and watch him complete the job and then, Lieutenant Stupidity says to Lieutenant Carelessness: We’ve done a good job. Let’s beat it to a safe place.”

John gathers up his tamping stick, tools and surplus fuse and puts them into his tool box. As he starts back to the face he notices quite a quantity of dust on the bottom and makes a mental note to tell the mine foreman to send the sprinkling crew in the next day.

John lights his shots and then walks rapidly back to the second cross-cut and sits down to wait till they go off. In a few seconds come the dull boom of three or four properly placed shots, a short interval and then a sharp crack like a cannon, a bright flare of flame and a gust of wind.

A few seconds later smoke and flame are seen belching out the mouth of the slope accompanied by a sharp, roaring, cracking sound. It is as though Hell itself has broken loose.

### Death Strikes Fierce Blow

A death-like lull follows for a moment. Then sharp cries of agony break the stillness. They come from two men blown off the tipple who lie on the ground broken and bleeding.

Men with horror stricken faces rush from the shops, the other plant buildings and the superintendent’s office. Soon the level heads bring order out of chaos. Doctors and ambulances are summoned. Rescue apparatus is brought out and rescue parties are organized.

In the camp mothers and daughters stop short at the sound of the explosion and with blanched faces exclaim: “My God, Number 2 Slope has gone up.”

At the schoolhouse, children crowd to the windows and gaze toward the mine in wide-eyed terror, each with a prayer in his heart—“God save my daddy.”

Now come back with me into the mine.

John Hardy’s place was in the Fifteenth Left off the main haulage. Three thousand feet outby the Fifteenth Left and about 600 ft. from the bottom of the slope the first right and left cross-entries turned at right angles to the main haulage, each on a separate air split. The right cross was only driven a few hundred feet.

The left cross was in about 4,800 ft. driven as a main entry with the First North turned to the right at 2,200 ft. and the Second North at 4,400 ft.

When the explosion occurred, Assistant Mine Foreman Billings was just coming out of the First North into the left cross. The force of the explosion blew out his carbide lamp and nearly blew him off his feet. He quickly recovered himself and relighted his lamp. In a few minutes panic stricken men began to pour out of the First North and a brattice crew and a track crew came rushing down the cross-entry from the direction of the Second North. All were making for the main haulage and the slope. It was with great difficulty that Billings got them to halt long enough to explain that it was certain death to try to get out and that their only hope was to go back up the First North and barricade themselves in. All were convinced, except two men who persisted in going out. Their bodies were found by the rescue party some 12 hr. later several hundred feet from the slope.

"Well, boys," said Billings, "We must get busy." He turned to the boss trackman: "Jack, will you take Henry and go back to the Second North and get all the men together and barricade yourselves in, while I go with the rest up the First North?" Both Jack and Henry agreed and started on their way.

### LEAVES MESSAGE FOR RESCUERS

Before starting Billings picked up a cap board and with the flame from his carbide lamp wrote: "Men in First and Second North, follow arrows." He laid the board in the middle of the track. "All right, boys,, I have just counted noses and find that there are 22 of us. Come on. Every man bring his dinner bucket and his water and pick up any thing you see that will help build a barricade. It's a good thing we are on short turn today or there would have been more of us in here."

Every 200 or 300 ft. Billings marked an arrow on the roof with his lamp.

The First North was in about 1,200 ft. with three room entries turned to the left. These all had ventilating doors. As they passed these entries Billings ordered each of the doors propped open to short circuit the air.

Arriving at the Third Left, Billings decided to build his barricade across the First North, just inby the Third Left. The barricade would have to be 12 ft. wide by 5 ft. high. It would be necessary to build a second wall across the last cross-cut in the First North.

Billings at once began issuing orders. He sent two men to the face of the Third Left to get a car and all the shovels they could find. He sent five men under the boss bratticeman to the last cross-cut in the First North with instructions to start building a barricade, consisting of two rock walls about 2 ft. apart with a well-tamped filling of dirt, cautioning them to make it air-tight.

### CONSTRUCTING THE BARRICADE

Billings opened a water valve in the sprinkling line and found that there was water, but at low pressure, meaning that the pipe was broken somewhere up the slope.

The two men from the Third Right returned soon with a car and several shovels and Billings sent four men with the car back to the Second Left sidetrack for a car of tamping clay which he had seen as he passed.

Thirteen men were left including himself. Eleven of these Billings put to collecting rock from the gob wall and piling it near where they would build the barricade. He then took one man with him to the face of the First North. He stopped at the last cross-cut and gave the crew some instructions. This cross-cut had an air-course track in it and the crew had brought out a car and a number of shovels from the face of the air-course.

Billings, with his one man, went on to the face and found a car loaded with bugdust; they found two shovels and a bucket of drinking water in the heading tool box. They loaded these on the car of dust and proceeded to push it back in the entry to the site of the main barricade. In the meantime the crew had collected a pile of rock for the walls.

The four men who had been sent for clay arrived soon and Billings ordered it unloaded just inby the barricade. He had the car of bugdust unloaded and then sent six men with the two cars up the entry with instructions to load them with dirt from the bottom.

**Fire Stop**

Had lumber been handy this type of fire-stop might have been erected by "Billings" and his men trapped by the explosion. As a matter of fact this particular one was built in the King mine at Princeton, Ind., and helped seal off a bad fire last summer. It contains an 18-in. wall of clay with ends hitched into the ribs and the top luted with clay to seal it tight.

He selected a place for the barricade where the entry had been driven "tight" in order to turn the Third Left. With the remainder of the crew he started two rock walls across the entry with about 2 ft. of space between them. When these walls were about a foot high, the space between them was filled with dirt and coal dust well tamped. This was repeated for each foot of wall until within a foot and a half of the roof. The outby wall was then built up to the roof, and the connection with the roof carefully plastered with mortar made of clay and water from the sprinkling line. All the dirt possible was then thrown up against the outby wall. The inby wall was then finished to within a few inches of the roof, and all the dirt possible packed in. A few minutes work and the inby wall was completed to the roof and well plastered with clay all along the roof and for a foot down.

Billings then examined the wall all over and decided to chink up the ends of each rib with clay. This done, he ordered all hands to the face to help the crew on the other wall. Some clay was left and this was loaded in a car and taken along. They found the wall nearly done. They were short of clay so they plastered the connections between the outer wall and the roof, and when the inner wall was completed, they rolled a sufficient number of jumpers and stuffed these tightly between the top of the wall and the roof.

### Completed in Less Than Two Hours

Billings carefully examined the wall and pronounced it as good as it could be made. He looked at his watch and remarked that it had been just an hour and three quarters since the explosion had occurred.

"Now," said Billings, "Let's all go back to the other barricade." On arriving, he asked: "How many dinner buckets in the crowd?" Checking revealed 14, with 2½ or 3 gal. of water but little food left over from lunch.

"Use this bucket I found in the heading to drink out of, and when it is empty fill it from your dinner buckets. Go easy on drinking so as to make the water last as long as possible," continued Billings.

"I want to compliment all you boys on the way you have kept your heads and worked for the last two hours.

"Now everybody scatter out about 40 or 50 ft. and sit down. Now put all your lights out. My light will be enough to see by and we will save both carbide and oxygen."

When these orders were carried out Billings started to walk up and down from one end of the crowd to the other, talking to them in order to keep up their morale as much as anything else.

"Boys," he said, "I have seen some of you at our Joseph A. Holmes Safety meetings and some of you I haven't. Some of you who do attend don't seem to pay any more attention than the law requires. I've got you all here now where you can't get away and I am going to tell you a few things which I think you ought to know.

"In the first place, this entry is about 350 ft. long from the barricade to the face. It is about 12 ft. wide and 5 ft. high. It, therefore, contains 21,000 cu.ft. of air. Add to this about 2,000 ft. in the six cross-cuts out to the stoppings, and we have about 23,000 cu.ft. or somewhere near 850 cu.ft. of air to live on until rescued.

"One cubic yard of normal air will sustain a man for an hour if he is at rest and breathing quietly. Lights consume oxygen and that is the reason I ordered lights out.

"Normal air contains 21 per cent oxygen, I learned by studying the subject carefully. A safety lamp or open torch will go out when the oxygen is reduced to 17 per cent. A carbide lamp just burns in air containing 13 per cent of oxygen and goes out when the percentage is less.

"Every breath we take we consume a certain quantity of oxygen and give off about an equal quantity of carbon-dioxide.

"We have about 850 cu.yd. of air in here and there are 22 of us, therefore, at a cubic yard per hour per man, we have enough air to last us—let's see, now—about 39 hr.

"A man moving about consumes twice as much air as one perfectly quiet. I am moving slowly so as to keep the air mixed. I had you scatter out to keep the carbon-dioxide which we exhale from our lungs from collecting in one place.

### Learned Program at Safety Meetings

"I am going to tell you the most important things to do if you find yourself entrapped in a mine by an explosion or mine fire. I got this all down by heart because I took an interest in safety at the association meetings:

"Keep your head. Weigh your chances of getting out through some opening away from the direction of the explosion.

"If you are sure you are cut off from any escapeway, quickly head for the deep workings with the idea of building a barricade before the poisonous gases reach you.

"Leave marks behind to assist the rescue party in locating you.

"Take everything possible with you that will help build a barricade, such as tools, boards, brattice cloth, etc. Don't forget your dinner bucket, water and carbide.

"Barricades such as we have built today are easier to make air-tight than if built of boards or brattice cloth.

"As you go back, short circuit the air in every possible way to prevent the gases from following too rapidly.

"If there is compressed air in the mine try to locate your barricade so that you will have an air valve in your space behind it. If there is no valve, break the pipe. The compressed air will add to the available supply back of the barricade.

"Always include as much space back of the barricade as possible regardless of the number of men in the party.

### Always Conserve Air

"After the barricade is built, sit down and remain quiet, to conserve all air possible. Lights out.

"Do not barricade yourself in a place known to give off methane, as the gas may be ignited and cause the death of the entire party.

"If you'll think back over the things we have just done, you'll see we've followed out these directions pretty closely."

Billings sat down midway the crowd and continued:

"I have been reading one of the Bureau of Mines circulars about the number of men who have been saved by building barricades after explosions and fires.

**How's the Gas?**

When men are on rescue work, such as was done by the team hunting for "Billings" and his trapped crew, they make haste slowly, testing carefully as they go. Here, they are looking for the telltale blue cap that indicates the presence of inflammable gas. The second man from the right in his right hand carries a small wooden cage in which is a canary. These birds are particularly susceptible to the influence of poisonous carbon monoxide. When the little bird falls from its perch it is time for men to watch their step carefully, for they are in the same deadly atmosphere.

The record shows that in 16 disasters 431 men built 25 barricades and 324 lives were saved out of the 431. Men have been rescued from behind barricades after having been imprisoned as long as seven days. In the Dolomite No. 3 explosion in our own district 50 men were rescued from behind a barricade after about 5 hr. So you see that it pays to keep your head and barricade yourself in.

"I feel confident that we are safe and that it is a question of only a few hours until we will be reached."

Slowly the hours dragged along. Some of the men tried to sleep. Others tried to carry on a subdued conversation. A few broke down and cried, murmuring brokenly: "I wish to God I could send word to my wife and babies."

Finally, at 4:30 a.m. 13 hr. after the explosion, there came a sound of knocking on the outside of the barricade, and a muffled voice saying: "Hello, anybody back of the wall?" As one man the crew sprang up, shouting: "Yes, yes." All lamps were quickly lighted and two or three men grabbed picks and started to attack the barricade. "Hold on," shouted Billings, "Let's find out if the air is all right outside." He shouted through the wall: "Is it safe to come out?" "Yes," came the reply, "The air is all right."

Some of the men attacked the wall with picks, others clawing feverishly with their bare hands helped break a hole through. In a few minutes they were all through the wall and greeting five helmet men with helmets off, their test canary as chipper as a lark in its cage.

Questions and answers were hurled back and forth. One man dropped to his knees and thanked God for his life. The rescuers explained that they had put the fan back in service 5 hr. after the explosion and that they had replaced blownout stoppings with brattice cloth, and after reaching the entry they were in they had closed each door as they came to it and waited awhile until the air cleared ahead before proceeding.

Then started the three-quarter mile walk to the outside. Reaction had set in. Some of the men could scarcely walk, and had to be assisted by the stronger ones.

They saw many evidences of the explosion in the cross-entry before they reached the slope, but the slope itself was a wreck. Cross-sets were blown out, there were falls from roof, a trip of cars half way up the slope when the explosion happened was wrecked and cars were hurled in every direction. Timbers were charred and covered with coke, and above all, that dank, sour odor of afterdamp.

They reached the surface just as the sun was creeping over the trees. Women and children with sunken eyes and drawn faces were huddled around little fires, waiting and praying that husbands and fathers would come out alive. When the men appeared at the mouth of the slope there was a rush from the women, each with a prayer that her man was among them. Those who didn't find their mates turned away silently weeping.

Doctors examined the men. Some were sent to the hospital in ambulances, others were sent to their homes.

Rescuers found 24 men in charge of the boss trackman in the pump room in the Second North, behind brattice cloth barriers. The pump was driven by compressed air, supplied by a pipe coming from the surface through a borehole. The men started the pump and were kept alive by the exhaust. All the men working in the room entries off the main haulage were killed by the force of the explosion.

John Hardy's body, burned to a crisp, was brought to the surface 24 hr. after the explosion.

It is true John Hardy paid the price, but what of the dozens of widows and scores of orphans who paid and will continue to pay through no fault of theirs?

My story is ended and the moral is, *don't let the explosion happen.*

# Many Refinements Render New Tipple Extremely Flexible[*]

### Rotary Dump, Balanced Shakers, Degradation Screens, Spiral Pickers and Swinging Booms Form an Unusual but Efficient Combination

THE TIPPLE recently constructed by the Spring Canyon Coal Co., Spring Canyon, Utah, differs from the ordinary structure of its kind, in numerous refinements for grading and otherwise preparing the mine product. Coal from the mines is delivered to it over a surface tramroad. Two tracks capable of holding about 40 cars, are provided for the loads and one track which will hold about the same number of mine wagons for the empties. The loads are fed to the dump by gravity from both tracks and are controlled by two squeeze blocks. These are of the type first designed by W. J. Elwood, but unlike the original blocks which were of wood operated by hand levers, they are built of steel and are actuated by compressed air at 100-lb. pressure. They are capable of holding securely 24 three-ton cars on a 2.5 per cent grade.

Loads are discharged by a full-revolving dump having a capacity of 5 cars per minute. After being dumped the empty cars go to the usual kick-back and gravitate onto the empty track. The hopper under the dump has a capacity of approximately 15 tons, and from it the coal is delivered to the shakers by a reciprocating feeder.

## SHAKER TYPE SCREENS USED

The screens are of the usual shaker type. They are 8 ft. wide and 72 ft. long built in two balanced sections. The pitch is 12 deg. 30 min., and the travel 6 in., the eccentric shaft making 100 r.p.m. The upper section of this shaker is shorter but heavier than the lower section. It contains the slack and nut screens, consisting of plates with 1⅝ and 3-in. circular perforations, respectively. The lower section contains plates with 4½, 6 and 8-in. circular openings extending from top to bottom of the screen in the order named. The shaker is so arranged that nearly all changes necessary for producing the different sizes of coal desired may be made merely by shifting levers. The most complicated of these alterations has been made in 2½ min.; most of the other changes can be made in less than one minute and some without even stopping the machine.

## FINE MATERIAL REMOVED

One of the refinements embodied in this machine is what is called a degradation screen. Just before the coal leaves the shaker it goes over a plate with 1⅜-in. circular perforations. This removes the fine material made while the coal is passing over the other screen openings. This fine coal goes into hoppers and thence onto the degradation conveyor which delivers it to the slack chute.

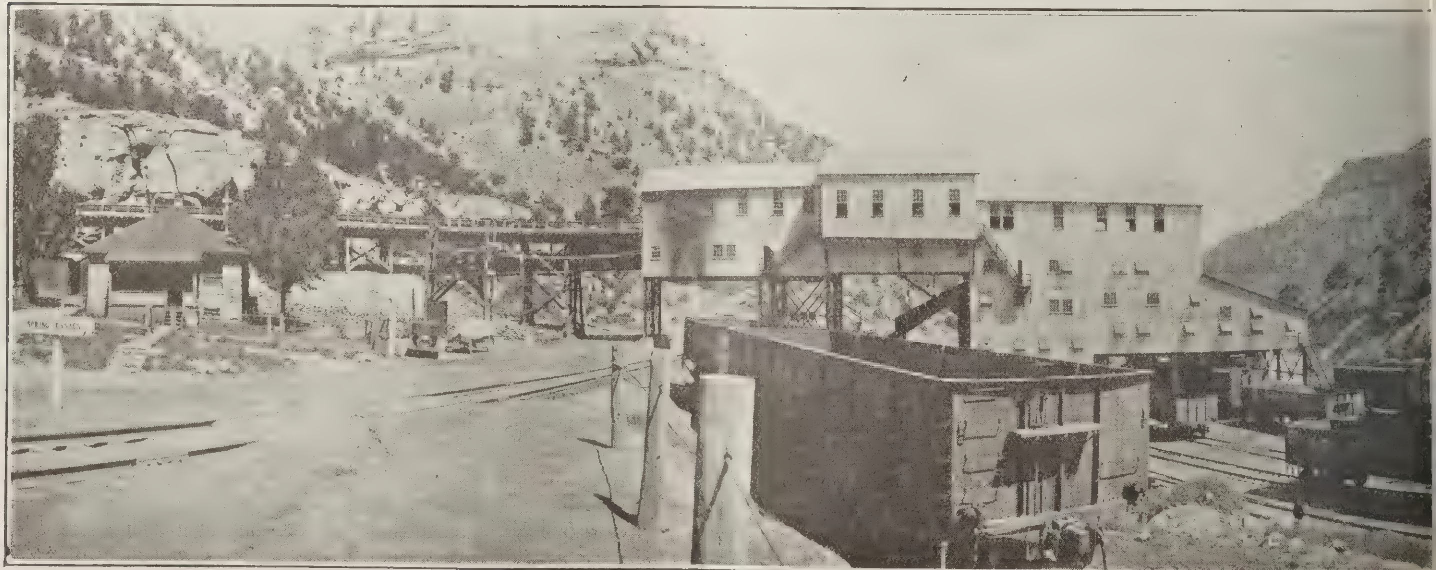
The different sizes of coal, excepting the slack, are delivered by the shaker onto three picking tables. These are horizontal for 24 ft. where they are hinged to form loading booms. Each picking table thus forms one unit of continuous conveyor.

Centrally located under the picking tables and below the floor, is the refuse conveyor extending at right angles to the tables. The impurities picked from the coal are dropped through openings in the floor and onto this conveyor, which discharges them into a bin of 100 tons capacity. From this bin the refuse is loaded into railroad cars through a gate.

Slack may be loaded directly into railroad cars through a chute from the hopper under the shaker, or it may be conveyed to the rescreener. Gates are provided by which all or any part of this material may be sent over either of these routes.

## CONSTRUCTION OF RESCREENER

The rescreener is a shaker 4 ft. wide and 16 ft. long provided with ¾-in. circular openings. The framework is of wood and the pitch is 5 deg. It is driven by eccentrics having a 5¾-in. throw and running at 143 r.p.m. This shaker is hung on 1x10-in. ash boards rigidly fixed at both the support and shaker ends, so that the spring of the boards permits the necessary



One of Utah's Newest and Most Complete Coal Preparation screen movement. The eccentric rods are also of ash, rigidly attached to the shaker. Movement of the eccentrics is likewise permitted by their resiliency.

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[*] Abstract of a paper entitled "A Brief Description of the New Steel Tipple Recently Built by the Spring Canyon Coal Co., Spring Canyon, Utah," prepared by George A. Murphy, general manager of the Company, for the Rocky Mountain Coal Mining Institute meeting at Price, Utah, but not formally presented before that body.

Dust going through this shaker drops into a bin of 80 tons capacity from which it is loaded into railroad cars through a gate. A car may thus be loaded from this bin in two minutes.

### DISTRIBUTING SHAKER IN FOUR SECTIONS

Screened slack, or pea coal, from this rescreener is delivered to a distributing shaker driven from the same eccentric shaft that operates the screen, through eccentrics of the same throw, the two being balanced. The distributing shaker is divided into four sections, each occupying one quarter of its width. Each of these sections discharges its coal through a chute to a spiral. As the coal runs down on these spirals, the impurities or heavier materials move close to the center or axis, while the coal is thrown off the outer edge. The impurities are discharged into a conveyor and taken to the refuse bin, while the coal goes onto a boom and is conveyed to railroad cars.

Mention has been made of the refuse conveyor which runs under the picking tables. At a point near where this conveyor discharges into the refuse bin, pickers are stationed to remove lumps of coal that contain but little refuse matter. These are dropped into a crusher that discharges into an elevator-conveyor which delivers the coal to the main shaker in the form of slack and nut. The impurities are then taken out of the slack by the spirals, and are hand-picked from the nut on the picking table.

### HOW LOADING TRACKS ARE INSTALLED

Six loading tracks are installed as follows: No. 1 for loading lump coal into box cars; No. 2 for loading lump into open cars; No. 3 for loading egg and stove into either open or box cars; No. 4 for loading nut coal into open or box cars; No. 5 for loading mine run, straight slack, dust and pea coal into open cars, and No. 6 for loading dust and refuse into open cars. Still another track passes under the tipple, and is used for unloading sand and other material.

The combined picking table and loading boom on No. 2 track is fixed except that the boom end may be raised and lowered. It is so arranged that all or any part of the coal going over it, after passing the pickers, may be diverted to the box car loader boom serving No. 1 track. The Nos. 3 and 4 booms are of a modified swinging type. They are located on one side of the tracks, and when loading box cars are in a position parallel to them. When loading open-top cars, however, they are swung to positions such that they discharge directly over the center of the tracks.

All booms, five in number, are raised and lowered by electric hoists with pushbutton controls. Booms Nos. 3 and 4 are swung sidewise by means of trolleys on which the hoists are mounted. When loading box cars the Nos. 3 and 4 booms discharge into transverse conveyors that deliver the coal to the loaders. These conveyors are mounted on shafts near the ground. They are pushed into the car and removed from it by electric power.

Two extension-conveyor type box car loaders have been installed on tracks Nos. 1 and 3. The transverse conveyor and the foundation have already been built for the installation of a similar loader on track No. 4, but the machine itself has not yet been put in place.

### FIVE PUSHBUTTONS CONTROL MOTORS

All tipple motors are fitted with remote pushbutton controls, these latter being located in a central station in the weigh-room. Here five buttons control all of the motors. These buttons are so located that when operated successively from left to right, the several units of the tipple are started in the proper order.

There are a dozen or more pushbuttons located at various points about the tipple and used in stopping the machinery when necessary for shifting cars, changing the screens or any other reason. These buttons are so connected that when pushed they automatically stop all of the machinery that it is necessary to shut down in order to accomplish the work in hand and sound a gong in the central station. When this gong is rung twice from any of the pushbuttons, the weighman starts the several units in the proper order.

The capacity of the tipple is, 3,500 tons in 8 hr. and its cost, together with approaches, box car loaders, rearrangement of railroad tracks, etc., was approximately $260,000.

**Plants Is This One at the Big Mine of the Spring Canyon Coal Co.**

# Prompt, Efficient Action Saves Men and Mine from Fire

### Flames Are Attacked First with Hand Extinguishers and Men Are Withdrawn—Modern Equipment Is Great Aid—No Casualties

With the possible exception of an explosion the underground fire is probably the most spectacular of all mine disasters. Many fires, however, are "nipped in the bud" and extinguished before they can gain formidable headway. Such treatment necessitates prompt, careful and efficient action on the part of the mining organization, if serious property damage or even loss of life is to be averted. Such action saved the workings and the employees of the Kingston Coal Co., of Kingston, Pa., recently when a fire developed over night in one of its operations.

This fire broke out sometime during the night of Friday, May 15, 1925, in the Red Ash Bed, of the old Slope-Mountain Tunnel district which is tributary to No. 2 colliery. At this point a gang had been timbering on Friday afternoon. At the close of work in accordance with the usual custom the regular roundsman made his daily examination, finding nothing wrong. In fact, this roundsman was the foreman in charge of this particular job of timbering, so that in making his examination he inspected his own work.

On the following morning, Saturday, May 16, at about 7 o'clock, this roundsman found the timber set up the day before to be on fire. A nearby cog or crib was also burning. Notification was promptly given to the superintendent and foremen who immediately attacked the fire, the location of which is shown at *M* on the accompanying drawing, with hand extinguishers.

By this time, however, the volume of the smoke and gases had so increased that some of the men were overcome and had to be carried to a place of safety at *D* in the Eleven Foot Bed near the head of the rock slope to which point the foul gases had backed. This district is connected with No. 3 shaft and the fumes from the fire worked their way through other openings such as *L* and *N* and the caved area back of the fire thus gaining access to the No. 3 workings. Here they affected a number of men before they were able to make their escape. This necessitated rescue work at No. 3 shaft as well as in the immediate vicinity of the fire.

As soon as the nature of the fire was determined word was sent to No. 3 for the withdrawal of all men from the mine. It required some time to conduct a canvass of the total number of hands there employed and make sure that everybody was safe. In all about 40 men were more or less affected by noxious gases (chiefly carbon monoxide, CO) and smoke. Medical aid was given wherever necessary and no casualties were sustained.

Plans and preparations were immediately made to combat the fire. All men were withdrawn from the workings of No. 4 colliery which connected with the No. 2 workings and the production of coal was stopped in all mines of the company. The door at *N* was opened and the ventilating current from the Nos. 4 and 3 fans short circuited to pull direct through the caved district and away from the fire in the gangway. The chief object sought was to prevent the fire from spreading up the pitch into the outcrop.

With this change in the ventilation current the air moved down the rock slope from *D* to *R*. Next, by the use of brattice from *R* to *F*, it was possible to reach the door at *G*, which was kept closed. Good air was coming out the gangway at *H*, from the east side in the Red Ash Bed. A stopping (*H*) was accordingly erected at this point which cut off this air current.

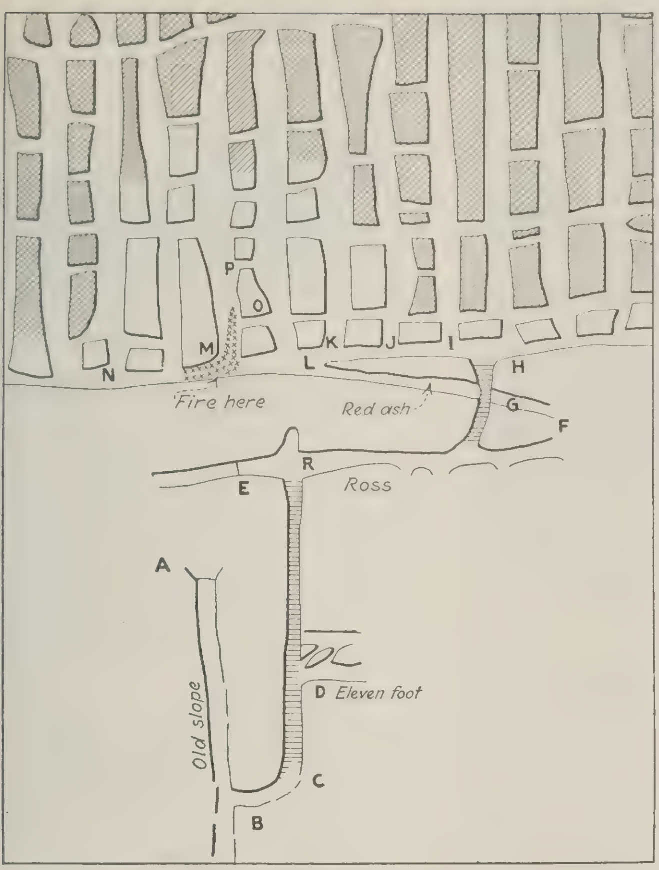
The fire was fought between the points *G*, *O* and *N* by men wearing oxygen-tank helmets. A relay station where the helmets were equipped with new tanks was established at *R*. On Saturday night an emergency blowing fan was installed at the mouth of the old slope, and the openings at *B*, *C* and *D* in this slope, the Bennett and the Eleven Foot beds were closed with stoppings. The brattices and other air current-control equipment between the points *R*, *F* and *G* were also tightened up so that the fire-fighting crew was ready for almost any emergency. Fortunately, however, no emergency demanding the use of this fan arose, and it was never necessary to place it in operation.

This emergency fan installed at the slope collar was direct connected to a steam turbine. It had a capacity of about 45,000 cu.ft. per minute. When the fire started, this machine was employed in the No. 2 power house supplying draft to the boilers. It was removed from its foundation at about 6:30 p.m., Saturday, May

**Hoist House Which Served as Cafeteria and Slope Mouth with Emergency Fan**

This building originally housed a steam hoist. When this was supplanted with the electric machine now used it left the rear of the building vacant. This made an excellent place for the cafeteria where food, fruit and coffee were served free to those fighting the fire which broke out almost directly below this building.

This fan was set up hurriedly to be ready to supply air in case of an emergency. When the fire was discovered it was supplying draft to the power plant boilers. It was removed from its foundation, transported about a mile, reset on mud sills and connected to a source of steam supply 2,000 ft. away.



**Plan of Workings Where Fire Occurred**

Only a portion of the Old Slope is here shown. This connects by somewhat circuitous passages driven through the rock with the measures in which the fire occurred. In fact the fire was almost directly under the hoist house serving the slope.

16, was transported over a distance of approximately one mile, was set up on a foundation of mud sills at the slope mouth, connected to a steam supply by about 2,000 ft. of 2-in. pipe and was ready for operation at 4:30 a.m., May 17. This is remarkably quick work considering the difficulties involved and the care that must necessarily be exercised in the setting and alignment of every high-speed machine.

Tests were constantly made on the composition of the air coming down the chutes at *H*, *I*, *J* and *K*. This gave a good check on the condition of the air and gases at the fire, the main object being to blanket the blaze as much as possible at the rear or at the points *N* and *O*. The plan of campaign was confined to a steady and continuous effort to prevent the fire from getting up into the caved and robbed area between its point of origin and the outcrop.

Water for fighting the fire was obtained through hose of the Edwardsville fire department, connected to the Spring Brook water main in the Borough of Courtdale. Several lines of this hose were laid over the surface and carried down the slope *A*. This means of obtaining water for direct application to the fire was augmented by a 2-in. pipe line. By 10 a.m., Monday, the fire was extinguished and on Tuesday work was resumed at all the collieries of the company.

Throughout the entire fight against this fire the company officials enjoyed the fullest co-operation from the state mining department, the U. S. Bureau of Mines, the mine rescue crews of neighboring coal operations and people of the vicinity. Thus, rescue crews came from the Glen Alden Coal Co., and also from the Lehigh & Wilkes Barre Coal Co. These men held themselves in reserve ready for any emergency that might arise, while their chiefs took council with those of the Kingston company who were actively engaged in fighting the fire.

Two and a half hours after the fire started, three women living in Courtdale nearby, arrived at the mouth of the slope, each carrying a big pot of hot coffee. This supply lasted until a cafeteria was put in operation in the rear of the hoist house. Sandwiches were furnished in large number by a local lunch room until they could be prepared by the operating force of the coal company. Fruits such as apples, oranges and bananas were also dispensed to the workers as well as pickles, olives and the like.

From start to finish this fire was fought in a scientific manner by the aid of modern equipment. Thus, gas testing machines, CO detectors, helmets and gas masks were freely employed. The loss of coal sustained was practically nil, the fire being confined almost entirely to the timbers and the gob. Much credit is due to the skill and hard work of the superintendents, foremen and assistant foremen as well as to the rank and file of the men, who exhibited marked loyalty and tenacity in fighting the fire.

### No Confusion or Disorder

One noticeable detail of this work was the perfect order which prevailed by common consent, also the excellent co-operation that existed between all parties. Throughout the entire progress of the fight there was no confusion, no loud shouting or obvious excitement. As upon many another similar occasion, however, some of the men became overzealous. Thus, at one period all the mine foremen were underground at the same time. This, however, was shortly after the fire was discovered and the foremen went in to warn and bring out the underground employees.

Of the 600 men employed in the slope and the No. 3 mine about 40 were overcome by gas and smoke and were brought out on stretchers. The remainder came out unaided by helmet men but in many cases assisted more or less by their fellows. In all about 12 helmets and 16 gas masks were employed. After the fire had been brought partially under control the masks were used far more than the helmets, and it became a task to provide canisters for them. These were procured from practically every source available in northeastern Pennsylvania. Some were purchased from nearby coal companies, some were borrowed and 50 were shipped in by express from Pittsburgh.

It looked for a time on Saturday morning as if this fire might prove decidedly serious from every standpoint. Fortunately, no human fatalities or even permanent injuries are to be recorded. Two mules, however, which at the time the fire started were in the higher workings of No. 3 mine succumbed to the action of the poisonous carbon monoxide. Several hundred rats did likewise. The mules appeared to have died peacefully in their stalls. The rats all left their holes and when found were lying flat on their bellies with all four legs extended as if they had simply given way under them.

The origin of this fire could not be determined definitely. The timber gang that worked on Friday used carbide lamps, and it is believed that the flame from one of them may have come in contact momentarily with some of the old timber being repaired. If this started the fire it doubtless grew from a smouldering spark in the evening to its formidable dimensions when discovered on the following morning.

# News Of the Industry

## Anthracite Miners and Operators Sit Back Awaiting Developments; Lewis Clings to Strike Weapon

Anthracite operators and miners settled back again this week and assumed the rôle of spectators in the hard-coal controversy after emphatically denying that peace proposals had been made by either side.

Without exception, operators interviewed during the week declared themselves in sympathy with the expressed policy of the negotiating committee to continue along the present lines in demanding that a new wage agreement carry with it provision for the avoidance of future suspensions of hard-coal mining.

An address delivered by John L. Lewis, international president of the United Mine Workers, in Shamokin Oct. 29 at a John Mitchell Day celebration brought little if any reaction throughout the region. The miners' spokesman declared in the course of his talk that the miners would not now or at any future time voluntarily relinquish the strike weapon. Philip Murray and Thomas Kennedy, vice-president and secretary-treasurer respectively of the international organization, also spoke at the meeting.

### Lewis Charges Gouging

Declaring that many anthracite companies also owned soft-coal mines, John L. Lewis charged that the hard-coal operators were trying to persuade people to use soft coal as a substitute for hard coal in order to gouge the public with both hands. The charge was made in a letter Oct. 28 to Major General Charles W. Berry, chairman of the New York State Coal Commission.

Samuel D. Warriner, chairman of the Anthracite Operators' Conference and the president of the Lehigh Coal & Navigation Co., refused at the company's New York office to reply to the Lewis statement. Only a few anthracite producers owned soft coal mines, Mr. Warriner said. Their total production from these holdings he estimated at not more than 1,000,000 tons a year. Inasmuch as little, if any, of the soft coal produced by anthracite operators came into the New York market he said, Mr. Lewis's statement was too "ridiculous" to warrant a denial.

The week brought with it several requests from washery operators to the Scranton district headquarters of the union for permission to operate their plants in order to supply coal to schools and churches in the region. Permission was granted to the Traders' Coal Co. to furnish a specified amount of anthracite for use in the Plains (Pa.) schools. The coal is to be washed from a refuse dump.

The other applicants for permission to operate are Reap & Murphy, North Scranton; Plymouth washery, owned by William Cook, of New York; Peckville washery, owned by Martin O'Toole, Scranton, and No. 14 washery, owned by Judge George W. Maxey and Attorney Frank Benjamin. These companies seek authority to supply coal to schools and churches in Plymouth, Plains, Hanover and Wilkes-Barre, all anthracite region cities. The applications will be acted upon soon by the executive board of District 1, United Mine Workers.

The Scranton union headquarters announced that circular letters are being mailed to local unions throughout the district forbidding the distribution of union funds in the local treasuries. It was reported that locals were dividing their funds among the needy members. This, according to President Rinaldo Cappellini, is a direct violation of the constitution of the union.

Reports from the lower field are to the effect that dredgers of river coal in the Schuylkill River are reaping a financial harvest as a result of the strike and demand created by local scarcity fears. In several places the coal is being loaded directly from scraper lines out of the river bed into trucks for delivery to consumers, without being screened.

Activities of mediators or peace bodies in the anthracite field, if any, are veiled with secrecy. Since the Rev. J. J. Curran's reported proposal to the miners, no others have been heard.

### Father Curran Calls on Governor

Father Curran spent several hours with Governor Pinchot at Harrisburg on Oct. 26 discussing the strike situation. Neither the Governor nor the clergyman, however, would later comment upon their meeting. Father Curran participated in the settlement of the 1902 strike and two years ago called upon the Governor just prior to his calling the conference of operators and miners to Harrisburg.

Statements attributed to a former New York fuel distributor telling of an alleged plan by Secretary Hoover for composing the anthracite strike have been denied vigorously by Mr. Hoover. He declared that he has made no such suggestion to anyone.

Directors of the Hazleton Chamber of Commerce last week discussed a suggested plan to bring about a resumption of negotiations between the striking anthracite miners and the operators, with chambers of commerce from other parts of the hard coal field participating. The matter was referred to a committee.

The efforts of the Hazleton Chamber of Commerce is in line with that of Scranton, which has been making efforts to have the wage negotiations resumed and the mine workers in the meantime return to work.

Independent operators at Pottsville have suggested to the striking miners that the coal strike may be considerably shortened if delegates to the convention which will pass upon the terms of settlement are elected in advance. It is estimated that the strike can be shortened nearly ten days by such action. After the committee of union leaders negotiates terms with the operators, it is necessary to refer the terms to a tridistrict convention. The election of delegates to such convention, heretofore, has been the cause of delay.

Miners stated they will comply with the suggestion if it does not conflict with any of their regulations. But they pointed out that nearly all locals will want to pass upon the merits of any suggestion to settle the strike and the sentiment can be expressed by instructions to delegates.

Operators said they merely made the suggestion to cut out some red tape when a final agreement shall be reached.

### *Industries Have Coal Stocks For Fifty Days*

Industrial activity climbed to a new high level in September, when 7.1 per cent more anthracite and bituminous coal was consumed in industry than in the month of August, according to the monthly report of the National Association of Purchasing Agents. The September consumption is estimated at 38,746,000 tons.

With bituminous production at capacity and with a tremendous slump in anthracite production from 8,845,000 tons during August to 39,000 tons in September, the estimated stocks of coal in the hands of industrial consumers on Oct. 1 was 65,012,000 tons. This is enough to last 50 days, based on the September rate of consumption.

# Scott Turner Named As New Director of Bureau of Mines

Scott Turner, of Lansing, Mich., has been selected as the new director of the Bureau of Mines. As Congress is not in session he has been given a recess appointment by President Coolidge. He is expected to assume his new duties Dec. 1. The White House statement announcing the appointment reads, in part, as follows:

"The appointment of Mr. Turner was made on the unanimous recommendation of the advisory committee from the mining industry recently appointed by Secretary Hoover and composed of representatives of the American Institute of Mining & Metallurgical Engineers, the American Mining Congress, the National Coal Association, United Mine Workers, and the American Petroleum Institute. In reporting to Secretary Hoover, J. V. W. Reynders, chairman of the advisory committee, wrote as follows: 'It is believed that the appointment of Mr. Turner will conserve the ability of the various divisional heads in the tasks to which they have been devoting themselves and promote the forward-looking plans which you have in mind for the extension of the Bureau's service in the economic and industrial development of the country.'"

### Called a Happy Selection

The committee's selection is generally regarded as a happy one. It is believed that Mr. Turner will bring to the Bureau a relationship with industry that could not have been secured otherwise. At the same time it has been made plain that the committee did not go outside of the Bureau for a director because of any lack of capable men on the staff. The President in announcing Mr. Turner's appointment did an unusual thing in bringing out this very point.

Mr. Turner when in Washington two weeks ago to confer with Secretary Hoover expected to be able to arrange his business affairs so as to take up his new duties Dec. 1. His confirmation by the Senate practically is assured, as the Michigan Senators are known to be well pleased with the appointment.

Mr. Turner was born in Lansing, July 31, 1880. He was graduated from the University of Michigan in 1902 and from the Michigan College of Mines in 1904. A sketch of his work as a mining engineer follows: Assistant engineer, Development Company of America, Tombstone, Ariz., 1904-05; field work, South Dakota, Montana, Oregon, California, Nevada, May-July, 1905; millman in Colorado, 1905; superintendent, San Pablo Gold Mining Co. and Pontiac-Panama Co., Province of Veraguas, Panama, 1905-06; examining engineer in Nevada for Detroit syndicate; miner Standard Mine of Federal Mining & Smelting Co., Mace, Idaho; Hecla Mining Co., Gem, Idaho, April-July, 1906; millman, Hercules Mining Company, Burke, Idaho, 1906-07; assistant editor with T. A. Rickard, *Mining and Scientific Press*, San Francisco, January-October, 1907; Superintendent Granny Gold Mining Co., Manhattan, Nev., October-December, 1907; engineer for F. W. Bradley, of San Francisco; smelter representative, Tacoma, Wash., for Bunker Hill & Sullivan Mining & Concentrating Co., and Alaska Treadwell, February-June, 1908; in Dawson, Fairbanks, and Nome, Alaska, with T. A. Rickard, June-September, 1908; engineer, Wild Goose Mining & Trading Co., Nome, Alaska, September-October, 1908; at Tacoma Smelter for F. W. Bradley, of San Francisco, 1908-09; chief assistant to mining geologist, U. S. Smelting, Refining & Mining Co., of Boston, 1909-10; mining geologist, Mammoth Copper Mining Co., Kennett, Calif., April-December, 1910; field work, tin mines, Cornwall, England, 1911; field work, Spitzbergen, J. M. Longyear, of Boston, June-August, 1911; general manager Arctic Coal Co., of Boston, in Norway and Spitzbergen; general manager for Ayer & Longyear, of Boston, in Europe; agent Arctic Steamship Co., 1911-16.

Scott Turner

He opened and operated for five years coal mines at 79 deg. 13 min. North Latitude on the Island of Spitzbergen (825 miles north of the Arctic Circle, on No Man's Land).

Mr. Turner started in the spring of 1916 for South America on mine-examination work for London banking interests; he spent the next two years in Peru, Chile and Bolivia, but when the United States entered the war he returned and signed on with the Navy for four years, receiving a commission as Lieutenant, senior grade. In January, 1919, he was placed on the inactive list, and at once went to Canada as chief field engineer for the Mining Corporation of Canada, Ltd., and its various subsidiaries. A few months later he was promoted to the position of consulting engineer to the corporation, which position he still holds.

## Seeks Soft Coal Bids

Bids have been invited on 28,400 tons of bituminous coal for the period from Dec. 1, 1925, to June 30, 1926, by the chief engineer of the Government Fuel Yards at Washington, D. C., up to 10 a.m. Nov. 16, 1925. Bids will be considered on either run of mine, nut and slack, or slack coal.

## National Coal Association Starts Research Program

How to combat the use of oil, how to help the consumer get greatest value out of his coal, how to "keep cool with coal" in the summer are the three studies which the members of the National Coal Association are going to study at once due to the activity of the association's research committee. Others will come along in due time after these have been studied.

As the result of a conference Oct. 14 at Washington, D. C., Walter Barnum, chairman of the committee, on Oct. 28 appointed sub-committees to study the three subjects which seem most to need the consideration of the research committee.

The subjects chosen are:

(1) Oil competition — methods of approach and valuable comparative data; M. B. Lanier (chairman), president, Munro-Warrior Coal & Coke Co., Birmingham, Ala.; J. B. Pauley, president, J. K. Dering Coal Co., Chicago, Ill.; E. L. Thrower, general manager, Warner Collieries Co., Cleveland, Ohio.

(2) Possibilities of servicing heating and power plants, including domestic heating plants, with report on (a) physical conditions as they exist and direct results that should be obtained; (b) indirect results likely as regards local and national good will; J. G. Bradley (chairman), president Elk River Coal & Lumber Co., Dundon, W. Va.; M. J. H. Jones, vice-president, Bertha Consumers Co., Pittsburgh, Pa.

(3) Increased summer coal consumption with special reference to artificial refrigeration and to systems for providing lower summer temperatures for office buildings, theaters, homes, etc.; Warren Blauvelt (chairman), president, Vigo Mining Co., Terre Haute, Ind.; Thomas De Venney, superintendent, Portsmouth Byproduct Coke Co., Edgarton, W. Va.

### Consider Seven Subjects

The committee had nineteen problems before it and felt that it was impossible to investigate all thoroughly and therefore favored concentrating on seven, among which are the three mentioned and the four following: (1) Preparation—washing and screening; (2) pulverized coal—methods, costs and adaptability; (3) distillation, (a) high and low temperature, (b) complete gasification of coal and possibilities of steady load factor resulting from condensation of this gas into motor fuel during low summer gas consumption, (c) commercial possibilities through concentration of plants near mines, high pressure transmission of gas, and oven load factor; (4) acid mine-water stream pollution.

The research committee recommended that it assist in the collection and creation of a library which will be a library of practical progress and actual new or growing accomplishment in any way connected with the production and use of coal rather than a library of text books of future and scientific value. It also favors the appointment of a trained specialized librarian who shall act as general secretary to the research committee.

## 142 Die in September In Coal-Mine Accidents; Rate Continues to Fall

Accidents at coal mines in the United States in September, 1925, resulted in the loss of 142 lives, according to information furnished by state mine inspectors to the U. S. Bureau of Mines. All of the fatalities were at bituminous mines, as work at the anthracite mines was suspended during September. No major disasters were reported during the month.

As the September output of bituminous coal was 46,817,000 tons the 142 fatalities represented a death rate of 3.03 per million tons compared with 3.32 in the previous month and 3.76 in September, 1924. No fresh-mined anthracite was reported, but a small amount was obtained from dredges.

During the first nine months of the present year 1,612 men have been killed by accidents at the coal mines throughout the United States, a death rate per million tons of 3.76 as compared with 4.48 for the same period last year. Reports for bituminous mines alone showed a nine-months fatality rate of 3.35 as against 4.28 for the corresponding months last year, a reduction of 22 per cent during the present year. The reduction in the death rate was due to the smaller loss of life in major explosions during 1925 as compared with 1924. For the anthracite mining industry the accident records for the present year from January to September showed a fatality rate of 6.19 per million tons as compared with 5.49 for the same months last year.

An analysis of the causes of the 1,612 fatalities in 1925 shows a reduction of 50 per cent in the per million tons death rate from explosions of gas or coal dust, including small and large explosions, the rate being 0.61 for 1925 and 1.23 for the nine-month period in 1924. Slight reductions in the fatality rate from electricity, haulage and falls of roof and coal also are shown. The rate for explosives shows an insignificant increase.

A comparison of the rates for the first nine months of the two years is shown by the following figures:

| | Jan.-Sept. 1924 | Jan.-Sept. 1925 |
|---|---|---|
| All causes | 4.476 | 3.761 |
| Falls of roof and coal | 1.841 | 1.794 |
| Haulage | .632 | .609 |
| Gas or dust explosions | 1.227 | .611 |
| Explosives | .174 | .184 |
| Electricity | .150 | .121 |

### West Virginia Mines Please Note

The Great South Wales Railway Co. announces that although less than two years have elapsed since the campaign for high-capacity wagons was begun by its general manager it is now possible to see the 20-ton wagons in considerable numbers working regularly on the routes serving the South Wales ports. — *The Engineer, London.*

## Output in North of France Higher in 1924

Coal output in the French departments of the North and Pas-de-Calais totaled 25,650,000 metric tons in 1924, as against 20,897,000 in 1923. The output for 1913 was 27,389,000 metric tons. The figures have been just reported by Consul Davis, Calais, to the Department of Commerce. Of the 1924 output 2,220 metric tons went to coke ovens and 18,952 to buyers of coal. Forty per cent of the miners are importees. Payroll personnel stood at 180,000, against 133,000 in 1913. Under the law of June 24, 1919, the workers are on an eight-hour basis.

The daily output per miner dropped from 1,333 gross kilos in 1893 to 1,058 in 1913, to 752 in 1922, and was 813 kilos in 1924. The wage cost in francs per net metric ton was 5.35 in 1893, 7.58 in 1913, 36.26 in 1922, and 41.10 in 1924, or in purchase power almost double the value of the 1893 wage and substantially higher than in 1913.

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Mining and metallurgy are losing popularity as fields for technical careers whereas more men are entering the fields of civil and electrical engineering, according to the trend of enrollments just made public by Lehigh University, at Bethlehem, Pa. For years Lehigh University has been a mecca for students of mining and metallurgy, a condition that has been attributed by some educators to the proximity of the school to the anthracite field.

## Coal-Mine Fatalities During September, 1925, by Causes and States

(Compiled by Bureau of Mines and Published by *Coal Age*)

| | Underground | | | | | | | | | | | | Shaft | | | | | Surface | | | | | | | Total by States | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| State | Falls of roof (coal, rock, etc.). | Falls of face or pillar coal. | Mine cars and locomotives. | Gas or dust explosions. | Explosives. | Suffocation from mine gases. | Electricity. | Animals. | Mining machines. | Mine fires (burned, suffocated, etc.). | Other causes. | Total. | Falling down shafts or slopes. | Objects falling down shafts or slopes. | Cage, skip or bucket. | Other causes. | Total. | Mine cars and mine locomotives. | Electricity. | Machinery. | Boiler explosions or bursting steam pipes | Railway cars and locomotives. | Other causes. | Total. | 1925 | 1924 |
| Alabama | 3 | | 1 | 2 | | | 2 | | | | | 8 | | | | | | | | | | | 1 | 1 | 9 | 6 |
| Alaska | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Arkansas | 1 | | | 1 | | | | | | | | 2 | | | | | | | | | | | | | 2 | 0 |
| Colorado | 2 | 1 | 1 | | | | 2 | | | | | 6 | | | | | | | | | | | | | 6 | 3 |
| Illinois | 8 | | 1 | 1 | | | | | | | 1 | 11 | 1 | | 1 | | 2 | | | | | | | | 13 | 9 |
| Indiana | 2 | | | | | | | | | | | 2 | | | | | | | | | | | | | 2 | 2 |
| Iowa | 2 | | | | | | | | | | | 2 | | | | | | | | | | | | | 2 | 1 |
| Kansas | 2 | | | | | | | | | | | 2 | | | | | | | | | | | | | 2 | 0 |
| Kentucky | 3 | | 5 | 2 | | | | | | | | 10 | | | | | | | | | | | | | 10 | 13 |
| Maryland | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 1 |
| Michigan | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Missouri | 3 | | | | | | | | | | | 3 | | | | | | | | | | | | | 3 | 2 |
| Montana | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 2 |
| New Mexico | 1 | | 1 | | | | | | | | | 2 | | | | | | | | | | | | | 2 | 2 |
| North Dakota | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Ohio | 3 | | 1 | | 1 | | | | | | | 5 | 1 | | | | 1 | | | | | | | | 6 | 12 |
| Oklahoma | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 1 |
| Pennsylvania (bituminous) | 14 | 2 | 3 | | | | | | 1 | | 1 | 21 | | | 1 | | 1 | 1 | | | | | | 1 | 23 | 20 |
| South Dakota | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Tennessee | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 3 |
| Texas | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| Utah | 3 | | | | | | | | | | | 3 | | | | | | | | | | | | | 3 | 8 |
| Virginia | 6 | | | | | | | | | | | 6 | | | | | | | | | | | | | 6 | 4 |
| Washington | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 1 | 0 |
| West Virginia | 23 | 1 | 8 | | 4 | | 4 | | 2 | | | 42 | | | | 1 | 1 | 2 | 1 | | | | 2 | 5 | 48 | 28 |
| Wyoming | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | 1 | 42 |
| Total (bituminous) | 80 | 4 | 21 | 6 | 5 | | 8 | | 3 | | 2 | 129 | 2 | | 2 | 1 | 5 | 3 | 1 | | | | 4 | 8 | 142 | 159 |
| Pennsylvania (anthracite) | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 30 |
| Total, September, 1925 | 80 | 4 | 21 | 6 | 5 | | 8 | | 3 | | 2 | 129 | 2 | | 2 | 1 | 5 | 3 | 1 | | | | 4 | 8 | 142 | |
| Total, September, 1924 | 63 | 9 | 35 | 45 | 5 | 1 | 11 | 1 | 2 | | 8 | 182 | 1 | | 1 | 1 | 3 | 1 | 2 | | | | 1 | 4 | | 189 |

# Pitfalls in Path of Coke Industry Show Need of Byproduct Association

**By Paul Wooton**

Washington Correspondent of *Coal Age*

With coke for domestic use heading for pitfalls similar to those encountered in 1922 and 1923 it has been suggested that this is a propitious time to organize the proposed byproduct association. Some 3,000,000 tons of coke was sold during the winter of 1922 and 1923, but few permanent customers for this fuel were made. Prices reached unreasonable levels and large quantities of metallurgical coke were put into the channels of retail distribution.

It has since been shown conclusively that gouging was not practiced by the coke producers. Their average sales realization during that period were no greater than those of the year before. They simply were not able to control prices once their coke got into the channels of trade. In the same way no effective steps were taken to keep shipments of foundry coke, unsuited for domestic use, out of the hands of the householder.

The same thing is in a fair way to happen again. The prices of beehive coke are rising sharply. Considerable quantities already are being sold for domestic use. The fear is expressed that this material is no better suited for household purposes than was that sold three years ago. The byproduct industry naturally is anxious to meet this situation. Such problems have been met with success in Great Britain by the association there. It is thought the experience of the British indicates what can be done here, particularly if the manufacturers of equipment could be included in the membership of the byproduct association.

### Co-operation Is Necessary

The present situation offers even a better opportunity to the coke producers than that of 1922, but it is apparent that little can be accomplished toward establishing standards of quality and their maintenance without co-operation among the byproduct producers.

Experiments conducted by the Bureau of Mines have demonstrated that coke properly prepared and mixed with fine anthracite provides a fuel with all the advantages of the larger sizes of hard coal and at a price frequently 20 per cent cheaper. Some of the coke being wished onto the domestic consumer is not suitable for household use. Ordinary metallurgical coke, even when broken down to egg, cannot be burned successfully in household equipment. Coking has been carried so far that the product is hard to ignite. When once well kindled, however, the fire is difficult to control. This resulted in such annoyance to householders three years ago that dealers in many instances were required to take back the coke they had placed in cellars.

It is believed to be entirely possible to produce a good domestic fuel in a beehive oven by the reduction of coking time. The problem of crushing beehive coke into sizes suitable for domestic use is a comparatively simple one. It also is suggested that if the beehive producers were to establish an association they could study better the needs of the situation and take the necessary steps to meet them.

While it is improbable that beehive operators would be interested sufficiently to undertake the creation of a permanent market for a domestic coke, such a course is regarded as essential to the future of the byproduct industry.

Just at this time, it is pointed out, an association of the byproduct manufacturers would find plenty to do. It could undertake an advertising campaign setting forth the advantages of coke as a household fuel. It could send out demonstrators to show consumers how to burn coke to best advantage in furnaces not designed for its use. It could issue some form of certificate of quality. While the association would have no direct control over beehive shipments, by keeping behind the local fuel committees it could be influenced in keeping unsuitable coke off the domestic market.

It always has been argued that a byproduct association is not necessary because the business at each plant is local, but had there been an association in 1922 the coke industry might not have missed the great opportunity offered then. To have an organization that would be able to prevent runaway prices during this emergency and keep up the quality of the product, would justify its existence for a long time to come, many think. Once formed and with the services of a capable secretary, it soon would be apparent that there are various constructive activities which such an association can follow in normal times. The headquarters of the British association at Leeds has proved to be one of the most valuable of the industrial clearing houses in the United Kingdom.

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## *Put Out the Fire Before It Starts*

Joseph J. Walsh, Secretary of Mines, of Pennsylvania, has sent a letter to bituminous mine inspectors warning them of the approach of the winter season, "when the bituminous mines, by reason of the low atmospheric temperature, become extremely dry if not frequently moistened by watering. This gives rise to a dangerous condition. As the cold air enters the mine it slowly increases in temperature and consequently in volume, thus increasing its moisture-holding capacity. Thousands of gallons of water are each day carried in the air current from a single mine. This condition makes it necessary to use every precaution to prevent dust explosions. You are therefore instructed to be diligent in your efforts to have all the mines in your district properly and thoroughly watered or rock dusted as a preventive of coal dust explosions. Water or rock dust should be used freely in all dry mines throughout the winter. When applied as required by law, the coal dust is rendered inert to explosibility, and the propagation of flame cannot occur."

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## Troops Withdraw from Oklahoma Coal Field

With the preparations by union officials to carry on their picketing activities with one man and three women to each squad, as allowed in the injunction issued by federal Judge R. L. Williams at Okmulgee, state troops, which have been on guard in the Henryetta district for the last several months, were reported as being withdrawn. The withdrawing of the guards came as a surprise, in that it was officially announced in Oklahoma City that only four officers and no enlisted men had been on active strike duty in the fields around Henryetta for the past several weeks.

Union miners at a mass meeting in Okmulgee last week decided to accept a loan of $200,000 which had been offered by unions outside of the state, it was reported. The fight has not been lost yet, according to a union statement.

Predictions made by coal operators that the injunction would result in many idle miners returning to work seems to be correct, as larger working forces are reported at mines Nos. 7, 10 and 12 in this area, over near Hartshorne.

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## Jones & Laughlin to Have 422 Coke Ovens

The Jones & Laughlin Steel Corporation, Pittsburgh, Pa., has placed a contract for the construction of another battery of sixty coke ovens at its byproduct plant in Hazelwood, Pa. The value of the contract is close to $1,000,000. The ovens will be installed by the Wilputte Coke Oven Corporation. The new addition will bring the total number of ovens at the Hazelwood byproduct plant to 300.

The corporation, in addition, now has under construction at its Aliquippa works 122 Becker type ovens, and with the completion of the Hazelwood addition it will have a total of 422 ovens with an estimated capacity of 1,957,000 net tons of coke per year.

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## To Discuss Standardization

E. A. Holbrook, chairman of the Mining Standardization Correlating Committee of the American Engineering Standards Committee, has tentatively called a meeting of the former, to be held in New York City Nov. 11. For several months routine business of the committee has been handled by correspondence, but the point has been reached where a thorough discussion by the full committee is necessary to a decision on some important subjects which will be announced later.

## Two Big Union Mines in Northern West Virginia Strike Zone Close Down

One of the most serious blows that was dealt the United Mine Workers of America in its effort to retain the organization in northern West Virginia occurred over the week-end, when mines Nos. 1 and 2 of the Simpson Creek Colleries Co., at Galloway, Taylor County, 12 miles west of Grafton, among the largest mines in the Fairmont field and the biggest plants to work with organized labor, were closed down indefinitely, throwing 500 union miners out of work with the approach of winter, according to press reports. The company is officered by persons being affiliated in an official way with the Y. & O. Coal Co. of Cleveland, where the concern has its headquarters.

Incendiaries are believed to have burned down a tipple at No. 6 mine of the Gilbert-Davis Coal Co. on Scott's Run, at Randall, near Morgantown, in the early morning of Oct. 28, causing a loss of $5,000. Either grease or oil was used to saturate the structure before the match was applied, it is believed. The mine, it is said, was operated on a co-operative basis, but union miners' officials say that the company is signed up as a union company. A new tipple will be erected.

Non-union coal production is on the increase in the region. More non-union coal was produced Oct. 28—1,792 cars—than on any day since the strike started, April 1. A new non-union coal loading record was attained on the Monongah division of the B. & O. on the same day when 961 cars were produced. In the first half of the week the non-union mines of the region produced 5,156 cars of coal compared to 4,790 cars in the corresponding period of the previous week. On the average there were 208 non-union and 17 union mines at work in the region in the first half of the week.

By the use of the distress warrant the Consolidation Coal Co. was recently awarded possession of 23 houses by Justice of the Peace W. H. Billingsley in Fairmont. The houses are located in Ida May, Carolina, Baxter and other mining towns. The company did not resort to the usual means of eviction, but took the landlord's proceedings to have tenants quit the premises. It is reported that the union will appeal the cases. Observers say that usually it requires less time to obtain the houses under a distress warrant than under the other type of procedure.

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The U. S. Bureau of Mines is planning investigations into causes of accidents by falls of roof and coal, in co-operation with the mining department of West Virginia. R. M. Lambie, chief of the Department of Mines of West Virginia and the Bureau of Mines will detail investigators who will conduct tests in West Virginia mines with a view of decreasing accidents of this character. According to officials of the Bureau, strength of roof and timbering is not the only factor involved, but details of mining methods and administration enter into the situation.

## Western Shippers Oppose Reconsignment Boost

E. M. Platt and H. J. Trossen, speaking for a committee of coal shippers, opposed an increase in reconsignment charges from $2.25 to $2.70 on coal and coke to points in Western Trunk Line territory, at a public hearing held Oct. 27 in the Western Trunk Lines committee rooms in the Union Station, Chicago. The carriers took the protest under advisement. Mr. Pratt is chairman of the traffic committee of the American Wholesale Coal Association and Mr. Trossen represented the Old Ben Coal Corporation, Chicago. The other members of the committee were: Roscoe B. Starek, president of the Chicago Wholesale Coal Shippers' Association; G. H. Merryweather, Waubun Coal Co., Chicago; Abe Mitchell, Mitchell & Dillon Coal Co., Chicago; and James Anderson, of C. M. Moderwell & Co., Chicago.

## Repeal of Taxes Urged

Allan H. Willett, for the National Coal Association, on Oct. 27 urged before the House Ways and Means Committee the repeal of the capital stock tax, the stamp tax on stock certificates, and also the retroactive features of the Revenue Act of 1924 dealing with reorganization of companies.

## *Oil-Electric Locomotive Makes Debut*

What is said to be the first oil-electric locomotive purchased in this country went into service Oct. 24 in the switching yards of the Central of New Jersey R.R. near New York City following tests which revealed that the cost of operation was about a fifth of that for the ordinary steam locomotive and that in performance the new engine was revolutionary. It weighs 60 tons. The Long Island R.R. has contracted for a 100-ton locomotive of the same type, to be put into service soon, according to George Doubleday, president of the Ingersoll-Rand Co.

Mr. Doubleday said that the sale of the two new locomotives marked the advent of a new era in railway operation, for not only is the cost of operation greatly reduced through the use of crude oil as fuel, but great speed is possible without sacrifice of load. The locomotives are being produced by Ingersoll-Rand, in conjunction with the American Locomotive Co. and the General Electric Co. A similar locomotive has been produced by the Baldwin Locomotive Works and the Westinghouse Electric & Mfg. Co.

Mr. Doubleday announced that four locomotives of the new type were in course of construction and four more are to be built. Five trunk line railroads have requested the company to submit propositions regarding the locomotives, and inquiries have come from other carriers.

## Bethlehem Mines Will Join 1917 Wage Group In Pittsburgh Region

The Pittsburgh district movement to reopen mines on the 1917 wage basis grows slowly but steadily. The Bethlehem Mines Corporation is planning to open its mines at Marianna, near Bentleyville, on the low rate. It is understood that the company has already asked for property protection from the sheriff of Washington County and has erected a strong 36-ft. fence around its properties. The mines in that section, known as the Pigeon Creek Valley, has been closed for some time. The section is a union stronghold.

Union officials declare that all previous attempts to operate below the union wage in this section have met with failure. They recall that three years ago when an attempt was made to operate a mine at Cokeburg Junction with non-union workers the situation became so serious that it was necessary to have a unit of the Pennsylvania National Guard encamped nearby.

According to an unofficial report in local coal circles, the Lilley Coal & Coke Co. is working 12 men in its recently opened Lilley mine in the Monongahela Valley under the 1917 scale.

The Pittsburgh Coal Co. announces that it has more men working under the 1917 scale in the Pittsburgh district than ever before. The 198 men working at the Midland mine, near Houston, also is the highest since the pit opened three weeks ago. There as a total of 674 men on the rolls of the company in that district. In two weeks the company placed as many men at work at Midland as it required six weeks to enroll in the Youghiogheny Valley mines. Banning No. 1 has 205 men and Banning No. 2 mine, 271.

Production of coal in the Pittsburgh district for the week ended Oct. 25, as reported by the railroads, amounted to 345,552 tons, from 83 mines, compared with 341,483 tons from 82 mines in the preceding week.

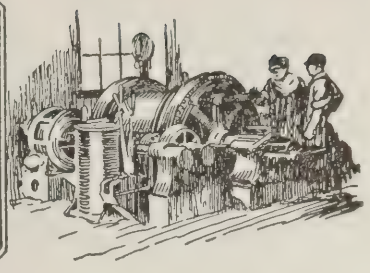
## Belgian Miners May Strike

Belgian coal mine operators having refused demands for a 5-per cent increase in wages last week, the miners threatened to strike this week. The producers contended that it was already impossible for the industry to meet foreign competition. Meanwhile, the government, in hope of stimulating the market, proposes to purchase 50,000 tons of Belgian coal monthly for the railroads. This coal heretofore has been furnished from the German reparation shipments at an actual loss to the government.

## Union Officials Quit

Frank Ledvinka, for six year president of Sub-district No. 5 of District No. 6, United Mine Workers, has resigned. His resignation became effective Nov. 1. His is one of the half dozen resignations of officials in that district and probably is the result of the ineffectiveness of the miners' officials' efforts to unionize the section.

# Practical Pointers For Electrical And Mechanical Men



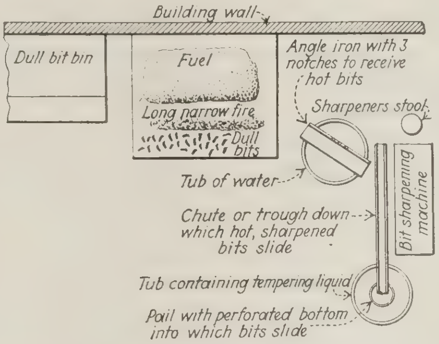
## "Factory Methods" in Mine Shop Make Bit Sharpening More Scientific

With the extended use of the mining machine or undercutter has come the necessity of quickly and accurately sharpening the bits. In this operation the coal mine shop can, in large measure, emulate the example and imitate the methods followed in any factory where a long series of duplicate or at least similar operations are to be performed.

At the No. 8 mine shop of the Old Ben Coal Corporation at West Frankfort, Ill., the sharpening of undercutter bits has been reduced almost to a science. In other words, this routine work has been so planned that there is extremely little lost motion, the bits moving through the sharpening operation in practically a continuous stream, only two men being required for this work.

In this shop the bits for thirty-five undercutters are regularly sharpened. These are passed one at a time through a Sullivan bit sharpener which not only properly shapes the bit but rolls it to a point or an edge. Three shapes of bits are used in the mines of this company—the pick point, the chisel point and the fishtail. The pick point is used for hard, the chisel for medium and the fishtail for easy cutting.

Formerly, machine bits were sharpened by hand on the anvil. Later the power hammer came into use and lastly the bit sharpening machine. In the shop in question, two men now sharpen as many bits as formerly required six blacksmiths—four on the day and two on the night shift. Furthermore, the sharpener rolls each bit to shape without loss of metal, whereas the old trip-hammer method cut some steel away at each sharpening with the result that bits now last approximately twice as long as formerly. There is, therefore, a saving in labor, a saving in steel, the bits last longer, and since they are more nearly uniform in shape the stresses imposed on the undercutter are likewise more nearly uniform, repairs are less and the power consumption is smaller.


Building wall
Dull bit bin
Fuel
Long narrow fire
Dull bits
Angle iron with 3 notches to receive hot bits
Sharpeners stool
Tub of water
Chute or trough down which hot, sharpened bits slide
Bit sharpening machine
Tub containing tempering liquid
Pail with perforated bottom into which bits slide

**Arrangement of Bit Sharpening Equipment**

The heater faces the furnace and holds his tongs in his right hand, placing the heated bits in the notches of the angle iron between the furnace and the bit sharpener. From here they are picked up as required, put through the machine and dropped into the chute or trough down which they slide into the tempering liquid.

In the sharpening process the bits, or rather their points, are first heated. This is done in a furnace about 4 ft. square with the tuyere pipe extending from end to end about a foot from the front edge. This leaves a front and a rear hearth. On the front hearth are piled the bits to be sharpened while the rear hearth serves as a storage for fuel, which, in this case, is small sized coke. The fire is thus about 6 in. wide and 3½ ft. long. Into this fire the bits are placed point down and as fast as one is removed another is added so as to keep a supply always ready for the machine.

One man does the heating and one the sharpening. As the bits are taken from the fire each is laid in a rectangular notch in one leg of an angle iron that passes across the top of a tub of water at the right of the sharpener. They thus lie in the most convenient position possible for him to grasp with his short, curved-nose tongs. The sharpener quickly places a hot bit in the jaws of the machine, gages it as nearly as possible and starts the ram carrying the shaping roller. As a rule one stroke of the ram is sufficient to sharpen the bit although sometimes two or even three strokes are required.

After the bit has been sharpened in this way it is removed from the machine and dropped into a trough down which it slides into a bucket with a perforated bottom. This bucket is immersed almost to its rim in a half barrel of "tempering fluid" sunk into the floor of the shop. This tempering fluid is merely water to which a strongly alkaline laundry soap has been added. About 1½ bars of this soap are used per day. This liquid is replenished from time to time as it boils away under the action of the hot bits. The arrangement of furnace, sharpener and the like is shown in the accompanying plan.

In many respects this process of bit sharpening reminds one of that of heating rivets in construction work. The bits move in a fairly steady stream from the hearth, through the fire, through the sharpener and into the compound at the rate of from 12 to 14 per minute. As a rule the heater and sharpener change off. That is, one will shovel a pail full of bits from the dull-bin, pile them on the hearth, heat and pass them to the man who operates the sharpener. When these have been run through the machine the men change places. At each change the bits in the tempering pail are drained and dumped into a barrel containing sharp bits. This process goes on until all the bits dulled during the preceding day or night have been sharpened.

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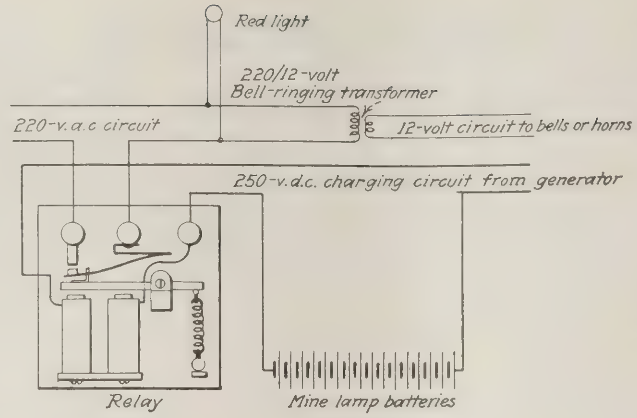
## Signals Tell When Charging Current Fails

When the direct current used to charge the batteries of electric cap lamps fails at the Union Pacific Coal Co.'s mines, a signal quickly carries this information to the lampman or watchman. By means of a relay, alternating current is supplied to red lights located at the power house, the lamp house and even at the lampman's home. In some in-

**Relay Operates Signals**

The battery-charging current normally holds the relay contacts open. If the direct-current circuit is broken, alternating current is supplied to the signal lamp and a bell or horn.



stances these signal lamps are supplemented by a buzzer or horn.

As long as direct current is flowing through the relay its magnet coils are energized but as soon as the direct-current circuit is broken the relay closes its contacts upon a circuit which supplies alternating current to the red light signals and also to a bell-ringing transformer which furnishes low voltage to noise-making alarms.

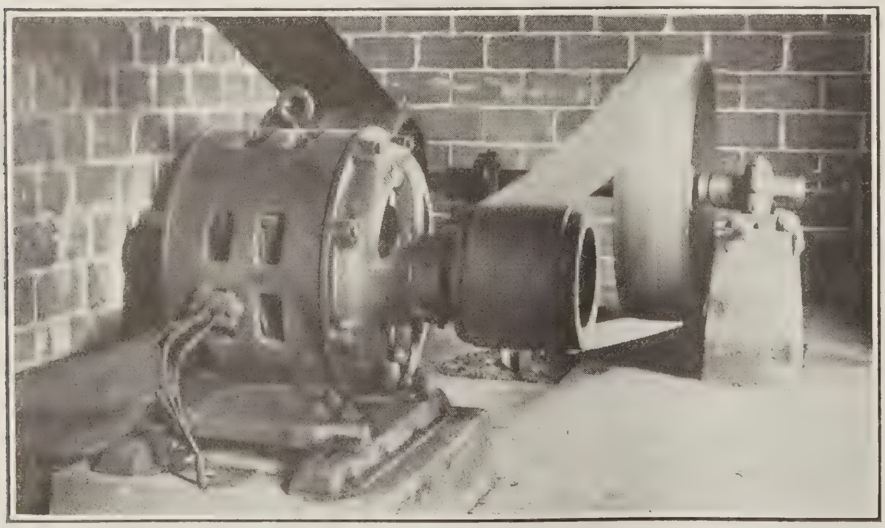
Thus a complete charge of the miners' lamps is assured when morning comes and there is no delay or complaint regarding the number of hours that the cap lamps will remain lighted when in the mines.

## Long Take-Ups Are Used on Fan Countershaft

In certain instances countershaft belt drives have proved unsatisfactory for mine fan service. In many cases no way was provided for increasing the belt center distance in order to compensate for stretch of the main belt. A spliced belt had to be used and there was the frequent expense of cutting and shortening, yet the belt was seldom at the correct tension.

A countershaft drive which has proven highly satisfactory is that of the Pike County Coal Corporation, at Petersburg, Ind. Here a 14x6-ft. mine fan is driven at 59 r.p.m. by a 690-r.p.m. motor. This large reduction is obtained with a 16-ft. belt center between the fan and countershaft. The feature which makes this installation successful is the use of long-movement take-ups on the bearing pedestals supporting the countershaft.

This adjustment, combined with that provided by the motor base, gives the installation a flexibility which makes it possible to use endless belts. The fan pulley is 96 in. in diameter and its mating pulley, on the countershaft, 26 in. The other countershaft pulley, 44 in. in diameter, is driven from a 14-in. motor pulley. The belt-center distance between the motor and countershaft is 9 ft. This makes a compact installation which, as compared to a single-reduction belt drive, has but one objection: three extra bearings must be lubricated and maintained.

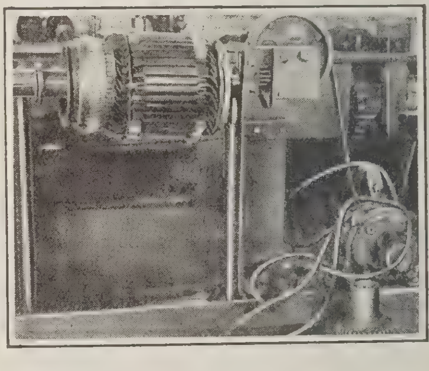


**Fan Drive of the Pike County Coal Corporation**

This compact countershaft drive is satisfactory because long-movement take-ups are used on the three bearings supporting the countershaft. The use of these take-ups makes it practical to employ endless belts. The motor operates at 690 r.p.m. and the fan at 59 r.p.m. The large speed reduction is obtained with but 16 ft. between the centers of the fan and countershaft.

## Armature May Be Wound and Banded on Same Stand

In electrical repair shops at coal mines many kinds and types of armature stands for use in rewinding these parts have been devised. The accompanying illustration, however, shows a device of this kind by means of which an armature can not only be rewound but rebanded as well. This particular machine was designed and built by the electrical repairmen in the shop of the Valier mine at Valier, Ill.

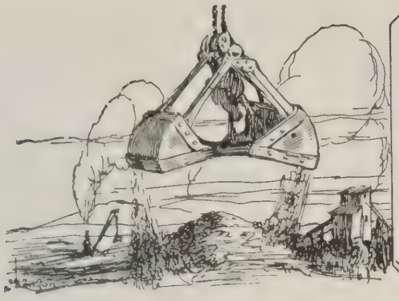


**Almost Ready for Banding**

When rewinding of this armature is completed the little motor near the floor may be started, the tightener pulley forced down and the armature banded without removal from the stand.

It consists primarily of an armature stand not unlike those of the ordinary variety except that both standards are mounted on a common base which is extended to take a small motor. This is belted to a nest of back gears which can be connected to the armature shaft if desired. The armature may thus be power-revolved whenever such a movement is wanted. The belt from the motor ordinarily hangs loose but may be tightened by means of an idler pulley.

By means of this device, after an armature has been rewound in the ordinary manner it may be banded without removing it from the stand. This arrangement thus saves the time necessary to remove the armature from the winding stand, transfer it to a lathe and set it up ready to receive the banding wire. Furthermore, this machine relieves the lathe from the banding operation and permits it to perform the work for which it was primarily intended.



# Production And the Market

## Bituminous Coal Market Gains Strength As Demand for Prepared Sizes Increases

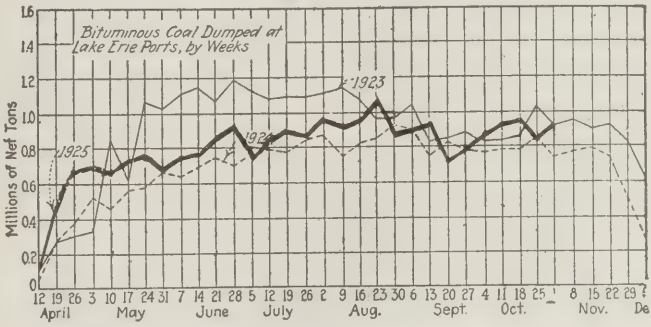
Increased strength characterizes the soft-coal market as the demand for screened coals gains momentum, domestic consumers continuing to turn to such substitutes for anthracite with the end of the strike nowhere in sight. Mine-run is beginning to pick up some in sympathy but is still comparatively quiet. Steam-coal business is showing more signs of life with most of the railroads taking full quotas on contracts and industrial consumption on the upgrade. Coal is moving through the Cincinnati gateway in record-breaking volume for this season, 15,314 cars having passed through last week, 3,124 destined for the lakes. Congestion in the latter traffic has caused a car shortage on the Louisville & Nashville R.R.

The comeback of West Virginia smokeless is a notable feature of the market, demand being so strong that there has been a scarcity in some centers, and prices, of course, show a steadily upward tendency. Noticeable firmness is in evidence even in New England, though there has been no marked improvement in demand. Unwilling to pay the high figures asked for Pocahontas, many Midwest dealers who hitherto have been specializing in smokeless are turning to high-grade southern Illinois coals. Screenings are finding a ready market. Cold weather has been bringing buyers out in force.

Central Pennsylvania low-volatile coals, especially egg and stove sizes, are in strong demand in Eastern markets, and at advancing prices. A large number of mines in this field that were closed down during the summer have resumed, but a good many are still idle. Inability to obtain prompt shipments of low-volatile in some instances has caused a marked increase in the sales of medium- and high-volatile grades. The heavy demand for prepared coals is making the disposal of slack somewhat troublesome.

Pea coal having almost reached the vanishing point and buckwheat rapidly moving into the scarce category the anthracite market is practically a thing of the past. Coke, which was the first substitute for hard coal to which consumers turned, now is a difficult article to obtain and the price shows a skyward tendency.

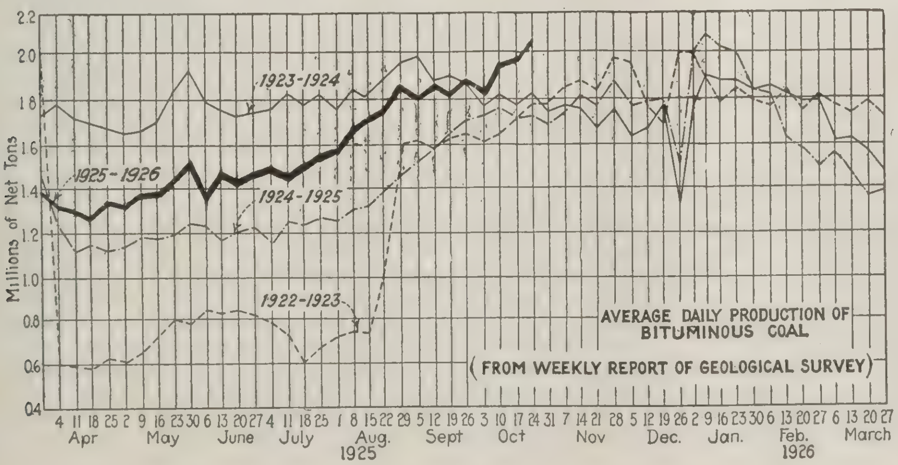
Bituminous coal output during the week ended Oct. 24 is estimated by the Bureau of Mines at 12,104,000 net tons, the first time the 12,000,000 mark has been exceeded since last January. This compares with 11,770,000 tons produced in the preceding week.



Anthracite output in the week ended Oct. 24 totaled 13,000 net tons, a decrease of 4,000 tons from the previous week.

*Coal Age* Index of spot prices of bituminous coal on Nov. 2 stood at 181, the corresponding price being $2.19, compared with 178 and $2.15 the week before.

Dumpings at Lake Erie ports during the week ended Nov. 1, according to the Ore & Coal Exchange, were: Cargo, 873,665 net tons; steamship fuel, 45,760 tons—a total of 919,425 net tons, compared with 850,696 tons in the preceding week. Hampton Roads dumpings in the week ended Oct. 29 totaled 405,873 net tons, against 437,190 tons in the previous week.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| Oct. 10 | 10,904,000 | 11,681,000 |
| Oct. 17 (*a*) | 10,559,000 | 11,770,000 |
| Oct. 24 (*b*) | 10,645,000 | 12,104,000 |
| Daily average | 1,774,000 | 2,017,000 |
| Cal. yr. to date | (*c*) 381,789,000 | 406,908,000 |
| Daily av. to date | 1,520,000 | 1,617,000 |
| **ANTHRACITE** | | |
| Oct. 10 | 1,737,000 | 13,000 |
| Oct. 17 | 1,750,000 | 17,000 |
| Oct. 24 | 1,927,000 | 13,000 |
| Cal. yr. to date | (*c*) 74,210,000 | 61,723,000 |
| **COKE** | | |
| Oct. 17 (*a*) | 147,000 | 226,000 |
| Oct. 24 (*b*) | 140,000 | 223,000 |
| Cal. yr. to date | (*c*) 7,933,000 | 7,932,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Trade Responds to Cool Wave

A snowstorm and a substantial drop in temperature last week did the Midwest coal market a world of good. Dealers are clamoring for Illinois and Indiana domestic sizes, and in some cases operators with coal in transit or with car numbers were able to obtain a slight premium.

There is some doubt in the minds of southern Illinois operators as to the advisability of increasing circular prices 25c. a ton Nov. 1. Some of them, it is said, will advance 6-in. lump and 6x3-in. furnace to $3.50, while others will remain at the $3.25 level, though nothing definite has been decided at this writing. Producers of high-grade domestic coals in Indiana and in other parts of Illinois are holding back circulars until they find out what the Franklin County operators are going to do. They will, of course, be very largely influenced by the policy of the Franklin County people.

Eastern coals, which have been cutting quite a figure in the Chicago market during the past year or so, proved to be unusually scarce last week. The West will not pay the prices for smokeless prepared coal that the East is willing to pay, and dealers who heretofore have been specializing in smokeless coals are now falling back on high grade southern Illinois fuels. The Western market is willing to go as high as $5.50 or $6 for Pocahontas lump and egg, but no higher. Pocahontas mine-run shows signs of strength and moves freely at $2.50. It is expected that an advance will take place before many days. High-volatile coals from West Virginia, which were offered in the Chicago market a little while back at around $2.50 for prepared sizes, are now quoted at $3.25@$3.50.

The steam coal market continues fairly satisfactory. High-grade southern Illinois and high-grade Indiana Fourth Vein 2-in. screenings are finding a ready market and a good demand. The bigger industries show an inclination to buy, fearing a possibility of labor difficulties in the Illinois and Indiana fields arising out of the use of loading machines. A satisfactory volume of screenings is being sold and at reasonably satisfactory prices. The less favored coals of Indiana and Illinois are having hard work in finding a market and continue to drag.

Nobody shows any particular interest in hard coal. The public is buying coke as never before, and it is likely that when the anthracite strike is settled anthracite operators will encounter some difficulty in getting back their old trade. Outside of a few cars moving to branch offices of operating companies, practically no hard coal is in the Chicago market.

Seasonable weather continues to show an increased movement of domestic sizes in the Carterville field and also in the Harrisburg district, especially of lump and egg, but the nut sizes and steam are slow and at various points in the last week a slight car shortage developed. The movement

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Nov. 3 1924 | Oct. 19 1925 | Oct. 26 1925 | Nov. 2 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $4.35 | $4.65 | $4.85 | $4.75@$5.00 |
| Smokeless mine run | Columbus | 2.25 | 2.55 | 2.50 | *2.25@ 2.50* |
| Smokeless screenings | Columbus | 1.30 | 1.50 | 2.05 | **2.00@ 2.15** |
| Smokeless lump | Chicago | 4.60 | 4.10 | 5.75 | 5.50@ 6.00 |
| Smokeless mine run | Chicago | 1.85 | 2.10 | 2.25 | 2.00@ 2.50 |
| Smokeless lump | Cincinnati | 4.10 | 4.75 | 6.00 | **5.00@ 7.50** |
| Smokeless mine run | Cincinnati | 2.00 | 2.50 | 2.50 | *2.25@ 2.50* |
| Smokeless screenings | Cincinnati | 1.15 | 1.90 | 2.00 | *1.90@ 2.00* |
| *Smokeless mine run | Boston | 4.45 | 4.60 | 4.60 | **4.85@ 5.10** |
| Clearfield mine run | Boston | 1.85 | 1.95 | 1.90 | **1.85@ 2.25** |
| Cambria mine run | Boston | 2.20 | 2.25 | 2.25 | **2.15@ 2.60** |
| Somerset mine run | Boston | 2.05 | 2.10 | 2.00 | **1.95@ 2.40** |
| Pool 1 (Navy Standard) | New York | 2.75 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pool 1 (Navy Standard) | Philadelphia | 2.70 | 2.65 | 2.65 | 2.50@ 2.85 |
| Pool 1 (Navy Standard) | Baltimore | 2.45 | 2.30 | 2.15 | 2.10@ 2.20 |
| Pool 9 (Super. Low Vol.) | New York | 2.10 | 2.20 | 2.20 | 2.10@ 2.30 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 1.95 | 1.95 | 1.95@ 2.00 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.80 | 2.15 | 1.95 | 1.90@ 2.00 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.90 | 2.00 | 2.00 | *1.80@ 2.10* |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.85 | 1.85 | 1.75@ 2.00 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.65 | 2.00 | 1.80 | 1.80@ 1.85 |
| Pool 11 (Low Vol.) | New York | 1.65 | 1.80 | 1.80 | 1.75@ 1.90 |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.70 | 1.70 | 1.60@ 1.80 |
| Pool 11 (Low Vol.) | Baltimore | 1.55 | 1.80 | 1.55 | 1.50@ 1.60 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.55 | 1.55 | 1.55@ 1.60 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.60 | 1.60 | 1.50@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.80 | 1.55 | 1.55@ 1.60 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.50 | 2.75 | **2.75@ 3.00** |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.15 | 2.30 | **2.25@ 2.50** |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 2.05 | 2.15 | **2.15@ 2.25** |
| Pittsburgh slack (Gas) | Pittsburgh | 1.20 | 1.55 | 1.40 | *1.25@ 1.35* |
| Kanawha lump | Columbus | 2.55 | 2.60 | 2.60 | 2.45@ 2.80 |
| Kanawha mine run | Columbus | 1.55 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings | Columbus | .95 | 1.30 | 1.30 | *1.25@ 1.35* |
| W. Va. lump | Cincinnati | 2.85 | 2.60 | 2.75 | 2.50@ 3.00 |
| W. Va. gas mine run | Cincinnati | 1.55 | 1.65 | 1.60 | 1.60@ 1.65 |
| W. Va. steam mine run | Cincinnati | 1.45 | 1.55 | 1.55 | 1.50@ 1.60 |
| W. Va. screenings | Cincinnati | .90 | 1.25 | 1.15 | **1.15@ 1.35** |
| Hocking lump | Columbus | 2.55 | 2.70 | 2.70 | 2.50@ 2.90 |
| Hocking mine run | Columbus | 1.60 | 1.65 | 1.65 | 1.50@ 1.85 |
| Hocking screenings | Columbus | .75 | 1.30 | 1.30 | *1.25@ 1.35* |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.35 | 2.45 | **2.10@ 3.00** |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.85 | 1.95 | 1.95@ 2.00 |
| Pitts. No. 8 screenings | Cleveland | 1.00 | 1.25 | 1.35 | **1.40@ 1.50** |

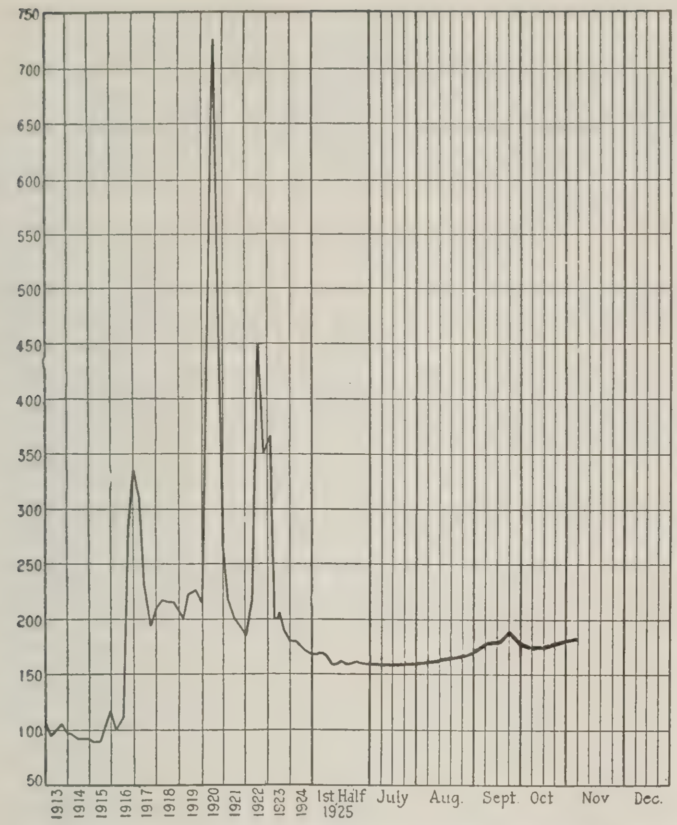
| Midwest | Market Quoted | Nov. 3 1924 | Oct. 19 1925 | Oct. 26 1925 | Nov. 2 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $3.35 | $3.25 | $3.25 | $3.25 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Central, Ill. lump | Chicago | 2.85 | 2.85 | 2.85 | 2.75@ 3.00 |
| Central, Ill. mine run | Chicago | 2.20 | 2.10 | 2.20 | 2.15@ 2.25 |
| Central, Ill. screenings | Chicago | 1.10 | 1.55 | 1.55 | 1.35@ 1.75 |
| Ind. 4th Vein lump | Chicago | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.30 | 1.60 | 1.60 | 1.50@ 1.75 |
| Ind. 5th Vein lump | Chicago | 2.85 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | .95 | 1.40 | 1.40 | 1.35@ 1.50 |
| Mt. Olive lump | St. Louis | 3.00 | 2.50 | 2.50 | 2.50 |
| Mt. Olive mine run | St. Louis | 2.35 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.10 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.75 | 2.25 | 2.25 | 2.25 |
| Standard mine run | St. Louis | 1.95 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | .60 | 1.15 | 1.15 | 1.15 |
| West Ky. block | Louisville | 3.05 | 1.85 | 2.00 | **1.90@ 2.25** |
| West Ky. mine run | Louisville | 1.60 | 1.35 | 1.35 | 1.20@ 1.50 |
| West Ky. screenings | Louisville | .65 | 1.00 | 1.05 | *.70@ 1.10* |
| West Ky. block | Chicago | 2.75 | 2.05 | 2.05 | 1.85@ 2.25 |
| West Ky. mine run | Chicago | 1.65 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.10 | 2.25 | 2.25 | 2.00@ 2.50 |
| Big Seam mine run | Birmingham | 1.60 | 1.80 | 1.80 | *1.50@ 2.00* |
| Big Seam (washed) | Birmingham | 1.85 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block | Chicago | 2.85 | 3.00 | 3.00 | 2.75@ 3.25 |
| S. E. Ky. mine run | Chicago | 1.60 | 1.95 | 1.95 | 1.85@ 2.10 |
| S. E. Ky. block | Louisville | 3.25 | 2.60 | 2.75 | **2.75@ 3.50** |
| S. E. Ky. mine run | Louisville | 1.45 | 1.50 | 1.50 | 1.40@ 1.65 |
| S. E. Ky. screenings | Louisville | .95 | 1.25 | 1.25 | *1.10@ 1.35* |
| S. E. Ky. block | Cincinnati | 3.00 | 2.80 | 3.25 | 2.75@ 3.75 |
| S. E. Ky. mine run | Cincinnati | 1.55 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Cincinnati | .90 | 1.30 | 1.20 | **1.15@ 1.40** |
| Kansas lump | Kansas City | 5.00 | 4.50 | 4.60 | **4.75@ 5.00** |
| Kansas mine run | Kansas City | 3.10 | 2.85 | 3.00 | **3.00@ 3.25** |
| Kansas screenings | Kansas City | 2.00 | 2.40 | 2.30 | 2.25@ 2.35 |

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Nov. 3, 1924 | | Oct. 26, 1925 | | Nov. 2, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ............ | $8.00@$9.25 | ............ | $8.20@$8.95 | ............ | $8.20@$8.95 |
| Broken | Philadelphia | 2.39 | ............ | 9.15 | ............ | ............ | ............ | ............ |
| Egg | New York | 2.34 | $9.00@$9.75 | 8.75@ 9.25 | ............ | 8.65@ 8.90 | ............ | 8.65@ 8.90 |
| Egg | Philadelphia | 2.39 | 9.25@ 9.75 | 8.80@ 9.25 | ............ | ............ | ............ | ............ |
| Egg | Chicago* | 5.06 | 8.17@ 8.27 | 8.14@ 8.20 | $9.50@10.00 | 8.03@ 8.28 | $9.50@10.00 | 8.03@ 8.28 |
| Stove | New York | 2.34 | 10.00@10.25 | 8.75@ 9.50 | ............ | 9.15@ 9.40 | ............ | 9.15@ 9.40 |
| Stove | Philadelphia | 2.39 | 9.85@10.25 | 9.15@ 9.50 | ............ | ............ | ............ | ............ |
| Stove | Chicago* | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@11.00 | 8.48@ 8.80 | 10.00@11.00 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 9.50@10.25 | 8.75@ 9.25 | ............ | 8.65@ 8.95 | ............ | 8.65@ 8.95 |
| Chestnut | Philadelphia | 2.39 | 9.65@10.00 | 9.15@ 9.25 | ............ | ............ | ............ | ............ |
| Chestnut | Chicago* | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@11.00 | 8.50@ 8.75 | 10.00@11.00 | 8.50@ 8.75 |
| Pea | New York | 2.22 | 5.00@ 5.50 | 5.50@ 6.00 | ............ | 5.00@ 6.25 | ............ | 5.00@ 6.25 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.35 | 5.75@ 6.00 | ............ | 5.00@ 6.25 | ............ | 5.00@ 6.25 |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 |
| Buckwheat No. 1 | New York | 2.22 | 2.25@ 2.75 | 3.00@ 3.15 | ............ | 2.50@ 2.75 | ............ | 2.50@ 2.75 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | ............ | 2.50@ 3.00 | ............ | 2.50@ 3.00 |
| Rice | New York | 2.22 | 1.80@ 2.15 | 2.00@ 2.25 | ............ | 2.25 | ............ | 2.25 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | ............ | 2.25 | ............ | 2.25 |
| Barley | New York | 2.22 | 1.25@ 1.50 | 1.50 | ............ | 2.25 | ............ | 2.25 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | ............ | 1.50 | ............ | 1.50 |
| Birdseye | New York | 2.22 | 1.35@ 1.60 | 1.60 | ............ | ............ | ............ | ............ |

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Nov. 2 | Oct. 26 | Oct. 19 | Nov. 3 |
| Index ................... | 181 | 178 | 176 | 171 |
| Weighted average price.. | $2.19 | $2.15 | $2.13 | $2.07 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

of coal by the carriers is unusually slow. Working time is from four to five days a week at the shaft mines and railroad tonnage is reported fair. There is no change in prices.

In the Duquoin district four and five days a week is the working time at the mines that are operating, but the only size moving well appears to be lump. Egg and nut are slow, with no railroad tonnage except at one mine. Strip mines in this district are working regularly. The Mt. Olive field shows remarkable activity, having almost full working time, a market for all coal and an unusually heavy railroad tonnage moving. Working time is four to five days a week.

In the Standard field there is little change. Coal is still selling at about cost of production and there is no unusual demand for any particular sizes excepting 6-in. lump, and this is scarce because there is no market for the smaller sizes. Steam is slow and railroad coal is reported light. All mines carry "no bills." Working time ranges from three to four days a week. Prices are unchanged.

Domestic business in St. Louis continues to show improvement on account of seasonable weather. The movement of coke locally became good this week; anthracite and smokeless are still slow, dealers in St. Louis having an abundance of anthracite on hand, although smokeless is pretty well cleaned up. Carterville is beginning to move fairly well but the demand continues for middle priced coals. Standard is beginning to get into its own with the poorer classes. Apartments and schools are pretty well filled up. Country domestic is fairly good on all sizes. Local wagonload steam continues to show improvement. Carload is fair but is not equal to the supply. Country steam is fairly good. Several hundred cars of coke have been shipped out from the St. Louis switching district ovens in the last week. Some of these orders are for Buffalo, Toronto and points farther West. This call is for chestnut coke, which takes the place of anthracite. No change in prices.

## Heavier Movement from Kentucky

Demand and movement are stronger in Kentucky this week and prices are better. Eastern Kentucky has advanced until practically no block coal is under $2.85, and best grades are quoted as high as $3.50; lump and egg running $2.25@$2.75, and nut, $2@$2.25. Mine-run is unchanged at $1.40@$1.65, but screenings are a shade weaker at $1.10@$1.35 due to larger production. In western Kentucky 6-in. block has advanced to $1.90@$2.25; lump, $1.75@$2; egg, $1.75@$2; nut, $1.25@$1.50; mine-run, $1.20@$1.50 and screenings, 70c.@$1.10. Steam coal is weaker as a result of small nut and screenings being in larger supply. Car shortage is developing in eastern Kentucky.

Railroad consumption is running very heavy, while utility and plants show no real indication of a let-up.

Eastern Kentucky mines appear to be very busy, with a lot of good business in hand, a heavy movement to the lakes, and a steady increase in coal moving into sections affected by the anthracite strike. Western Kentucky is gradually increasing tonnage moving to the North and Northwest.

## Fresh Burst of Activity in Northwest

Colder weather over the Northwest contributed to a fresh burst of activity in the Duluth-Superior coal market last week. All the docks operated full time in loading out cars for transmission to points over a wide area including Minnesota, North Dakota and northern Wisconsin. So brisk has been bookings by retailers in the last few weeks that many are taking on fresh supplies.

Industrials are ordering steam coal more freely and inquiries from public utilities are broader than for some time. Some of these buyers have been contracting further ahead recently. On the whole, dock operators are more optimistic regarding the outlook.

Last week forty-one cargoes of coal were unloaded at the docks and ten more were en route. Free bituminous coal on the docks is now placed at 3,700,000 tons and stocks of railroad coal are figured nearly 2,000,000 tons additional.

No panic over the possibility of an anthracite shortage has as yet developed. Dealers are experiencing a steadily expanding trade in Pocahontas and other smokeless fuels and it is figured that supplies of those fuels coming forward will be found ample to cover all requirements.

A brisk and increasing demand for bituminous coal is reported by the managers of coal docks in Milwaukee, and a sort of scramble demand for the comparatively small tonnage of anthracite still in stock. The increased call for Pocahontas consequent upon the shortage of anthracite has kept the price firm and on the upgrade. Dealers are looking for a further advance in prices at the mines, but no change has been made here yet in the rates that have prevailed for several weeks. The weather is unseasonably cold, and consumers now are eager to fill their bins.

## Southwest Sees Rebound

A return of cold weather has brought fresh joy to coal operators in the Kansas field, and in more modest degree to the entire Southwest. Oklahoma and Arkansas, because of a market reduced by labor trouble and rumors of labor trouble, do not share commensurately with Kansas in the seasonal activity. A brief period of warmer weather permitted a readjustment between domestic and industrial grades, but, with the resumption of heavy domestic demand due to the early arrival of below freezing weather, a screenings surplus again has begun to accumulate. Consequently, while the price of $4.75 for Kansas lump has become more firmly established, with some operators quoting it as high as $5, there is an increasing tendency to shade the list quotation of $2.35 for Kansas screenings.

Arkansas semi-anthracite lump quotations are fairly stable at $6@$6.50 a ton, with several big operators in the Arkansas field still keeping their mines idle.

McAlester (Okla.) lump is quoted at $7; nut, $5.50; screenings, $2.25. Henryetta (Okla.) lump is $5; nut, $4.25; screenings, $2@$2.25. A slowly but steadily increasing production is reported from Oklahoma.

The demand for the domestic lump and steam size coal in Colorado is in excess of the production, which is causing operators some difficulty to the extent that nut is slow to move. The situation probably will materially improve, as cold weather has set in in Kansas and Nebraska. Colorado anthracite mines are working at full capacity and the bituminous and lignite fields are operating about 90 per cent. There are no changes in current prices on coal since last week.

The Utah coal market continues dull, due to weather conditions. The railroads have been taking more coal for steam purposes than normal for the season on account of the heavy crops which must be moved, but heating plants are not taking much coal yet. The car supply is ample, but this is due to the light demand for coal rather than the ability of the railroads to furnish necessary transportation facilities. Prices are steady and the labor situation is good. Domestic lump, the next grade to straight lump, is becoming more popular.

### Smokeless Situation Mixed at Cincinnati

The smokeless situation in Cincinnati still proves a hard nut to crack. November circulars of the larger Pocahontas producers show one company's price $5 for lump and egg "to our recognized contract customers," another's $5.50 and a third's $6. In the face of all this mine-run marks time.

Under the influence of a car shortage on the L. & N. due to congestion at the lakes, southeastern Kentucky block has stiffened up to $2.75@$3.25 for coals that formerly had a range of $2.50@$3. Egg is $2.50 and 2-in. $2.25. Mine-run is about in the same range as last week and the slack commands $1.25@$1.35 for anything that is good. The Chesapeake & Ohio avoided a car shortage by obtaining 1,000 cars from an Eastern road on a mileage per diem basis. Still the congestion at the lake ports primarily and the jam at the gateways is getting rather serious in view of the fact that navigation gets its last fling about Nov. 10.

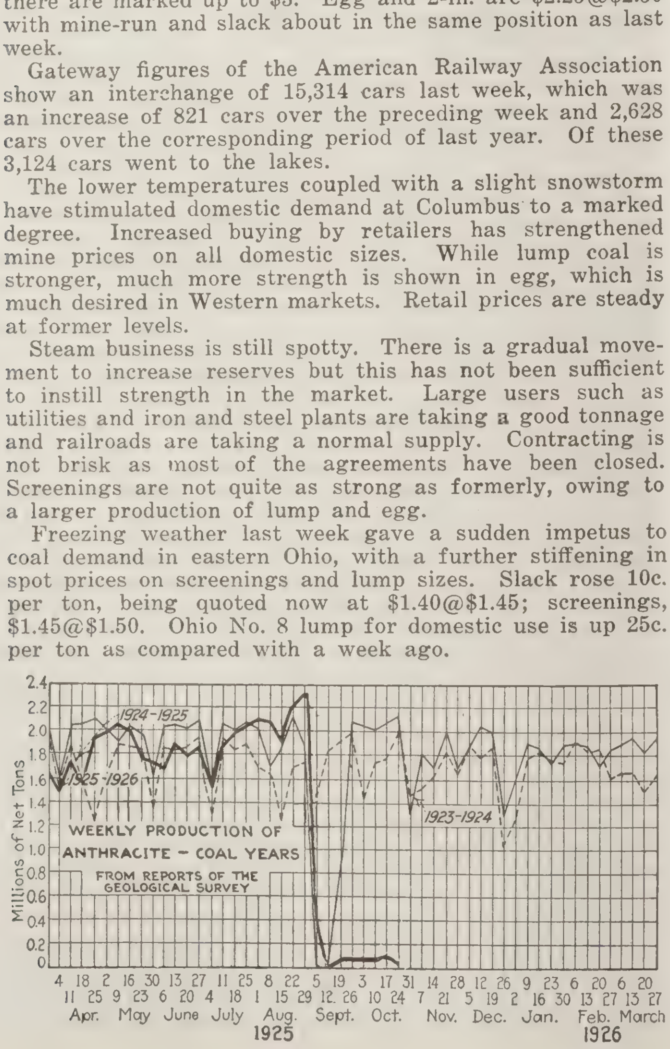
The price of West Virginia coals has started to move upward. One large competitor of a Logan County company that fixed an arbitrary of $2.50 on lump has broken away and has boosted the November price to $2.75. Kanawha also has refused to be led and some of the leading coals there are marked up to $3. Egg and 2-in. are $2.25@$2.50 with mine-run and slack about in the same position as last week.

Gateway figures of the American Railway Association show an interchange of 15,314 cars last week, which was an increase of 821 cars over the preceding week and 2,628 cars over the corresponding period of last year. Of these 3,124 cars went to the lakes.

The lower temperatures coupled with a slight snowstorm have stimulated domestic demand at Columbus to a marked degree. Increased buying by retailers has strengthened mine prices on all domestic sizes. While lump coal is stronger, much more strength is shown in egg, which is much desired in Western markets. Retail prices are steady at former levels.

Steam business is still spotty. There is a gradual movement to increase reserves but this has not been sufficient to instill strength in the market. Large users such as utilities and iron and steel plants are taking a good tonnage and railroads are taking a normal supply. Contracting is not brisk as most of the agreements have been closed. Screenings are not quite as strong as formerly, owing to a larger production of lump and egg.

Freezing weather last week gave a sudden impetus to coal demand in eastern Ohio, with a further stiffening in spot prices on screenings and lump sizes. Slack rose 10c. per ton, being quoted now at $1.40@$1.45; screenings, $1.45@$1.50. Ohio No. 8 lump for domestic use is up 25c. per ton as compared with a week ago.



A much improved demand is perceptible from almost all quarters, the chief activity being in domestic grades. Due to heavier shipments of smokeless from West Virginia mines to the East, Pocahontas is quoted at Cleveland at $6.25@$7 f.o.b. mines, as compared with $5 ten days ago, and retailers are said to be having difficulty in getting prompt delivery. Steam inquiries likewise are more active, and the railroads are reported to be taking 100 per cent on contracts.

### Increased Strength at Pittsburgh

The Pittsburgh district coal market has grown much stronger in the past week. Current output seems to have been well absorbed by previous purchases, making a market in which there is a fairly large volume of inquiry and offerings scant indeed. Inquiry is largely from the East and North and may be considered typical of demand for an anthracite substitute, as it runs largely to egg size, something the district ordinarily has little call for.

Curious results have followed from the demand running in this line. Egg coal has brought up to $4 and may be quoted at $3.75@ $4 as the going market of the past few days, whereas 3-in. lump has been bringing only $3.50@ $3.75. Ordinarily the Pittsburgh district does much in 1¼-in., which used to be the ordinary domestic size, and in 2-in., but when operators can get such high prices for egg they refuse to quote on 1¼-in. and 2-in.

Slack coal naturally has gone off, with the heavier shipments of egg and lump, and is now $1.15@$1.25 for steam and $1.25@$1.35 for gas, and weak at that. In general the market is up fully 25c. in scarcely more than a week and if demand continues so insistent prices on some grades may advance farther. Gas coal has not been able to maintain its premium.

Mines that operated through the summer are now running full and some additional mines have started.

The bituminous trade at Buffalo is in rather demoralized shape. Slack is hard to sell, but the producers of Pittsburgh lump and Allegheny Valley mine-run are putting their prices up 25c. or more, apparently just to see if they can get it. As a rule the shippers here say they cannot sell at the advance, but it may prevail for all that.

### Demand Light, Prices Firm in New England

The market in New England is noticeably firmer. Advances in prices on mine-run as well as prepared are being well maintained and it is clear that anything approaching steady demand will mean a still higher level, especially for the smokeless coals. A curtailment of mine-run to the Hampton Roads piers relieved the pressure and to such an extent was it carried out that a few of the agencies were without spot tonnage beyond contract commitments. There also has been some exchange of coal between shippers in order to clear cargoes, but for the most part the available supply is more than ample for current requirements.

On No. 1 Navy standard Pocahontas and New River the range has been lifted to $4.85@$5.10 per gross ton f.o.b. mines for mine-run, with slack continuing to sell at about $1.30@$1.40 per net ton f.o.b. mines. Notwithstanding better prices there is no marked improvement in demand; buying is very sparing.

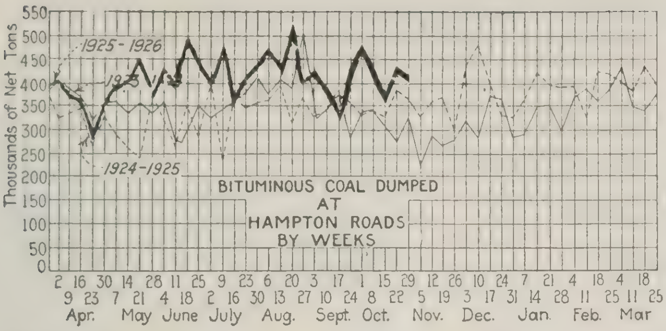
For delivery inland from Boston and Providence there is scattering inquiry, but latterly the mine-run smokeless coals have acquired a reputation for an undue proportion of slack, owing, the buyer surmises, to the heavy demand for screened coal. Prices on cars are $6@$6.25, with the probability of an advance within a few days to $6.50.

Lump and egg are being held firmly at $6.50@$6.75 for Pocahontas and New River, subject to some delay in shipment. From central Pennsylvania the range of price on the desirable coals is 50c.@75c. higher, retail dealers being willing to pay that much more because delivery is reasonably prompt and the all-rail tariff is so much less.

For Pennsylvania mine-run there is only light demand. Prices have improved, but the smokeless coals still have the call in this territory.

### Heavy Movement to New York

New York industrial buyers are calling for heavy shipments of mine-run coal, the retail trade is taking an increasing tonnage, both screened and unscreened, and the bituminous producers whose mines are in operation have



about all the business they can handle. Low-volatile operators equipped to ship prepared sizes similar to domestic anthracite are turning away orders for this part of their output, although the disposal of slack is causing them some trouble.

As high as $7@$8 a ton is being quoted for low-volatile egg and stove sizes by central Pennsylvania operators. Unsized lump from which the slack has been screened is bringing $5.50@$6.50, f.o.b. mines. Medium-volatile grades are from 50c. to $1 under these figures. High-volatile egg and stove range in price $4@$5 at the mines, and there has been a marked increase in demand recently because of the scarcity of other grades.

Retail dealers are buying an increased tonnage of mine-run, but many consumers have not yet started taking this coal. Cold weather will force them into the market sooner or later, if the anthracite collieries remain idle, and their requirements, added to those of industrial consumers and the railroads, bid fair to create a shortage unless the supply is materially augmented by the reopening of idle mines.

Domestic demand for soft coal is putting a little stir in the trade at Philadelphia, but steam business is as quiet as it has been for weeks past. Each day sees an increase in the domestic use of bituminous of all low-volatile grades. A strong demand is setting in for all mine-run coals of a lumpy nature. Now that the byproduct coke has been almost entirely absorbed there is a strong demand for the beehive product.

Sized gas coals are pretty well sold up, although this has produced a considerable amount of slack which is not moving with the speed that the producers would like. Buying for railroad account of all fuels is moderate and the situation at tide is only ordinary.

The soft-coal situation in Baltimore remains flat and uninteresting in so far as regular mine-run coals are concerned, although reports from the various offices indicate that prepared sizes continue strong and active, with a further advance in price likely. Latest quotations on these coals are from $5.50 to around $5.65 per net ton. The coke situation is unchanged, with prices at the highest level they have been for a long time. The export situation has gone absolutely dead, with no records of coal shipments since Oct. 13.

Demand for domestic coal at Birmingham continues to show improvement and spot buying during the past week has amounted to considerable tonnage. Most all business placed was by dealers who had nominal stocks which were depleted by the rush of retail orders following the several cold spells of late, and from community centers and small towns in the territory. The mines have taken on sufficient business to move their output without delay in connection with contract business, on which deliveries have not been materially increased so far. All spot buying was for prompt shipment.

Buying of steam coal is on the increase and there is some scarcity of the high-grade washed and mine-run product, creating a stiffer demand for medium and lower grades, which are moving better than before for some time. Utilities have cut their requirements to a low figure on account of greater activity at hydro-electric plants; the ginning season is about over, and demand from other seasonable industries has slackened considerably, but this loss has been more than offset by healthier and heavier industrial requirements. The stiff demand for all grades of coke has taken a large tonnage of fuel off the commercial market, foundry quotations having gone to $6@$6.50 per ton during the past week for spot shipment, with a very active call of wide range for all domestic sizes.

## Hard-Coal Substitutes High and Scarce

Even No. 1 buckwheat is no longer available in the New York wholesale market, except for a relatively small amount in the hands of wholesalers. Orders are no longer being accepted by the companies, it is reported, as they already have commitments for practically all the tonnage remaining in the stocking plants. Reserve stocks of other sizes in the hands of the larger producers were exhausted some time ago, and even the speculators have little left.

Some retail yards still have considerable anthracite left, but the bulk of it is steam sizes. The larger coal is being sold in small quantities to regular customers or held for emergencies. Buyers usually are required to take an equal or greater amount of soft coal or coke with each delivery of anthracite.

It is only a question of a short while now until the average dealer will have nothing but substitutes to offer. It is becoming difficult to obtain prompt shipments of the most desirable substitutes, namely, coke and sized low-volatile bituminous. The demand has been so great for several weeks that producers are sold up and in many cases oversold. Besides, the price has gone to a level which buyers hesitate to pay.

Because of these conditions the buying of screened high-volatile and medium-volatile coals has been greatly stimulated of late and prices have advanced.

Coke is now selling for $9@$10 at the ovens and is practically unobtainable for prompt delivery.

What little independent buckwheat is to be had commands around $5, mine basis, for line shipments. Loaded boats of this size in New York harbor are being held at $6.75@$7.25 alongside.

Not a great deal of pea and buckwheat arrived at Philadelphia during the week. The storage stock of pea seems to have almost reached the vanishing point and the price is $12@$12.50, with some at $13. Storage buckwheat is fast moving into the scarce class at $3, with an increase almost a foregone conclusion.

Dealers who delayed purchasing coke as a substitute now find it almost impossible to purchase. Wholesale prices range $9.50@$11.50 at the ovens and retail quotations $17@$18 per net ton, but the demand from consumers is not at all brisk.

The situation at Buffalo grows more complicated day by day, though more in people's minds than otherwise. So many anthracite consumers have the idea that there is a coal famine because they are not able to get large sizes that the city authorities sent a man to the mining regions and bought a thousand tons for distribution in small amounts at schedule prices to those who were without any. The offering of all sorts of substitute fuel goes on. Coke leads, for there is a great demand.

There is no change in the Baltimore hard-coal market, both dealers and operators apparently being satisfied to mark time for the present at least.

## Connellsville Coke Market Suffers Reaction

The Connellsville coke market gained in strength up to early last week, when something happened. Prices went up to a range of $8.50@$9—$9.50 is said to have been obtained from some Eastern jobbers on run-of-oven coke. Prepared coke, broken by various means, seems to have commanded $1 a ton over run-of-oven, or $9@$10.

Inquiry continued to diminish, leaving the market in rather slack condition at this writing, quotable on the basis of last sales at $8.50@$9.

Blast furnaces continue out of the situation, but have marked up pig iron prices $1 a ton in anticipation of higher coke cost when contracts for the present quarter expire.

Foundry coke has gotten into some demand and has made a market, at $9@$9.50.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Oct. 17, 1925 | 1,106,114 | 186,389 |
| Previous week | 1,106,099 | 184,331 |
| Week ended Oct. 18, 1924 | 1,102,300 | 192,244 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Oct. 14, 1925 | 130,797 | 52,942 | ........ | ....... |
| Oct. 8, 1925 | 136,009 | 58,256 | ........ | ....... |
| Oct. 14, 1924 | 99,952 | 50,160 | ........ | ....... |

# Foreign Market And Export News

## Foreign as Well as Inland Trade Improves in British Market

The general situation in the Welsh steam coal trade is regarded as more favorable, but the improvement cannot as yet be considered as marked. The last two months were undoubtedly the worst in the steam coal trade for many years, and it was hardly to be expected that conditions would remain so bad for an indefinite period. There is no prospect of prices improving for the present, but it is all in favor of the Welsh steam coal industry that there should be some recovery of exports, even if only of a partial character, and inquiries seem to be coming forward from all the customary Welsh markets.

Inland trade, both domestic and industrial, also is reviving. A little contract business is being done, chiefly for locomotives, for delivery over the next two months, there still being unwillingness to do business for twelve months owing to the possible effect of the government subsidy and as to what may happen when the subsidy is withdrawn.

There is a change for the better in the Newcastle-on-Tyne coal trade, and the outlook may now be described as comparatively good. Inquiries for all classes of coal have broadened and cover more extended periods instead of being merely from hand to hand as hitherto. While bookings of the collieries extend into November and also December and some are able to see their way clear to the end of the year. Contract business consists mainly of small gas coals.

Output by British mines during the week ended Oct. 17, according to a special cable to *Coal Age*, totaled 4,715,000 gross tons, compared with 4,685,000 tons in the preceding week.

### Belgian Market Unchanged

The situation in the Belgian coal market is unchanged from last week; industrial coals are rather weak and domestic coals generally firm. Prices remain the same; anthracite continues to advance while in industrial coals the tendency is lower. In consequence of decreased foreign exchanges, there is renewed competition both French and foreign, particularly the former. Stocks are diminishing, even in the Borinage basin. The demand for coke and for ovoids is slightly better.

### General Tone Is Firmer At Hampton Roads

The market at Hampton Roads last week was stronger, demand being more active, particularly in domestic coal. New freight rates to New York and New England helped coastwise business also, and bunker trade was brisk.

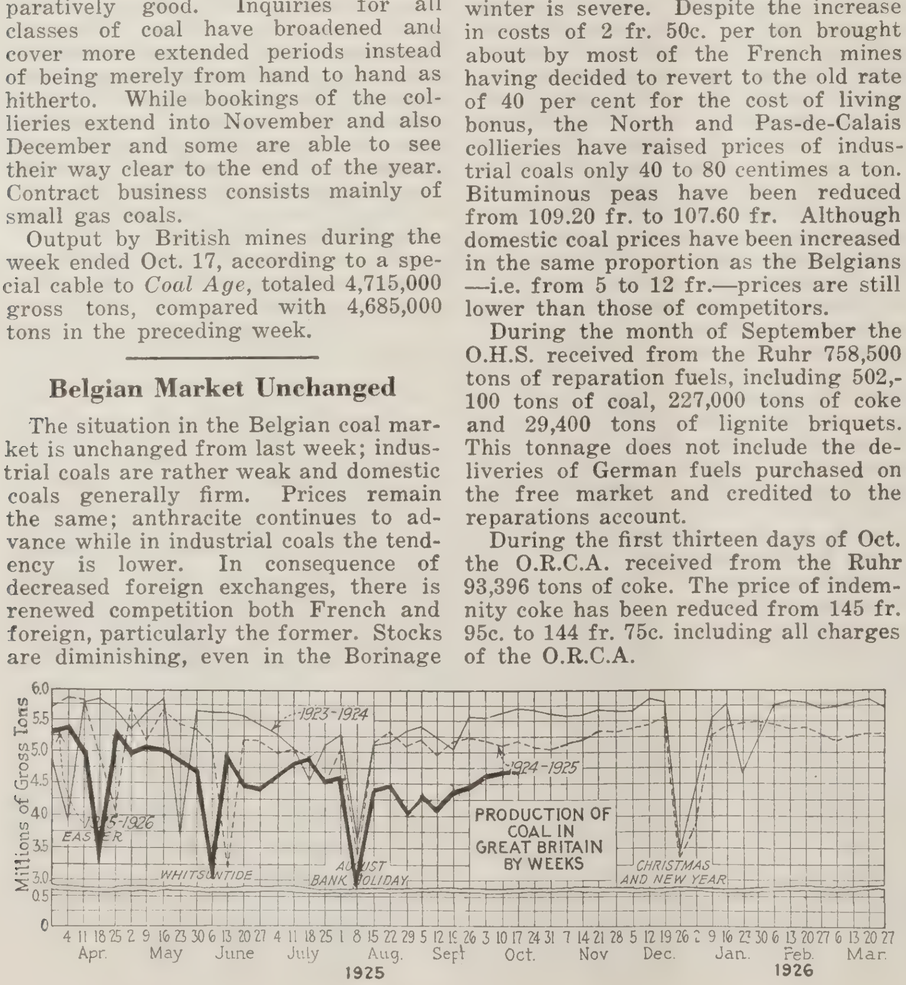
Prices were strengthened and inquiries more frequent. A slight increase was seen in foreign shipments. The situation in car lots is reported better, and some mines that were practically inactive for several months have begun increased production. Feeling in the trade is more optimistic.

### French Market Improves

A slight improvement is noted in the demand for industrial coals in the French market. For domestic coals the situation is very favorable, a scarcity of sized products being feared if the winter is severe. Despite the increase in costs of 2 fr. 50c. per ton brought about by most of the French mines having decided to revert to the old rate of 40 per cent for the cost of living bonus, the North and Pas-de-Calais collieries have raised prices of industrial coals only 40 to 80 centimes a ton. Bituminous peas have been reduced from 109.20 fr. to 107.60 fr. Although domestic coal prices have been increased in the same proportion as the Belgians—i.e. from 5 to 12 fr.—prices are still lower than those of competitors.

During the month of September the O.H.S. received from the Ruhr 758,500 tons of reparation fuels, including 502,100 tons of coal, 227,000 tons of coke and 29,400 tons of lignite briquets. This tonnage does not include the deliveries of German fuels purchased on the free market and credited to the reparations account.

During the first thirteen days of Oct. the O.R.C.A. received from the Ruhr 93,396 tons of coke. The price of indemnity coke has been reduced from 145 fr. 95c. to 144 fr. 75c. including all charges of the O.R.C.A.



### U. S. Fuel Exports in September

(In Gross Tons)

| | 1924 | 1925 |
|---|---|---|
| Anthracite | 326,346 | 163,271 |
| Bituminous | 1,503,756 | 1,628,954 |
| Exported to: | | |
| France | 27,067 | 36,809 |
| Italy | 33,590 | 70,740 |
| Other Europe | 1,100 | 8,974 |
| Canada | 1,201,751 | 1,346,238 |
| Panama | 23,700 | 12,047 |
| Mexico | 6,222 | 8,469 |
| Br. W. Indies | 20,184 | 2,189 |
| Cuba | 46,184 | 40,015 |
| Fr. W. Indies | 1,118 | 7,023 |
| Other W. Indies | 15,893 | 10,255 |
| Argentina | 15,660 | 12,911 |
| Brazil | 77,282 | 39,700 |
| Chile | 781 | 3,902 |
| Egypt | 3,366 | 2,631 |
| French Africa | 7,606 | 9,357 |
| Other countries | 22,252 | 17,712 |
| Coke | 41,804 | 83,955 |

### Export Clearances, Week Ended Oct. 31, 1925

| FROM HAMPTON ROADS | |
|---|---|
| For Italy: | Tons |
| Ital. Str. Aster, for Porto Ferrajo | 8,834 |
| Ital. Str. Enrichetta, for Portovecchio | 6,976 |
| For Bermuda: | |
| Amer. Schr. Ellen Little, for Hamilton | 1,079 |
| For Dominican Republic: | |
| Nor. Str. Ottar, for Santo Domingo | 875 |
| For Cuba: | |
| Amer. Str. Amelia, for Guantanamo | 516 |
| Nor. Str. Marga, for Santa Cruz | 1,979 |
| For Philippine Islands: | |
| Br. Str. Titan, for Manila | 3,112 |
| For Newfoundland: | |
| Nor. Str. Thorgerd, for Argentia | 3,603 |
| For Virgin Islands: | |
| Br. Str. Maidenhead, for St. Thomas | 6,881 |
| FROM PHILADELPHIA | |
| For Cuba: | |
| Nor. Str. Annetta Paulsen, for Cayo Mambi | |

### Hampton Roads Pier Situation

| N. & W. Piers, Lamberts Pt.: | Oct. 22 | Oct. 29 |
|---|---|---|
| Cars on hand | 1,707 | * |
| Tons on hand | 110,637 | * |
| Tons dumped for week | 121,568 | 131,603 |
| Tonnage waiting | 12,000 | * |
| Virginian Piers, Sewalls Pt.: | | |
| Cars on hand | 1,258 | * |
| Tons on hand | 100,850 | * |
| Tons dumped for week | 117,311 | 84,312 |
| Tonnage waiting | 23,531 | * |
| C. & O. Piers, Newport News: | | |
| Cars on hand | 2,781 | * |
| Tons on hand | 140,535 | * |
| Tons dumped for week | 151,469 | 146,472 |
| Tonnage waiting | 13,350 | * |

* Figures withheld due to shippers' protest.

### Pier and Bunker Prices, Gross Tons

| PIERS | Oct. 24 | Oct. 31* |
|---|---|---|
| Pool 1, New York | $5.35@$5.60 | **$5.50@$5.75** |
| Pool 9, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 10, New York | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 11, New York | 4.45@ 4.70 | **4.50@ 4.70** |
| Pool 9, Philadelphia | 4.85@ 5.05 | 4.85@ 5.05 |
| Pool 10, Philadelphia | 4.55@ 4.75 | 4.55@ 4.75 |
| Pool 11, Philadelphia | 4.35@ 4.55 | 4.35@ 4.55 |
| Pool 1, Hamp. Roads | 4.75@ 4.90 | **5.00@ 5.25** |
| Pool 2, Hamp. Roads | 4.60 | **4.75@ 5.00** |
| Pocls 5-6-7, Hamp. Rds. | 4.50 | **4.60@ 4.75** |
| BUNKERS | | |
| Pool 1, New York | $5.60@$5.85 | **$5.75@$6.00** |
| Pool 9, New York | 5.25@ 5.50 | 5.25@ 5.50 |
| Pool 10, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 11, New York | 4.70@ 4.95 | **4.75@ 4.95** |
| Pool 9, Philadelphia | 5.05@ 5.25 | 5.05@ 5.25 |
| Pool 10, Philadelphia | 4.75@ 4.85 | 4.75@ 4.85 |
| Pool 11, Philadelphia | 4.60@ 4.75 | 4.60@ 4.75 |
| Pool 1, Hamp. Roads | 4.75@ 4.90 | **5.00@ 5.25** |
| Pool 2, Hamp. Roads | 4.70 | **4.75@ 5.00** |
| Pools 5-6-7, Hamp. Rds. | 4.50 | **4.60@ 4.75** |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Oct. 24 | Oct. 31* |
|---|---|---|
| Admiralty, large | 22s.3d.@23s.6d. | **23s.@23s.9d.** |
| Steam smalls | 10s.3d. | 10s.3d. |
| Newcastle: | | |
| Best steams | 15s.3d.@15s.6d. | **15s.6d.** |
| Best gas | 16s.6d. | 16s.6d. |
| Best bunkers | 14s.6d.@15s. | **14s.6d.@15s.6d.** |

* Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

The Birmingham Coal & Iron Co., Birmingham, of which L. E. Boyetta is president, will soon begin the expenditure of about $100,000 on tenant houses, tipples, washers, screens, etc., to increase the capacity of the coal mines to about 1,000 tons per day.

The Joseph A. Holmes Safety Association, which has a large number of chapters in the mining camps of the Birmingham district, will disseminate information and instruction regarding mine-rescue and first-aid work among the membership by having outstanding mining men and engineers write papers on various subjects germane to such work. These papers will be printed and circulated each month among the members of the local chapters, where they will be read and discussed. The first of these papers will be prepared by S. L. Morrow, a prominent industrial man, formerly chief engineer of the woodward Iron Co., who will discuss "What a miner should do after a fire or explosion in the mine."

Estimates of coal production in Alabama for the present year are more than 19,000,000 tons. For the first nine months of the present year the car loadings and other reports show an output of 14,564,000 tons. Output by months so far this year is: January, 1,641,000 tons; February, 1,583,000 tons; March, 1,726,000 tons; April, 1,450,000 tons; May, 1,645,000; June, 1,555,000; July, 1,575,000; August, 1,625,000; September, 1,764,000. As production is on the increase the figures for October, November and December are expected to be large.

## ILLINOIS

Sale of the assets and stock of the Southern Gem Coal Co., which includes large coal mines in southern Illinois, was ordered Oct. 19 at Cairo, by Federal Judge George W. English, upon a petition setting forth that the receivers, into whose hands the company was given more than a year ago, have been unable to meet a $75,000 monthly maintenance expense. The mining property, located in Franklin and Jefferson counties, was valued at more than $1,500,000.

Six hundred coal miners were given employment Oct. 26, when the Saline County Coal Corporation's No. 3 mine, at Harrisburg, resumed operations after a long shutdown. In Saline County eleven large mines are now in operation.

Six senior students of the mining engineering department of the University of Illinois, under the direction of Prof. I. M. Marshall, spent the week of Oct. 25-31 visiting the southern Illinois coal fields. They visited, among others, the following mines: Union Colliery Co., Dowell; Black Servant Coal Co., Elkville; Mine Rescue Station, Benton; Orient Mine No. 2, West Frankfort; Nason Coal Co., Nason; United States Fuel Co., Middle Fork, near Benton; St. Louis Smelting & Refining Co., Collinsville; St. Louis Coke & Iron Co., and National Enameling & Stamping Co., Granite City, as well as the National Lead Co., Salt River, Mo. This is an annual trip required of students before graduation in mining engineering.

The Peabody Coal Co. opened its Mine No. 51, at Andrew, Oct. 16, with two hundred miners employed. The mine normally has an output of 1,200 to 1,400 tons of coal daily. It has been closed since February, 1924.

Mine No. 7 at Kincaid opened Oct. 26.

The Standard Coal and Coke Corporation, a Delaware corporation, has purchased the Sangamon Coal Co.'s mine, North Grand Avenue, East Springfield. The indicated purchase price was $270,000. The Sangamon company's mine has been considered one of the best in the Springfield district.

Operations at Valier mine, Valier, have been resumed after a shutdown of several weeks.

The West Virginia mine, at Herrin, has been closed down since Oct. 8. This mine is one of several which entered into the recent consolidation of six mines near Herrin by the Standard Coal & Coke Corporation. The West Virginia mine was owned by Wallace Brothers.

The East Mine, Lincoln, which had been closed since early last spring, resumed operation Oct. 26. It is believed that full production will go forward through the winter.

## INDIANA

Joseph Stephenson, 58 years old, superintendent of the Little Betty mine, near Linton, and his son, William Stephenson, 28 years old, were killed Oct. 20 in a gas explosion in the mine. A gas pocket was ignited. The body of the son was recovered by mine rescuing crews an hour following the explosion, but the body of the father was not found until three hours later. The two men were inspecting the mine when they came on the pocket of gas, the explosion being set off by the carbide lamps carried by them.

After an idleness of more than two and one-half years, the American mine No. 2, in the Bicknell field, the second largest coal mine in Indiana, will be opened soon. The mine is capable of producing 6,000 tons of coal daily and employs 600 men. Nine other mines in the Bicknell field have been idle almost as long as the American mine.

The Wasson-Pocahontas Coal Co., of Vincennes, has filed a preliminary certificate of dissolution.

## IOWA

John Ruth, of Hurley, S. D., has purchased the Lockwood coal mine, at Carbon, and will operate it.

## KENTUCKY

The Chesapeake & Ohio R.R. on Oct. 23 asked the Interstate Commerce Commission for authority to purchase three miles of coal railroad operating between Dinwood and Lackey, in eastern Kentucky, for $106,143.

Tim B. McAuliffe, of Louisville, who formerly operated the McAuliffe Coal Co., with a mine in western Kentucky and jobbing office at Louisville, has returned to the coal trade. He is now with the Louisville office of the Nashville Coal Co., after some months in advertising work. McAuliffe at one time was with the Southwestern Fuel Co. and also connected with the Southern Coal Co.

K. U. Meguire, of the Harlan Coal Co., Louisville, jobber and operator, was one of the incorporators of the Morris Plan Industrial Bank, which is getting ready to start operations in Louisville soon.

A. H. Stepp has become manager of sales for the Hawley-McIsaac Coal Co., Madisonville, a concern with several strip as well as some shaft mine operations. Formerly he was in charge of the Louisville office of the Southern Coal Co., going to Madisonville some months ago.

Tom Finn, formerly with the Southern Coal Co., Memphis, who has been selling out of the Louisville office for some time, has been sent to Nashville, Tenn., as manager of the sales office at that point.

The Banner Fork mines of Henry Ford, at Kentenia are down again, according to Abner Lunsford, who was in Cincinnati recently. About six weeks ago the 16-ft. axle of the drum snapped. As nothing of this kind was kept in stock the mine had to shut down for a couple of weeks until a new axle was obtained. When the new one was set in position it apparently worked excellently for a short time when it too let go. The break came in almost the same relative place as the former one snapped.

After having disposed of his holding in the mines at Darbyville, Va., in which he and Ralph Bartlit, of Cincinnati, were interested, Charles Thompson, long identified with mines and mining in southeastern Kentucky, announced that he had accepted a position as general manager for the group of Harlan mines controlled by Judge Hall, of Harlan, which include the Three Point Mining Co., the Ellis Fork Mining Co. and the Lena Rue Coal Co.

J. J. Fluck, formerly chief engineer of the Elkhorn Piney Coal Mining Co., and later superintendent of the Weeksbury mines of that company, has accepted a position with the Youngstown Sheet & Tube Co. as superintendent of the Dehue (W. Va.) mines, vice L. E. Scholl, who resigned recently.

## MINNESOTA

The new briquet plant of the Berwind Fuel Co. at Superior is now operating at full capacity of 800 tons daily. The company is making its product from Pocahontas screenings. The Stott Briquet Co.'s plant, also at Superior, is operating at capacity. Its product is made from anthracite dust.

The Zenith Furnace Co., at Duluth, is looking forward to a record season in production and sales of domestic coke on this market. The company accumulated a substantial supply in anticipation of a spurt in demand for it as an anthracite substitute. Shipments of its coke have been made over a wider area so far this season.

Both St. Paul and Minneapolis are taking up the strict enforcement of the smoke nuisance ordinances, the city officials feeling that the emergencies which caused a letup in their enforcement have passed.

## MISSOURI

The Busy Bee Mine, at Huntsville, is still idle, though it is reported that several of its miners have bought capital stock in the company in order that it might be placed in operation to give employment. The owners proposed leasing the mine to the miners who had been employed there. The miners conferred with Arch Helm, district president of the United Mine Workers, about the lease, and while Mr. Helm approved the lease, he said he could not approve the working conditions, according to George Hepple, secretary of the miners.

A deal has been consummated between the owners of Mine No. 11 at Higbee and former employees of the shaft for the purchase of the property. It is understood that more than one hundred shares of stock were sold in the mine. The shares were $200 each. The name Moniteau Coal Co. has been chosen. Officers are as follows: James Rankin, president; Fred Laight, vice-president; A. E. Humphrey, secretary-treasurer. These with Joe Bradley, Mike Marietta, Charles Moore and Charles Deering constitute the board of directors.

## OHIO

Suits aggregating $20,000 for wages have been filed by 281 miners of the Franklin mine of the Cleveland & Western Coal Co., at Stewartsville. A separate petition was filed in each case with Justice Louis M. Shores. Recently the coal company filed suits in common pleas court against the same miners for $10,000 damages. The company alleges the men had several times closed the mine by illegal strikes, causing heavy monetary loss.

Upon petition of John E. Jones, who claims to be a creditor of the company to the extent of $63,000, the Athens National Bank has been named receiver for the Canaan Coal Co., which has several mines near Athens. The property of the Canaan Coal Co. is roughly valued at $500,000. The mines have been closed for six months and one of the mines was partly wrecked by a gas explosion recently.

The Capitol Motors Co., owner of the building where the defunct Southern Ohio Coal Exchange had its offices, in Columbus, has brought suit against ninety-three former coal companies and individuals to collect rent in the sum of $5,440. The operators' association is now in the hands of a receiver. The suit is brought to collect against the former members individually.

Within ten days after the Hughes Coal Co., Cincinnati, went into the hands of a receiver trustee in bankruptcy John Glaser was able to announce the payment of 7 per cent in cash to the creditors. It is understood that C. H. Hughes, chief stockholder of the company, has agreed to give notes to those holding claims so that the firm will pay out 100c. on the dollar. Most of the creditors have agreed to this and it is expected that the firm's affairs will be wound up in short order.

So bad was the jam of cars during the week of Oct. 18 between the Cincinnati gateway and the unloading docks at the lake ports that J. M. Dewberry, head of the coal and coke department of the Louisville & Nashville Ry., wrote to Cincinnati distributors asking that all coal that could be routed through the Louisville gateway be headed in that direction.

A petit jury in U. S. District Court at Cincinnati on Oct. 27 returned a verdict for the plaintiffs in the breach of contract suit of Edward F. Gerber et al. as F. & R. Coal Co., Pittsburgh, Pa., vs. the Borderland Coal Sales Co., Cincinnati. The amount of the verdict is $10,263.13. This was the second trial of this case, the first having resulted in a verdict for the defendant for $27,177 on a counterclaim. This was set aside by U. S. Circuit Court of Appeals. The amount sought by the defendant in its counterclaim was admitted to be due by the plaintiffs at the second trial and is taken into account in the verdict given in their favor.

An electric power deal between the Southern Ohio Electric Co and the United Light & Power Co. has been closed whereby power plant development in the Athens section of the Hocking Valley will be much increased. The United Light & Power Co., a large concern operating quite a few power plants in the Middle West, has taken over the Southern Ohio Electric Co., which operated a large power plant at Floodwood. The two power companies will join in serving all of the southern Ohio mining district. The production of coal for the generation of power will be largely increased with the building of new units to the plant.

Cincinnati wholesalers are beginning to see the advantages to technical enlightenment in fuel engineering. Two are enrolled in the combustion and steam engineering classes of the University of Cincinnati in the persons of Armour Sizer and Elmer Wierhake.

Four large mines in the Baily Run field which were put out of commission recently by the burning out of a high-tension power line have been placed in operation, giving employment to about 800 miners.

Owners of small mines in the vicinity of Athens have started work to supply domestic users in nearby districts.

**Towboat "Hecla" of the Hillman Transportation Co. Operating on the Monongahela River**

A number of the mines of the Hillman Coal & Coke Co. are bounded on one side by the Monongahela River, on the banks of which the tipples are located. Consequently the coal may be shipped by water or by rail. Here is one of the stern-wheel steamboats that tow barges of Hillman coal downstream.

Farmers are driving to the mines for their winter's supply and there is quite a good deal of activity reported in a small way.

Walter Fassig, president of the Ajax Block Coal Co., of Columbus, has gone to Miami, Fla., to engage in the real estate business, although he retains his connection with the coal company. He has joined with a former Columbus man who has made quite a success in Florida realty.

## OKLAHOMA

The Stigler Coal Co., Muskogee, will install a steam shovel for strip mining. W. B. Badger is secretary of the company.

Operators deny that "strike breakers" are being brought from Mexico or any other place to work in the coal mines in the Henryetta field. The denials were made after C. E. B. Cutler, attorney for the union miners, had announced that an appeal would be made to William Green, president of the American Federation of Labor, to protest to President Calles of Mexico against the sending of Mexican laborers into the coal fields. Cutler exhibited a telegram which he is said to have received from the Mexican consul at Oklahoma City, which said that it had been reported to him that Mexican laborers were being imported from Mexico to work in the coal fields.

A report from Muskogee, state headquarters of the United Mine Workers of District 21, says that M. R. Henson, secretary of the district organization, was deposed by the district executive board following an extended hearing on charges made against him recently. Henson was accused of insubordination by William Dalrymple, president of the district organization, who maintains that Henson refused to sign an expense check. The check, according to Henson, was made out to Dalrymple's stenographer and called for $6 a day for hotel expenses, which should have been only $1.50. Counter charge of misuse of the union's funds has been filed by Henson, the report says. Neither Henson nor Dalrymple would make any statement other than "it is not over yet."

While drilling for oil on a location near the town of Tonkawa, in the northern part of Oklahoma, the drilling crew struck a coal seam 13 ft. thick at a depth of slightly more than 4,000 ft., it has been reported. It is believed that the coal may be of value later, when mining at that level can be made to pay in this state.

## PENNSYLVANIA

Fred J. Dunham and William W. Brighton recently purchased from James R. Somerville Reading No. 2 mine in the C seam of bituminous coal. The mine is located on the line of the Pittsburgh & Susquehanna R.R., which connects with the New York Central at Philipsburg. The coal is considered high grade both for steam and domestic use. The firm will be known in the trade as F. J. Dunham & Co.

**Harry E. Kinloch**

Mr. Kinloch, age 71, who until Jan. 1, 1925, was general manager of the Valley Camp Coal Co., died in Parnassus, Pa., on Oct. 14, as published in *Coal Age*, Oct. 22. Mr. Kinloch started work in the peat bogs of England at the age of nine.

Pennsylvania Coal & Coke Co. and subsidiaries report a September deficit of $18,800 after ordinary taxes, depreciation and depletion, but before federal taxes, against a deficit of $50,777 in September, 1924. Deficit for the quarter ended Sept. 30 was $108,440, against a deficit of $147,547 in the third quarter of the previous year. In the first nine months of 1925 the deficit totaled $457,533, comparing with a deficit of $288,655 in same period of 1924.

The Lehigh Valley Coal Co. recently started to blow down the sides of mine caves in the Pottsville region as a precaution against someone being injured or killed while illegally digging coal during the anthracite suspension.

The Benjamin washery at Eynon, owned by Frank P. Benjamin, of Scranton, was destroyed by fire on Oct. 23. The washery was built on the site of the old Raymond breaker, which was wiped out by flames several years ago. The washery had not been operated for months preceding the fire. The owner is at a loss to explain how the blaze started.

Elmer Brunke, of Buffalo, authorized by the councilmen of that city to purchase $10,000 worth of hard coal to help relieve the shortage in that city, visited Scranton recently in quest of supply only to have his appeal turned down. The local agent for the D., L. & W. Coal Sales Co. directed the Buffalo man to take his request to the head offices in New York City.

H. C. Frick Coke Co. continues to increase its number of operating ovens. During the week orders were received to put the Whitney and Hostetter plants in full operation. These plants will work six days a week. Additional ovens were ordered fired at Marguerite and Mammoth. The Colorado Coal & Coke Co. interests have fired up more ovens in the lower "Yough" valley district. About 150 more men were put on. The plant at Clarissa recently was put to work and 70 ovens will be fired. Fifty are fired at the old Rainey plant at Fort Hill. The Washington Coal & Coke Co. has put into operation between 50 and 60 more ovens at its Star Junction plant.

Members of a mining school at Wilkes-Barre, Pa., recently saw a mechanical loader demonstrated in hard coal by its inventor, Isaac Hochreiter, of Luzerne. The front end of the loader was elevated and then the rear end, to show that it can be operated at any pitch. The inventor said the trough of a normal size loader of this type is 5 ft. wide and that it can be operated on each side of its track to clear a space 14 ft. in width. This permits the working of a face and then a return to clear up the sides of a tunnel or slope. Mr. Hochreiter said the machine may be operated by one man and that the machine and six men would load at least 30 cars a day. The loader moves forward automatically over any character of surface and cleans up as it travels, conveying débris, rock or coal to the car in the rear. A full-sized machine, the inventor said, is now being constructed for one of the operations near Scranton.

## TENNESSEE

Thirty-six hours after the arrival in Rockwood of Robert M. Lambie, chief of the West Virginia Department of Mines, the bodies of eight men who had been imprisoned in the mine of the Roane Iron Co. since July 1, were recovered. Mr. Lambie brought a picked crew of men from West Virginia, who unsealed the mine, which has been closed for months because of a raging fire and, equipped with oxygen helmets, went into the recesses of the mine, wrapped the bodies in canvas and brought them to the surface. Immediately after the bodies were brought to the surface the passages were again sealed to prevent the fire from spreading. Mr. Lambie's services were loaned on the order of Governor Howard Gore, of West Virginia, at the request of the U. S. Bureau of Mines.

## TEXAS

Texas Pacific Coal & Oil Co. reports for the quarter ended Sept. 30 net income of $584,890, after expenses and deductions, but before depreciation and depletion. This compares with $588,254 in the preceding quarter and $360,073 in the third quarter of 1924. Net income for the first nine months of 1925 was $1,666,270 before depreciation and depletion, comparing with $1,627,931 in the same period of 1924.

## UTAH

The Utah Railway Co. has petitioned the State Public Utilities Commission to approve a contract which it has made to purchase the National Coal R.R. line now in course of construction into the Gordon Creek coal properties in Carbon County, Utah's chief coal producing center. The line in question extends from a connection with the Utah Ry. about 8.9 miles up Gorley Creek and the north fork of Gorley Creek. Its completion is expected during the present year. It will serve the properties of the Great Western Coal Mines Co., the Consumers' Mutual Coal Co., the National Coal Co., the Union Coal Co. and the Sweet Coal Co.

The State Farm Bureau and the Salt Lake City Chamber of Commerce have just launched a campaign against fake stock operators. It is estimated that last year approximately $500,000 in worthless securities was sold in one county alone and that the total loss in the state would run into several millions of dollars. While no stocks are specified, it is known that promoters of mutual coal companies have been most active in the county in which it is estimated the $500,000 was lost last year. The Bankers' Association is interested in the move and a list of points to consider when stock is offered are given. It is announced that a vigilance committee will be formed in each county. Farmers appear to be among the greatest sufferers.

## WASHINGTON

The Washington Union Coal Co., Tono, is installing a new electric hoist inside the mine and an electric pump. The hoist will accommodate 12 cars a trip and the pump will have a capacity of 500 gallons a minute. The concrete foundation for this new equipment has been laid and the work will be completed this week. Alec Turnbull, master mechanic, is in charge of the operations.

## WEST VIRGINIA

Brooks S. Hutchinson, of Fairmont, vice-president of the West Virginia Coal & Coke Co., recently purchased the New Annapolis Hotel, 12th and H Sts., N. W., Washington, D. C., for $2,500,000. The hotel is 11 stories high and contains 400 rooms.

A number of operators were in Pittsburgh, Pa., last week in the interest of the West Virginia merger which fell through in New York recently. It is reported that Cleveland and Chicago banking interests probably will finance the project. It is said that $12,000,000 is involved.

Recently the State Department of Mines equipped the rescue stations at Charleston, Kilsyth, Matoaka, Welch, Williamson, Logan, Morgantown, Fairmont, Wheeling and Elkins with trucks, which are specially designed to convey the injured to hospitals or their homes, after mine fires or explosions.

Coal mines in the 12½ counties of northern West Virginia (Fairmont region) produced 572,500 net tons of coal in the week ended Oct. 24, compared to 568,200 tons the previous week, to 440,150 tons in the corresponding week of 1924 and to 523,450 tons in the corresponding week of 1923.

The Island Creek Coal Co. reports net profit for the quarter ended Sept. 30 of $618,335 after all deductions, against $478,900 in the corresponding period last year. The net profit for the September quarter equaled $4.57 a share on the 118,801 shares of $100 par value common stock, after allowing for preferred dividends. The quarter's earnings last year were $3.40 a share. For the nine months ended Sept. 30 net profit of $1,555,376, after preferred dividends, was equal to $11.20 a share, against $14.23 a share last year.

The Gilbert-Davis Coal Co. has purchased the property of the Randall Coal Co. and the Jarvis Coal Co. in Scott's Run, near Morgantown, and will be known as mine No. 6. It has been leased by R. A. and George Poland, who operated the Black mine, which will be operated on a co-operative basis, it is reported.

The Fordson Coal Co., owned by the Henry Ford interests, has contracted with the Fairmont Mining Machinery Co. for a $55,000 steel headhouse and a 1,300 ft. rope and button conveyor at its Nuttallburg mine, in Fayette County. The contract calls for installation by March 1.

Harry A. Cochran, of Baltimore, coal traffic manager of the Baltimore & Ohio R.R., who was a business visitor to Fairmont last week, reports that during September the B. & O. moved 3,250,000 net tons of coal on its system, exclusive of company fuel, obtained for its own consumption. It was one of the biggest months in the history of the B. & O.

J. W. Bischoff, of Elkins, formerly general superintendent of the West Virginia Coal & Coke Co., was recently made superintendent of the Parker Run mine of the Fairmont & Cleveland Coal Co., the largest single tipple mine in northern West Virginia. He succeeds Charles E. Gaskill.

## WYOMING

W. L. Kidneigh, for several years past connected with Rock Springs offices of the Megeath Coal Co., of Omaha, has resigned and will go to California, where he is a partner in the Aladdin Sales Co., of San Francisco. He is succeeded by H. W. Moran, of the Omaha offices of the Megeath company.

Mines in the Rock Springs district would be working full time at present if sufficient coal cars were available. Many of the mines of the Union Pacific Coal Co. lost a day during the week ending Oct. 10 because of a car shortage. The increased freight business of the U. P. R.R. is creating a greater demand for the coal of this district. One day recently this road handled 95 freight trains through Rock Springs.

The Megeath Coal Co., whose headquarters are at Omaha, has increased the output at its Rock Springs mine within the last six months to 700 tons daily, an increase of almost 100 per cent. Since William Redshaw, for several years superintendent of the U. P. mines at Winton, was made superintendent in the spring of 1925, much improvement and safety work has been accomplished.

## CANADA

Officials of the Dominion Coal Co. state that the outlook for the Nova Scotia coal industry is fairly good for the next four months. An order is expected from the United States for 50,000 tons per month and if it materializes the Cape Breton collieries of the British Empire Steel Corporation will be kept busy until the end of February. The number of miners who have recently left the United Mine Workers is about 300 in addition to 700 who broke away from the union in Pictou County.

Production of coke in Canada during September totaled 102,882 tons, as compared with 95,397 tons in August, an increase of 7 per cent. The gain was largely due to the increased production in Nova Scotia since the settlement of the strike. Ontario ovens produced 53,533 tons or 52 per cent of the total Canadian output. The amount of imported bituminous coal used for coke making was 109,015 tons, as compared with 115,683 tons in August, and the amount of Canadian coal used rose from 26,379 in August to 48,468 tons in September. Imports of coke totaled 78,731 tons as compared with 70,000 tons in August. Exports were 4,268 tons as against 2,007 tons.

The Canmore Coal Co., of Alberta, is erecting a new briquetting plant, which when completed will cost in the neighborhood of $100,000. The building is being erected by the coal company, the machinery being supplied under contract by Komarek-Greaves Co., Chicago. The plant will be ready for operation about the middle of November.

Coal output in British Columbia during the first nine months of this year was 327,717 tons greater than for the corresponding period of 1924, according to a statement by the provincial Department of Mines. Output by districts during the first nine months of 1925 was: Crows Nest Pass, 653,752 tons; Nicola-Princeton, 116,898 tons; Vancouver Island, 1,006,368 tons, a total of 1,777,018 tons. The gain is due to increased production in the Crows Nest Pass field, which for more than six months of 1924 was closed by a strike.

# Traffic

### New Coke Rates on B. R. & P. Are Approved

The New York Public Service Commission has approved new rates on the Buffalo, Rochester & Pittsburgh R.R. on coke and coke breeze, to main line stations Buffalo to Barnard inclusive, $1.39 per net ton; Buffalo to Chace, Perry and Silver Lake, $1.89; effective Oct. 17. The commission also has approved the establishment of joint rates by the Lehigh Valley, Geneva to B. R. & P. stations, Garbutt, Maplewood, Mumford, Rochester and Scottsville, $1.51; effective Oct. 21.

## Coming Meetings

**Illinois Mining Institute.** Fall meeting, Nov. 6 and 7 at West Frankfort, Ill. Secretary, Frank F. Tirre, St. Louis, Mo.

**Harlan County Coal Operators' Association.** Annual meeting, Nov. 18, at Harlan, Ky. Secretary, E. R. Clayton, Harlan, Ky.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering.** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

**American Mining Congress.** Twenty-eighth annual convention, Dec. 9-11, Washington, D. C. Secretary, J. F. Callbreath, Munsey Bldg., Washington, D. C.

## New Companies

**The Uniflow Stoker Co.**, Piqua, Ohio, has been chartered with an authorized capital of $15,000 to manufacture and deal in mechanical stokers. Incorporators are: Walter E. Turner, Fred A. Shane, Walter F. Henne, August Clouse and Leslie T. Hunnicutt.

**The Magnolia Coal Mining Co.** of Russellville, Ark., with a capital of $25,000, has been incorporated by J. L. Davis, T. A. Johnston, E. G. Butler, Essie Lee Davis, T. G. Johnston and J. H. A. Baker.

**The Moniteau Coal Co.**, Higbee, Mo., has been incorporated with a capital of $40,000 and will carry on a general mining business. The incorporators are James Rankin, Joe Bradley, Mike Marietta, Fred R. Laight and Chas. B. Moore.

**The L. H. & W. Coal Co.**, Henderson, Ky., with a capital of $28,000, has been incorporated by U. M. Gager and Harry B. Jennings.

## Recent Patents

**Method for Separating Materials of Different Specific Gravities;** 1,545,636. Thomas M. Chance, Philadelphia, Pa. July 14, 1925. Filed Oct. 14, 1921; serial No. 507,605.

**Automatic Trapdoor for Mines;** 1,645,-274. Ren Williams, West Frankfort, Ill. July 14, 1925. Filed Sept. 27, 1924; serial No. 740,297.

**Storage Plant for Coal;** 1,547,290. Robert H. Beaumont, Radnor, Pa., assignor to R. H. Beaumont Co., Philadelphia, Pa. July 28, 1925. Filed Nov. 15, 1923; serial No. 674,841.

**Apparatus for Crushing Coal;** 1,547,491. Emil Barthelmess, Dusseldorf-Oberkassel, Germany. July 28, 1925. Filed Sept. 13, 1924; serial No. 737,572.

## Obituary

**Walter D. Hunt,** 36 years old, a member of the firm of Hunt Brothers, coal operators at Brazil, Ind., died recently at his home following an illness of two weeks of influenza. He had been a resident of Brazil for a number of years and had been engaged in the coal business for the last ten years. He is survived by a widow, a son and a daughter.

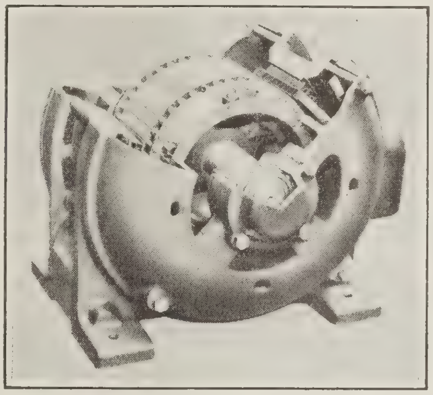
The death is announced of **Edward A. McConn**, at the home of his niece, Mrs. G. J. Coy, of Baltimore. Mr. McConn was formerly associated with the H. C. Frick Coke Co. of Scottdale, Pa. He was 81 years old and for the past forty years had been a resident of Scottdale.

**Milton Mayo**, brother of the late John C. C. Mayo, of Paintsville, Ky., the man responsible for the big Elkhorn operations of the Consolidation Coal Co., was found drowned in 6 in. of water, in a small stream near his home on Oct. 12. The deceased was partly paralyzed, and indications are that he fell into the stream, and was unable to help himself. Milton Mayo was not wealthy, the bulk of the vast fortune of his brother, John Mayo, having been left to his widow and children. A brother, Robert Mayo, and a sister, Mrs. Fred Atkinson, of Paintsville, survive.

# New Equipment

## Heavy Roller Bearings Adapt Motor to Severe Duty

After two years of experimentation and development the Allis-Chalmers Manufacturing Co., of Milwaukee, Wis., has placed on the market a line of roller bearing induction motors of the type shown in the accompanying illustration. These are of both the squirrel cage and slip ring varieties and are built for both 25- and 60-cycle current. They are, of course, in addition to the sleeve bearing motors which this firm has marketed for years.



**Sectionalized View of Motor**

Tapered roller bearings upon either end of the armature shaft take both radial and end thrusts readily. Grease packing in these journals renders attention unnecessary except at long intervals.

In the construction of these motors the Timken taper roller bearing has been selected because this type is capable of enduring heavy and continuous radial and end thrusts. It is, therefore, particularly adapted to withstand heavy service at high speeds. Because of its rolling action this bearing has practically no wear and the factory-adjusted air gap is maintained indefinitely, with little or no possibility of the rotor dragging on the stator.

Grease is employed as a lubricant and the bearing inclosures are made grease tight, effectively excluding grit and dirt that might cause undue wear. With these provisions both motor and bearings require only infrequent attention, and both are well adapted to installation in dusty or dirty places. A light press fit for the cone and cup of the bearing is sufficient to hold these parts in place, no nuts or other locking devices being required. Bearings may be removed easily when necessary.

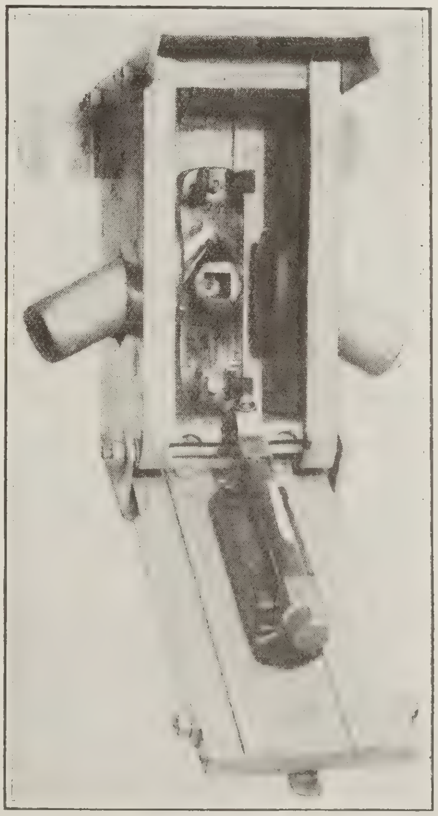
In addition to the bearings, other details of design have been carefully considered. Thus the frame has been made of steel casting with integral feet. The coils of the various windings are thoroughly insulated and baked in a waterproof varnish. Ventilation openings in the housing and frame are so placed in vertical planes that falling objects cannot enter the machine. The overall length of this motor is appreciably less than that of sleeve bearing machines of like capacity admirably adapting it to close-quarter installations.

It will be readily apparent that this motor is of rugged design intended to meet successfully and withstand conditions of operation that are unusually severe. It is now being built in all sizes up to 200 hp. for various voltages of both 25- and 60-cycle current.

## Fuse Box Prevents Contact With Live Parts

Recent improvements in the design of fuse boxes for distribution transformers, so that it becomes impossible for the operator when re-fusing the box to come in contact with current-carrying parts have been made by the Westinghouse, Electric & Manufacturing Co.

The new OD safety-first fuse box is of this type. It consists of a heavy, compact, moisture-proof box, fitted with special mounting brackets that permit it to be installed at the maximum distance below the transmission wires. The door of the box is hinged at the bottom and is interlocked so that it can be removed or replaced only when the fuse tube is at a safe distance



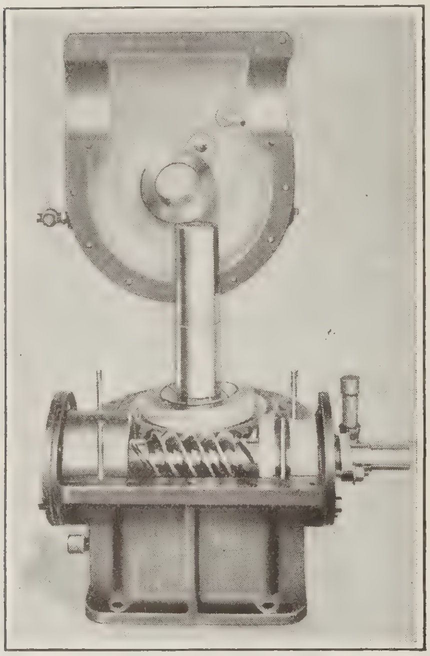
**Fuse Is Automatically Taken Off Line**

The work of renewing the fuse element in this box is made safe by taking the fuse out of the circuit when the door is opened.

from the line contact. A screwdriver to clamp the fuse link in the new tube is the only tool needed when re-fusing. To insert a new fuse the operator opens the door of the box which action disconnects the fuse and insulates it from the line. He then lifts off the door, inserts the refill in the tube, replaces and closes the door, and the box is again ready for operation.

## Oil Forced to Upper Bearing In Vertical Gear

Occasionally in and about the mines application is found for vertical worm reduction gears. Such a device has recently been brought out by the DeLaval Steam Turbine Co., of Trenton, N. J. This gear, shown in the accompanying illustration, has the advantage that where the driving shaft is horizontal, as is usually the case, the motor may be stowed away beside the machine instead of projecting out into aisle space.



**Reduction Gear with Cover Removed**

In this machine a cam on the worm gear actuates a pump that supplies oil to the upper main bearing. In the large high-speed units where immersion of the gears is disadvantageous this pump also lubricates the worm and gear surfaces.

This reducer is unique in that the upper bearing is supplied with oil by forced or positive lubrication, the pump feeding this oil being mounted within the casing and operated by a cam. Suitable filling and drainage openings, together with trycocks provide adequate means for the control of the oil level. About all the attention that this type of reduction gear requires is a periodic inspection of the oil level.

In the larger sizes of these reducers, where the speeds of operation are high, it is disadvantageous to immerse the gears in oil on account of the fluid friction. In such cases an oil pump lubricates not only the upper bearing but the worm and gear as well. This reduction is made in a variety of sizes and with shafts extending either up or down.

## Publications Received

**Mechanical Loading in Coal Mines**, by F. E. Cash and E. H. Johnson. Coal mining investigations under the auspices of the Carnegie Institute of Technology, U. S. Bureau of Mines and Advisory Board of Coal-Mine Operators and Engineers. Bulletin 17. Price $1. Pp. 113, 6 x 9 in.; illustrated. A discussion of the prime factors in the success of loading machines, including transportation and mining methods, descriptions of types of machines and actual operations, costs, advantages of mechanical loading and suggestions as to choice of a loader.

**Annual Report of Coal Mine Inspection and Mine Rescue Departments**, by Leon Besson, State Mine Inspector, Pittsburgh, Kan. Pp. 139; 6 x 9 in.; tables.

**Quantity of Wood Treated and Preservatives Used in the United States in 1924**, by R. K. Helphenstine, Jr., Forest Service, U. S. Department of Agriculture, in co-operation with the American Wood Preservers' Association. Pp. 36; 6 x 9 in.; tables and charts.

**The Coal Resources of Canada**, by M. J. Patton. Bulletin No. 50 of the Departments of History and Political and Economic Science in Queen's University, Kingston, Ont., Can. Pp. 19; 6 x 9 in.; tables.

**Geological Maps**, Their Study and Use, by A. Nelson. Colliery Guardian Co., Ltd., 30 Furnival Street, Holborn, London, E.C. 4, Eng. Pp. 108; 6 x 9 in.; illustrated. A handbook for mining students, geologists and surveyors.

**The Smoky River Coal Field**, by James McEvoy. Published by the Dominion Fuel Board in co-operation with the geological survey and Department of Mines, Ottawa, Can. Pp. 19; 6 x 9 in.; illustrated. Examination and comparison with the Kananaskis area.

**Annual Report of the Mines Branch of the Province of Alberta, Canada for 1924.** Pp. 372; 6x10 in.; tables.

**Screen Sizing of Coal, Ores and Other Minerals**, by E. A. Holbrook and Thomas Fraser. Bureau of Mines, Washington, D. C. Bulletin 234. Pp. 140; 6x9 in.; illustrated. Prepared under a co-operative agreement between the Bureau of Mines, State Geological Survey Division of Illinois and the Engineering Experiment Station of the University of Illinois. Outlines present practice in screening coal and supplements that information with basic points which must be considered by both designing and operating engineers.

**Mineral Resources of the United States in 1924.** (Summary Report). Introduction by Frank J. Katz; statistics assembled by Martha B. Clark, from data furnished by specialists of the Division of Mineral Resources, U. S. Geological Survey, Washington, D. C. Pp. 108; 6x9 in.; tables. The arrangement of this seventh annual preliminary summary of the country's mineral production is alphabetic by minerals and conforms to earlier issues.

**Sources of Limestone, Gypsum and Anhydrite for Dusting Coal Mines to Prevent Explosions**, by Oliver Bowles. Bureau of Mines, Washington, D. C. Bulletin 247. Pp. 70; 6x9 in.; illustrated. Covers causes, propagation and prevention of dust explosions, cost of dusting coal mines and availability of dusting materials.

**The Physiography of the Upper James River Basin in Virginia**, by Frank J. Wright. Virginia Geological Survey, University of Virginia, Charlottesville, Va. Bulletin XI. Pp. 67; 7x10 in.; illustrated. Covers results of a detailed study of the surface features of the central part of the Valley province of Virginia.

**Rewinding Small Motors**, by D. H. Braymer and A. C. Roe. McGraw-Hill Book Co., 370 Seventh Ave., New York City. Price $2.50. Pp. 247; 6x9 in., illustrated. Describes practical details of repair-shop practice with step-by-step procedure for rewinding all types and designs of fractional horsepower motors.

**The Coal Deposits and Coal Mining of Svalbard** (Spitzbergen and Bear Island), by Adolf Hoel. The Norwegian Academy of Arts and Sciences, Oslo, Norway. Vol. 1, No. 6. Pp. 92; 6 x 10½ in.; illustrated.

**Soil Survey of Tucker County, West Virginia**, by S. W. Phillips. U. S. Department of Agriculture, Bureau of Soils, in co-operation with the West Virginia Geological Survey. Pp. 36; 6 x 9 in.; illustrated.

## Association Activities

**The Cincinnati Coal Exchange** at a meeting on Oct. 20, shied at the idea of accepting associate members into that body. The Exchange is a subsidiary of the Chamber of Commerce and it was proposed that firms holding this membership might have other members of their company in as associate members. R. A. Colter and R. P. Gillham, old members of the trade, balked. The matter was referred back to a committee consisting of Ernie Howe, Fred Legg and George Kearns.

## Industrial Notes

Arrangements have been recently effected whereby the **Chicago Pneumatic Tool Co.** of New York has obtanied the right to manufacture and sell the Benz Diesel engine in the United States and Canada. This machine is of the solid injection, vertical multiple cylinder, four stroke cycle type. Like other Diesel engines it has no ignition device thus eliminating a rather delicate mechanism. It is provided with automatic regulation and the entire machine is simple both in construction and operation.

Any kind of petroleum or any of its derivatives can be utilized in this engine. Speed regulation is effected by means of a precision governor which controls the valve on the injection pump, the fuel admitted to the cylinder being thus in exact proportion to the load on the machine. Because of its simplicity and economy this engine should find application at many mines especially as a standby unit to be employed in case of failure of the regular power supply.

**Brown, Boveri & Co., Ltd.**, builders of electrical equipment at Baden, Switzerland, is about to establish an associate manufacturing company in the United States similar to those already created in Great Britain, Belgium, Holland, Norway, Finland, France, Germany, Austria, Denmark, Hungary, Italy, Sweden, Spain, Poland and Czechoslovakia. The company had part in the harnessing of the power of Niagara, electrified and aided in the construction of the Simplon Tunnel and built the first long-distance power-distribution system which runs between Lauffen and Frankfort and is said to be the first to be constructed anywhere in the world.

**The Uehling Instrument Co.**, of Paterson, N. J., recently appointed the Ernest E. Lee Co., 115 South Dearborn St., Chicago, as its representative in northern Illinois and northern Indiana in connection with the sale of $CO_2$ recorders, fuel waste meters and other power-plant instruments. The Coon De Visser Co., which has been representing the Uehling Instrument Co. for several years in Michigan, has just moved from 1772 West Lafayette Blvd. to 2051 West Lafayette Blvd., Detroit.

Edward D. Kilburn, vice-president and general manager of the Westinghouse Electric International Co., and Walter S. Rugg, general sales manager of the **Westinghouse Electric & Manufacturing Co.**, were named vice-presidents of the latter company at a recent meeting of the Board of Directors in New York. At the same time Richard B. Mellon, of Pittsburgh, President of the Mellon National Bank of that city and a brother of A. W. Mellon, Secretary of the U. S. Treasury, was elected a director of the company. Mr. Mellon will fill the vacancy caused by the death of William McConway, formerly president of the McConway & Torley Co. Messrs. Rugg and Kilburn will take charge, respectively, of the engineering and sales activities, according to announcement by Vice-President F. A. Merrick, general manager of the company. Vice-President H. D. Shute, aside from the direct operation of the sales department, which will be handled by Mr. Kilburn, will retain his direction of the broad commercial activities of the company, including especially customer relationships. Vice-President H. P. Davis, formerly in charge of engineering and manufacturing activities as applying to the strictly electrical portions of the company's business, will have direction over the entire manufacturing activities of the company and, in addition, will have direction of the general features of the radio business including broadcastings. Mr. Kilburn, in addition to his new appointment, will retain his duties as vice-president and general manager of the Westinghouse Electric International Co.

# COAL AGE

McGraw-Hill Company, Inc.
James H. McGraw, *President*
E. J. Mehren, *Vice-President*

Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. Dawson Hall
*Engineering Editor*

Volume 28 NEW YORK, NOVEMBER 12, 1925 Number 20

## By Way of Comparison

ALL OUR JUDGMENTS are comparative and until we have measured each fact with some other like it as a standard we can hardly discover its real value. It is, therefore, illuminating to state that the Census of Manufacturers for 1921 shows that in Pennsylvania the wage earners in the anthracite industry received in the aggregate 28 per cent as much as the employees in manufacturing industries and yet there were only about 18 per cent as many anthracite employees as employees in manufacturing industries.

The average annual wage in all Pennsylvania manufacturing industries was $1,165 and at the anthracite mines, $1,780—a figure obtained by dividing the average number of men employed at the mines in 1921, as reported by the U. S. Geological Survey, into the total anthracite mines' payroll for the year as reported by the state Department of Internal Affairs. Since then wages in all manufacturing industries have declined, but the wages of anthracite mine workers have increased 10 per cent, so that with equally steady work the wage of the mine worker should be $1,958 per year. Overlooking the decrease in the wages of manufacturing employees, the present wage of the mine workers in the anthracite region can be calculated as exceeding that of manufacturing employees by 68 per cent. Compare these wages with those paid in 1923 in certain skilled industries of Pennsylvania:

| | |
|---|---|
| Newspapers and periodicals | $1,722 |
| Blast furnaces | 1,694 |
| Steel works and rolling mills | 1,623 |
| Railroad repair shops | 1,602 |
| Electrical apparatus and supplies | 1,337 |

To put the figures in less statistical form, the anthracite miner has been asking the average industrial worker to work five days for him in return for three days of his labor. The mine worker will not trade on an equal basis day for day with even such skilled men as newspapers employ, but wants 14 per cent more time. To supply and intensify this anomaly a strike is now instituted by the overpaid mine worker to get a 30-per cent increase.

## Ebb and Flow in Britain

IN THE UNITED STATES many mines have been closing and others opening during the past year. Unionism and non-unionism have something to do with this, but some of the mines which have closed have been mines of the high-cost type—old and ill developed—and others that have been opened have seemed good projects as they were new and could be well equipped.

In Great Britain a like tendency is quite manifest. A paper reports the fact that in the Rhymmny Valley of South Wales 10,000 men are idle, that Mardy Colliery is to be closed, that the Bargoed Colliery has been shut down for a month, that fourteen-day notices have been served on 4,000 miners at the Beynon pit, Blaina, the Prince of Wales, Abercarn, Cwmcarn, and at Nos. 2 and 4 mines, of D. Davis & Sons. The same paper records also the sinking of three new shafts in the Yorkshire fields, one at Thorne, another at Ollerton, and the third the Markham Colliery of the Stavely company. Depth does not hinder development. The coal in the Thorne mine will be nearly 2,800 ft. deep. What is necessary is a new operation not hampered by prior mistakes and ancient practices.

The closing of old mines and the opening of new would be even more rapid if the British were to open their hearts to the radical changes in equipment that decrease costs and make high wages possible. Perhaps if they did that they might forestall many radical political changes, unless, indeed, the revolutionary development had the contrary effect of creating a ferment of mind, where mines, grown out of date, had to be closed.

## The World's Darkest Job

NO INDUSTRY OPERATES as much in the dark as coal mining. Less light is provided and what illumination there is quite largely is lost in the light-absorbing walls of the mine. Thus coal mining is pursued in even deeper darkness than metal mining. It is a wonder that efforts have not been made to illuminate mines adequately by stationary lights along the headings and at the face. Speedy, energetic work can only be obtained where men can see what they are doing, and the right psychological attitude toward work is attained only when men have light to cheer them.

Fewer accidents will occur when more light is provided. Men stumble around in semi-darkness unable to see their work clearly. Where the reflector of the lamp is directed, an area is illumined, but all around is Stygian darkness. A few stationary lights properly placed would make conditions better but even then the mine would still be as badly illuminated as the average factory was one hundred years ago or more. There is safety in sight, there is speed also, certainty and comfort. Better light is coming. Men are not going to poke around in the dark forever with science so prodigal with new illuminating devices. The portable lamp is needed, and doubtless always will be needed, to throw the light in the immediate spot where the actual work is being done, but there is no reason why all the rest of the workings should be enshrouded in impenetrable darkness.

## Timbers as Rock-Dust Shelves

WHERE TIMBERS have been cleaned of coal dust and well covered on their upper surfaces with rock dust they furnish an excellent preventive against coal-dust explosions. A long row of timbers should be a continuous rock-dust barrier, ready at all times to put a curtain in the path of the advancing storm. A few boards might be run from timber to timber and loaded with rock dust as further precaution if any were needed. These could be of such length and so located that they would be easily displaced by a blast.

## Those Hot Bearings

WHAT INSURANCE MEN dread in coal breakers is that some of the bearings may heat and cause a fire. Every pedestal or block is a possible source of a conflagration. Prudence would dictate that as few bearings as possible be used, that bearings be provided that are not likely to heat and that speed reducers that run in oil and are inclosed be used instead of open gear trains. Where pump machinery is installed underground the same is true. A fire starting below ground at an unattended pump may do damage as great as a fire in a big breaker.

## Building for the Future

THE HOPE of Central Europe burns dimly because of the spirit of hatred existing between the many peoples. Oppression and wrong have done their fatal work. There is no willingness in any one to believe good of another, and the man of kindly, charitable attributes is suspected just as others are. It has taken a long time to create this ferment of mutual distrust, but Central Europe will be still longer overcoming it.

This object lesson needs to be considered in our country by employer and employee alike. Mutual faith cements peoples and makes for success. The United States has prospered on such an understanding. This mutual respect has been the basis of large production. Co-operation has been the keystone of our progress. A corporation or a union that overlooks the importance of friendliness in the conduct of its business will some day face a grievous condition. The blame may by each be transferred to the other, but what satisfaction is it to blame the other party if we can not allocate the misfortune as well as the blame.

Where parties are mutually exasperating, contact only increases the ill feeling. Where, however, the relationship is pleasant, continued contact makes the association of the parties the more binding. The company or the union that is always bound to get its rights to the last nickel and even strives at times to get much more will find in the end that what it strove for is a lesser conquest than that which a less contentious spirit would have achieved without effort.

## New Uses for Slack

SO LONG AS in the obtaining of screen coal enough slack is produced to flood the market, the smaller sizes will sell at a bargain. In the summer time the lack of market for domestic bituminous coal does at times even cause a shortage of small sizes, for some mines will not run at all if they cannot sell domestic coal or cannot obtain for run of mine prices that are all too high for those to pay who need only slack.

The cure for the situation is to increase the sale for fine sizes to such proportions that there will be a perennial shortage such as can be cured only by buying run of mine, crushing the coal at the steam plant and paying enough for such sizes to justify the production of coal for the steam market alone. That condition might have been here quite generally already had not notable economies in the use of steam coal been made, but any advance such as using coal for cooling purposes or for extensive sprinkling and irrigation of farms would make the demand for coal so great that the price paid for slack would have to be raised.

The supply will then be forthcoming only when such a price is paid for it as will make it profitable to run mines with the sole purpose of producing steam coal. Mines in some sections already do this, but it should be the case everywhere. It should be possible to run any mine as profitably producing run of mine as producing a screened product. Of course, the man who prepares his coal carefully will get a better price for it or he will produce run of mine only, but the real profits, after interest on the greater investment and after consideration of the greater cost of handling, billing and balancing a screened product are allowed, should be almost equal.

The research committee of the National Coal Association, therefore, is well justified in looking for additional uses for steam coal even though for the summer months only, when fine sizes are relatively scarce. The power companies probably will buy in the winter to stock for summer use unless the demand is so great that mines may have to be run on run of mine to supply the product in all seasons.

On the whole uncleaned slack if sold on its merits for stoker use and not on the basis of supply and demand should sell at a better price than uncleaned run of mine because it does not have to be crushed and is, probably, less likely to fire in storage. So much run of mine today, however, is screened, the lumps hand-picked and the whole reassembled that run of mine is cleaner than screenings and rightly commands a better price.

## Food from Coal

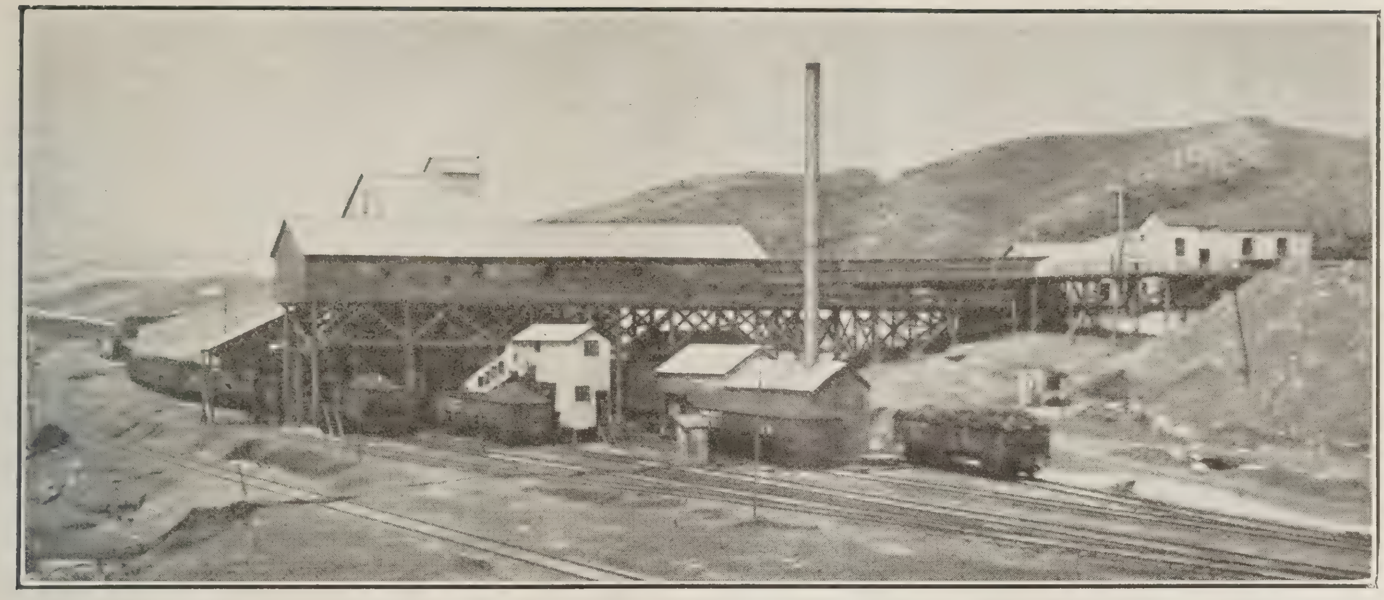
MODERN CIVILIZATION is demanding more and more nitrogen—that element which makes up nearly 80 per cent of our atmosphere but which cannot be utilized until it has been forced into chemical combination with some other element such as hydrogen. Ammonia, a combination of this kind, yields readily to chemical processes for conversion into fertilizer and other products so necessary in the arts of peace and war.

We have heard so much in the last few years of the association of water power and cheap fertilizer that it is a relief to learn of the plant which is being completed near Charleston, W. Va., for the production of 25 tons per day of ammonia from bituminous coal. That this plant is one of the Dupont industries makes it the more impressive as a forerunner of a new and extensive use for coal. Ammonia from coal; fertilizer from ammonia; and food from almost any soil when fertilized! What have the coming generations to worry about?

THIS IS HOW the miners' union lives up to its claim that it aids the development of new mining machinery: An Indiana operator started to test out a cutting-shooting-loading machine. Its operation required the firing of half-pound shots of permissible powder with men in the mine. The state law permits shots at least twice that size while men are underground. A union order to its members, however, required them to get out of the mine every time a charge was fired. Of course the machine got out instead. Who knows but that it might revolutionize mining—if it got a chance?

WITH COAL AND FORDS both shipped from the same Duluth dock, Northwest consumers may kick about tramp iron in their fuel only if there are no spotlights, self-starters and demountable rims on it.

IF LEWIS CALLS a soft-coal strike with no more cause than he now has, the public ought to call it a foul strike.



# Shaking Conveyor Eases Labor in Pitching Coal

## At Sublet, Wyo., a 3-Deg. Chute Along 100-Ft. Face Discharges to Another Inclined at 20 Deg. Which Delivers Into Cars with Little Breakage en Route

**By R. Dawson Hall**
Engineering Editor of *Coal Age*
New York City

When a bed of coal pitches at 20 deg. or thereabout it offers a difficult mining problem. It is so steep that it is hard to work by rooms driven on the strike. The steepness also makes it difficult and dangerous to work with cars on the pitch, because any contrivance, such as a McGinty, which causes the loaded cars to pull up the empties, is likely to dislodge the posts that hold it and cause frequent and dangerous runaways. Ropes break and brakes fail to hold. Consequently, any such method is rarely favored even with slopes far less steep.

On a sheet-iron chute inclined at 20 deg., some kinds of coal such as that mined at Sublet, Wyo., will not run without bucking, though that at Elkol in the same state will run freely on a somewhat lighter grade. Apparently the shape of the lumps is important. A coal that breaks into a slab-like form will slide less freely than one that is more or less cubical and still less freely than one that is rounded. With a slab-like coal on a 20-deg. grade a number of men have to aid the movement of the coal and it may well happen that more have to be employed to buck the coal than to mine it, for it is always uncertain just where the material will choke and need dislodging.

For this reason at Mine No. 5, Sublet, Wyo., a plant of the Kemmerer Coal Co., about nine miles north of Kemmerer, shaking chutes have been provided. It is remarkable how readily coal will move down a slight incline, on the level, or even on a slope inclined a few degrees uphill when resting on a chute having a differential motion. When the chute goes forward slowly, the coal moves with it but when the chute is jerked suddenly backward the coal fails to follow and retains the progress it has made on the forward stroke, thus awaiting the time when another forward movement of the chute will give it a further travel in the same direction.

In Sublet, the face chute is placed on a 3-deg. inclination, but it would work acceptably uphill. The coal does not roll or bounce forward even on the full pitch. It merely slumps or shuffles along at a speed dependent on the grade and the violence of the reciprocation. There is, in consequence, little dust, little degradation and remarkably little sound, far less of the last and probably less of the second than with an apron conveyor. I am not sure but what the same claim can be made for the first of these advantages, for the motion is so easy that dust should not be raised. The coal has a relatively silent passage, giving the shovelers an opportunity to hear the cracking of the face, roof or props should pressure manifest itself and give warning.

The shaking-chute working in Sublet lies between the Eleventh and Twelfth South Entries. Operations at that point can hardly be termed longwall mining for the face is only 100 ft. in length. The coal over that width of operation is entirely removed on the advance. The work is carried straight up the pitch but the face is not exactly at right angles to the direction of progress, but is inclined so as to lie at an angle which gives the face line and conveyor serving it an inclination equal to 3 deg. from left to right.

The face conveyor is placed about 5 ft. from the coal face and about five rows of props at 5 ft. centers (each prop in any row being 5 ft. from its fellow) are placed or retained back of the conveyor. However, as the face advances, other props are set, so that before the con-

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The headpiece is a general view of the No. 5 tipple at Sublet. It is in the mine under the hill at the right that shaking conveyors are being tried and among other things are doing much to increase the size of the product marketed even though the coal is shot off the solid.

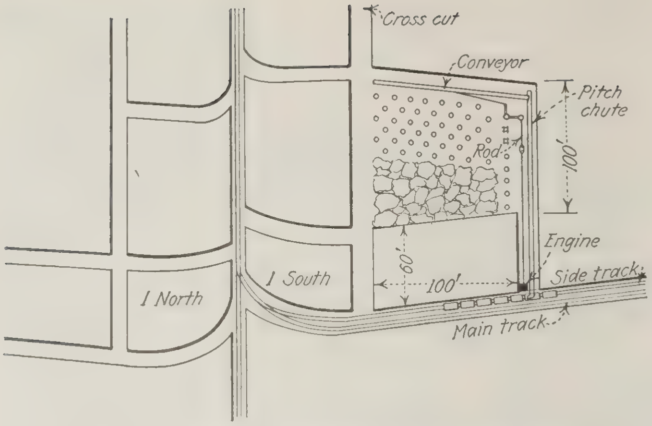


**Fig. 1—Plan of Conveyor in the Workings**

This shows the layout of the conveyors and mine passages. The face and heading chutes meet at an angle that is a little less than 90 deg. The slope of the face conveyor is small but the heading conveyor is laid on the full pitch of the coal bed.

veyor is moved forward, two rows of props lie between it and the face, without, however, interfering with the shoveling of coal.

At its right, or lower end the face conveyor discharges to a second conveyor that transports the coal to the entry. Delivery from one chute to the other is at almost a right angle, yet is accomplished without spillage. The coal travels rapidly down the second or pitch conveyor and at its end enters a curved section that makes delivery to the mine car below in a direction parallel to the track.

Each section of the heading chute is suspended by a pair of chains or heavy wires from a light crossbar or pipe extending between posts set up on either side of the conveyor. The face chute is similarly supported except that its upper end is carried by a pair of rollers running on a light structural frame about 2 ft. long laid directly on the floor. The forward stroke of both conveyors is imparted by the motor-driven engine and the return stroke by a heavy helical spring. The engine is linked to the heading chute by means of a simple connecting rod and to the face chute by a rope terminating in a turnbuckle adjustment, pinned to one arm of a bell crank, the other arm of which is connected by a rod to the conveyor chute. Amplitude of the face conveyor's oscillation is adjusted by changing the position of the connections to the two arms of the bell crank.

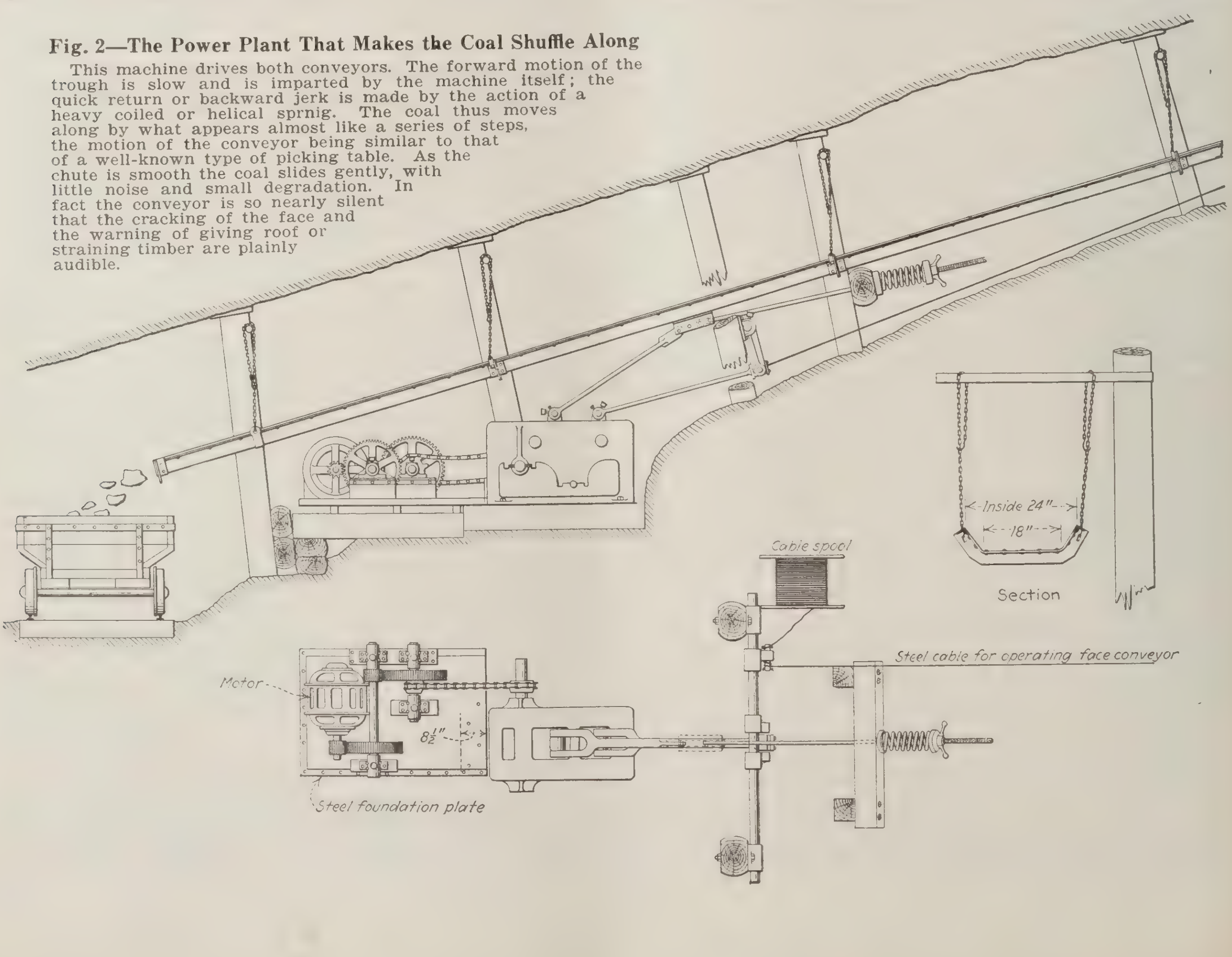
By the introduction of these shaking-chute methods, the work of mining is greatly concentrated making less development necessary, decreasing the area to be ventilated, superintended by foremen, inspected by firebosses, sprinkled with water or treated with dust. The pressure of the roof helps to break down the coal making it unnecessary to use more than about a quarter the quantity of powder that otherwise would be required. Undercutting is not necessary, nor is it practiced.

It is likely that in the future a greater length of working face will be provided, still further decreasing the costs for standing development, for ventilation, superintendence, inspection, sprinkling, rock dusting and shooting. The use of longwall makes possible a more nearly complete recovery, for without such a system and using room methods none of the pillars could be withdrawn.

The coal which is clean and about 5 ft. 6 in. thick has well defined and frequent cleats that make it easily mined whenever the advance is in a direction that takes

**Fig. 2—The Power Plant That Makes the Coal Shuffle Along**

This machine drives both conveyors. The forward motion of the trough is slow and is imparted by the machine itself; the quick return or backward jerk is made by the action of a heavy coiled or helical sprnig. The coal thus moves along by what appears almost like a series of steps, the motion of the conveyor being similar to that of a well-known type of picking table. As the chute is smooth the coal slides gently, with little noise and small degradation. In fact the conveyor is so nearly silent that the cracking of the face and the warning of giving roof or straining timber are plainly audible.



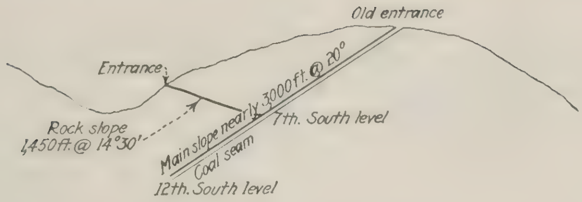


**Fig. 3—Sketch of Surface Contour**

When this mine was first opened the main slope followed the pitch of the coal bed. More recently a rock slope has been driven from tipple height in the valley to intercept the coal bed at about the Seventh Level.

advantage of those qualities. The roof for about 200 ft. above the coal is weak and falls readily when not supported, breaking into small fragments. Above that a 54-ft. seam of sandstone is found which probably interposes a greater resistance. Of all the overlying strata this measure alone shows marked strength. The cover above the coal is from 1,000 to 1,100 ft. in depth at the Twelfth South Level.

### Make New Rock Slope

Those who are disposed to take a pen and a table of sines to ascertain the depth should be informed that the former entrance to the mine and the outcrop of the seam are near the top of the hill on one side of the canyon. A new rock slope has been made from tipple height in the valley. This pitches at an angle of 14½ deg. and strikes the former slope on the hanging wall at about the Seventh Level as shown in the diagram, Fig. 3.

It has been found that the conveyor can be advanced the 10 ft. necessary for each move in about 30 min., so little time is lost in making the transfer. At the point where the pitch and face chutes meet, two unfilled chocks of square timber are used alongside the pitch conveyor resting on the shale bottom. These chocks can be recovered and they are carried forward as the face advances. So far all timbers have been pulled and reset without loss. The floor is so soft that it is necessary to put short blocks or sills under each prop.

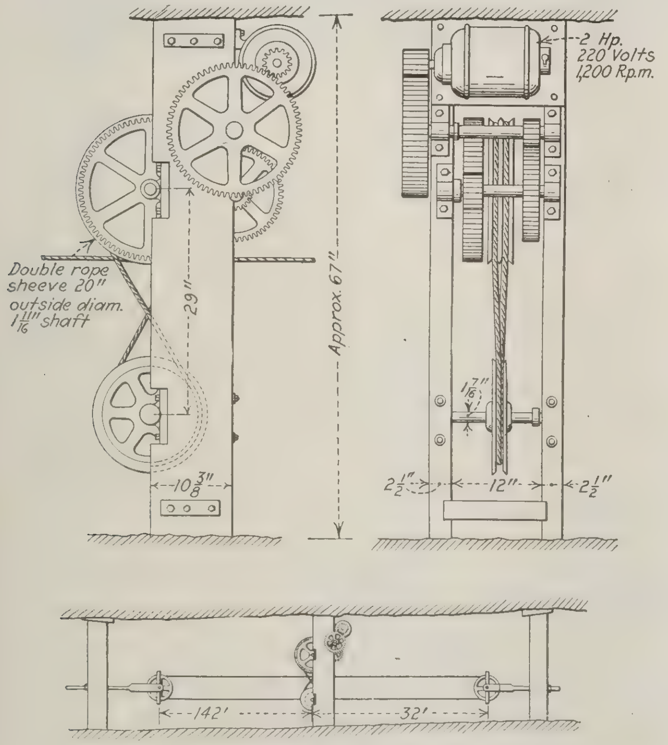


**Fig. 4—Home-Made Car Haul**

With this machine a 2 hp. motor is enabled to spot cars under the chute for loading where control would be difficult if some mechanical means were not employed.

The cars are spotted by a home-made car haul, details of which are given in one of the accompanying illustrations. This car haul as well as the chutes were improvised most skilfully at the shops of the company by Gomer Reese, general superintendent of the Kemmerer Coal Co., who used for that purpose material available around the mines.

Ten men mine and shovel the coal into the face conveyor and one handles the cars beneath the chutes. The entire force thus consists of eleven men. The output in eight hours is about 125 tons. This is not a noticeable saving in the number of men employed but the advantages are not so much in tonnage as in better coal and in a reduction of costs other than those of actual mining. However, the greater percentage of extraction is an important advantage.

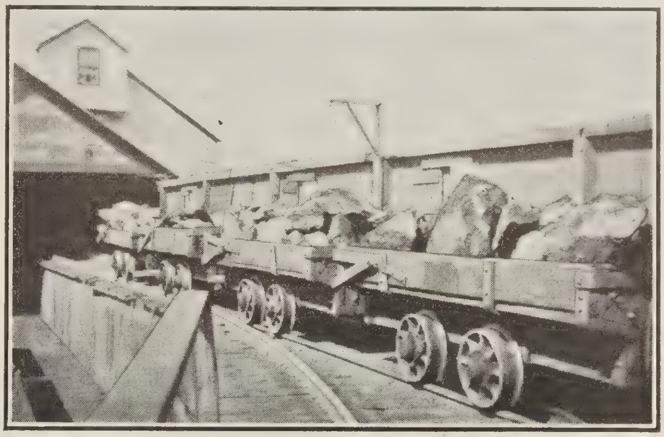


**Fig. 5—Conveyor Coal On the Tipple**

This illustration shows coal loaded by shaking conveyor, as it enters the tipple. The excellent size of the lumps is immediately noticeable. One of the chief advantages of long-face mining by shaking chute is the increased yield of lump coal and the small quantity of fine material and dust that is produced.

The cars are not large, their wheel gage being only 42 in. and their bottoms not being set down over the wheels. They hold about 1½ tons each as loaded by the chute and are not topped by hand. They weigh about 2,200 lb. empty. As the roadways have to be timbered heavily, it would not be advisable to make the cars much wider or higher. It would be necessary to cut heavily into the bottom shale to permit the entrance of a car of any greater height and as the bottom is quite soft and as the cover is heavy, any enlargement of the cross section of the roadway would be undesirable.

The small size of the car does not seem to be an important cause of delay at the chute as the cars can be rapidly and easily spotted for filling. However, if they were larger the same number of trips spotted under the chute would result in a larger production.

Because of the weakness of the floor it has not been feasible to use a scraper. It is feared that even if such a loader were run over a steel plate it would dislodge large quantities of bottom and spoil the product.

In order to make the mine safe against explosions the Eleventh South Level has been copiously rock dusted with pulverized limestone from the Devils Slide in Utah. Barrier troughs also have been installed near the main slope using the same dust. This appears to be dry and in excellent condition to make a curtain of inert material as soon as dislodged.

# First All-Electric Coal Strip Mine Is Saving Northern Pacific $700,000 a Year

By H. E. Stevens
Chief Engineer, Northern Pacific Ry., St. Paul, Minn.

THE FIRST COMPLETELY ELECTRIFIED coal strip pit in the country at Colstrip, Mont., is now busily justifying the Northern Pacific Ry.'s decision to mine coal in that isolated prairie locality. Forty miles of track had to be built to this stripping from the railway's main line at Forsyth, a power line 100 miles long had to be constructed from Billings and a community created at the site but these obstacles were overcome last winter. Big-scale operation under favorable stripping conditions in a huge acreage of 28-ft. coal has been under way for months and is reducing the cost of the railway's locomotive fuel at the rate of at least $700,000 a year.

In prospecting the coal resources tributary to its lines of railway the Northern Pacific, in 1913, made a general geological examination of the large semi-bituminous coal vein in south central Montana, known as "The Rosebud Field." From outcrops and other indications it was determined that this vein underlies an area of approximately 700 sq.mi. in Montana, and an unknown larger area in northern Wyoming, and that the full thickness of the vein was 28 ft. This thickness is maintained over the entire area, except where the bed is eroded or burned out. Fig. 1 shows the location and approximate outline of the field in Montana.

It was also found that the Rosebud vein was closely underlain over practically the entire area by the McKay vein; the parting between the two beds of coal varying from a few feet to 20 ft., indicating that the two measures were really a part of the same deposit.

No reliable estimates are available of the total volume of coal in the two veins, but from this outcrop survey it was calculated that there were at least six billion tons in the Rosebud vein in Montana alone.

Although the Northern Pacific, through its subsidiary, the Northwestern Improvement Co., owned and operated some good mines at Red Lodge, Mont., the possibility of developing a more economical locomotive fuel supply from the Rosebud field was such that in 1917 the chief engineer of the railway was directed to make a thorough exploration and report, covering methods and costs of reaching and opening the Rosebud field, and the comparative value of that coal as a locomotive fuel. This work was completed and report made in February, 1919; the exploration covering 15 sq.mi. in the northerly edge of the field near the head waters of Armell Creek, outlined in black in Fig. 1 on the opposite page.

A complete topographic survey was made of a tract of 15 sq.mi., and sufficient borings put down to determine top and bottom of the coal seam over the entire area, giving in effect a topographic map of the ground surface, top of the coal, and bottom of the coal. All coal having 100 ft. or less of overburden was classed as stripping tonnage, and coal lying at a greater depth than 100 ft. was classed as mining tonnage. The total for the 15 sq.mi. being as follows:

**Through Cut at Colstrip Made by Big Shovel Working Part Time as Dragline**

This was the beginning of the country's first all-electric coal strip pit. The cut was about 7,800 ft. long. Parallel cuts to this are now uncovering swiftly the 28-ft. bed of coal which is shot and loaded out into railroad cars run into the pit on a track laid directly on the coal berm. The pit is expected to save the Northern Pacific Ry. at least $700,000 a year on its locomotive fuel consumed on Montana divisions. This mine, excavated in the boundless prairie of south central Montana, is near the region made famous by the Custer massacre. The historic, Indian-fighting, Big Horn country is directly at the west of the Colstrip coal beds.

| | Tons |
|---|---|
| Stripping volume | 150,000,000 |
| Mining volume (50 per cent recovery) | 90,000,000 |
| Total | 240,000,000 |

The report recommended construction of a railroad up Armell Creek, and the opening of a strip field about 30 miles directly south of Forsyth, Mont.

Five shafts were sunk to and through the coal seam at various locations within the area explored, and from one of these about 400 tons of coal was mined and hauled across country to the railway tracks for actual test in locomotive firing. These tests demonstrated that this coal could be successfully used as locomotive fuel, although it would require some changes in the existing methods of drafting and firing.

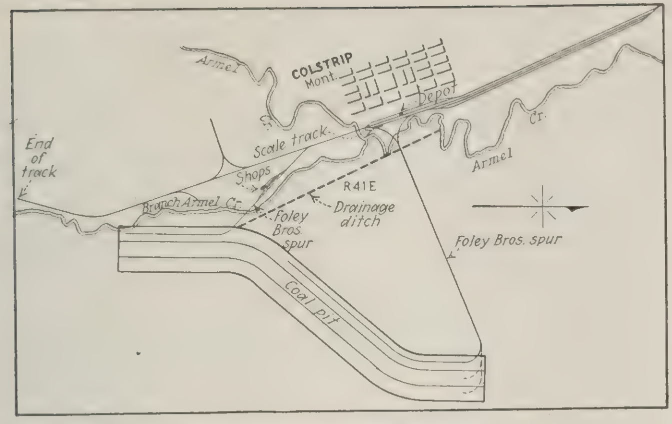


**Fig. 1—Layout at Colstrip**

From this drawing the position of the 8,000-ft. strip pit can be seen with relation to the newly-built village and railroad. The drawing indicates that one through cut has been made and loaded out and that the shovels are working on parallel cuts.

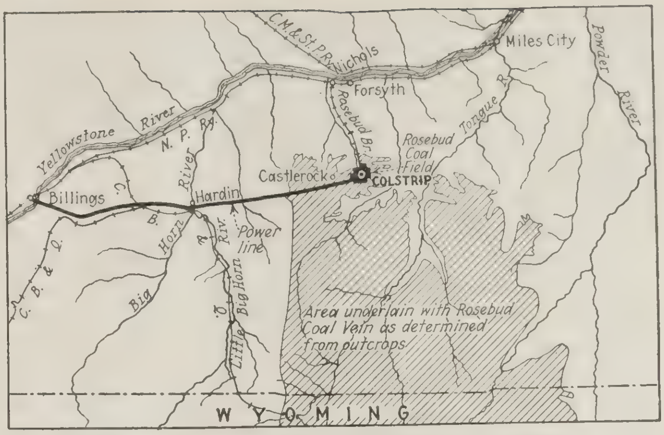


**Fig. 2—General Map of Rosebud Coal Field**

Billions of tons of coal underlie the tremendous area of south central Montana and northern Wyoming, the deposit most available to the Northern Pacific being the 15 sq.mi. at Colstrip, opened by the new Rosebud branch.

Test samples were taken from shafts and drill holes, the average analysis of 48 samples being as follows:

| | Per Cent | |
|---|---|---|
| Loss from air drying | 12.30 | |
| Retained moisture | 11.08 | |
| Volatile combustible | 51.20 | |
| Fixed carbon | 29.94 | |
| Ash | 7.77 | |
| Sulphur | 0.67 | |
| B.t.u. | .... | 10,825 |

In the locomotive test runs comparison with Red Lodge coal was as follows:

| | Red Lodge | Rosebud |
|---|---|---|
| Pounds water evaporated per lb. coal | 5.81 | 4.33 |
| Pounds coal per 1,000-ton miles | 104 | 146 |
| Pounds coal per drawbar hp.-hr | 4.79 | 6.77 |
| Tonnage hauled | 1,794 | 1,783 |

These figures were the average of six round trips over an undulating one-per cent grade with the heaviest class of freight power. From these figures it was determined to make the economic comparison on the basis of one ton of Red Lodge coal being equal to 1.4 tons of Rosebud.

On this basis, and on the further assumption that a railroad to the coal field would develop no additional business of consequence, it was estimated the railway company would make an annual saving of at least $700,000 by substituting Rosebud for Red Lodge coal as locomotive fuel over the territory, Mandan, N. D., to Missoula, Mont.

No action was taken on the report until the fall of 1922, when the board of directors authorized the construction of the branch line and the opening of the field.

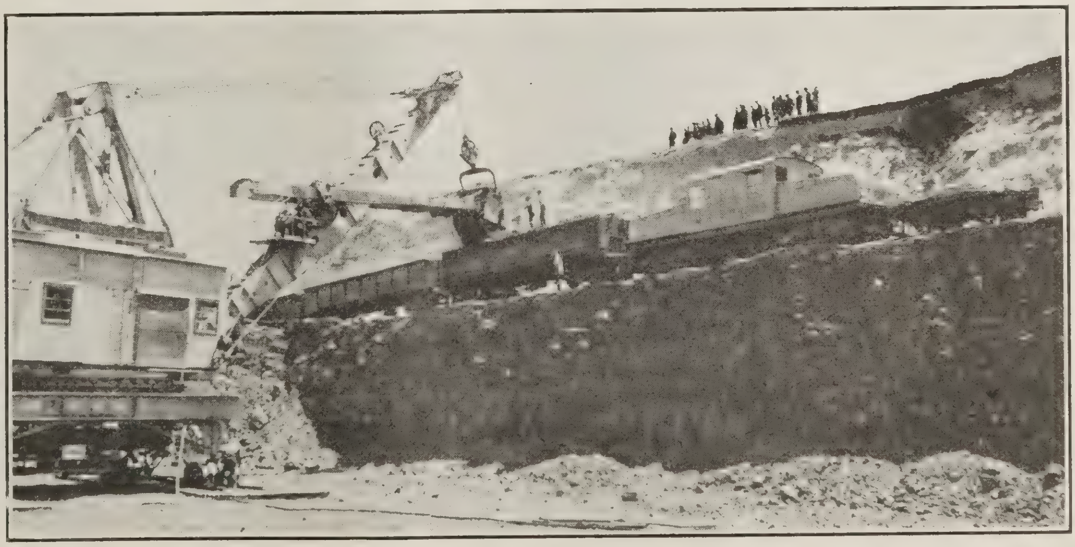
The construction of the line was awarded to Winston Bros., of Minneapolis, and work begun in the spring of 1923. The track reached the coal field in December, 1923. Ballasting was deferred until the season of 1924, and the line was turned over to operation on Sept. 1, 1924.

Meanwhile a small test pit lying in comparatively shallow overburden was stripped with grading machines and about 45,000 tons of coal delivered to the mechanical department for further locomotive tests, for the purpose of determining proper drafting, firing, etc.

The Northwestern Improvement Co. was not equipped or organized to handle a large excavation job, and, therefore, it was decided to open the field by contract. It was thought, however, that it might later be desirable to operate the field by company force, and a 5-yr. limit was fixed for the first contract operation. In order to permit taking the field over without interruption in the operation it was necessary to make some provision in the contract whereby the Improvement company would come into possession of the equipment at the end of the contract. At the same time it was desired to leave the contractor free to select and install the equipment which, in his judgment, would most economically handle the desired output of coal. The contract, therefore, carried somewhat unusual provisions in the way of division between unit costs and equipment costs.

**Loading Out**

The 175-ton shovel picks up coal from the 28-ft. bed already loosened with explosives and discharges it directly into railroad equipment run into the pit on the berm. Ten-car trains are each loaded in a little over an hour. The trains are handled in and out of the pit by 60-ton storage battery locomotives, the largest in coal service anywhere. Chief Engineer Stevens of the Northern Pacific, says these locomotives solved a troublesome problem and have given "excellent service."



Briefly, it provided the contractor should furnish and install the complete plant necessary for the efficient and economical operation of the field, with the exception of standard gage locomotives and 56-lb. rail, which were furnished by the Improvement company and turned over to the contractor.

The bidders were given the results of the borings conducted by the Improvement company over the area to be stripped and asked to name unit prices per cubic yard for common excavation, hard pan, loose rock and solid rock. The estimated quantities of stripping specified varying from 500,000 cu.yd. per year to 2,100,000 cu.yd. per year. Also bidders were to name a unit price per cubic yard for coal loaded into standard open top cars of the railway company. The bidder was required to specify rates per hour for each class of employee which he proposed to use on the work. The improvement company agreed to assume the risk of variations in rates of pay throughout the contract period.

### Contractor to Furnish Proper Equipment

The bidder was also required to name a flat lump sum for the equipment complete, specifying the principal items of equipment contemplated by his plan of operation, but the responsibility for furnishing the proper type of required equipment was to rest solely with the contractor. Payments for equipment were to be made by the Improvement company in ten semi-annual amounts. The equipment included camps and all appurtenances necessary to put the field on a practical and economical operating basis.

In comparing bids, the unit prices bid per cubic yard for the different classes of excavation of overburden were extended into the classified quantities as determined from the borings, and the unit prices per cubic yard for coal loading extended into the estimated quantities of coal. To these sums was added the flat sum bid for equipment, and the wage adjustment necessary to put all bids on the same basic wage scale. The total so obtained divided by 4,100,000 cu.yd. gave the amount per cubic yard the company would pay for coal. This method completely amortizes the equipment in the 5-yr. period.

It is interesting to note that on this basis the difference in estimated total payment for stripping the overburden on the unit prices bid by Foley Bros., as compared with the bid submitted by Winston Bros., was but $6,150 on an estimated volume of 6,300,000 yd. of stripping.

Foley Bros., bid for loading the coal, however, was substantially below the figure named by Winston Bros., and the former firm was awarded the work.

### Question of Water Supply

The preliminary exploration of the field had developed the fact that the question of water supply would become an important one; in fact, there was no dependable surface water supply available, and it was questionable what supply, if any, could be developed from the pit. Because the test shafts had filled with water as soon as they were put down it was thought the drainage ditch from the pit proper would provide an adequate volume of water, although it was known to be of extremeley poor quality for boiler purposes.

The opening of the drainage ditch and of the preliminary test pits developed the fact that no real vein of water was available either above or below the coal seam, and after thorough consideration of the situation it was decided that electric operation presented the only reliable method of handling the field. A power line was built in from Billings, a distance of 100 miles. The Improvement company assuming the cost of constructing the line from Hardin to Colstrip—about half the total distance. Electric equipment was bought for the pit including two 60-ton locomotives for switching. Their performance to date has been entirely satisfactory and solved what had been an extremely perplexing problem in the operation of this field.

Foley Bros. have installed the following equipment: One 350-ton revolving type combination dragline and shovel, equipped with 155-ft. dragline boom with 6-yd. dipper, and 90-ft. shovel boom with 6-yd. dipper; one revolving type shovel equipped with 75-ft. boom and 7-yd. dipper; one gasoline dragline 2½-yd. bucket, 60-ft. boom; one 20-ton locomotive crane; two 60-ton electric storage-battery locomotives; one electric well drill, and two portable type air compressors. Each piece of equipment has been provided with a complete set of spare parts.

A complete machine shop has been constructed, equipped with the following tools, all purchased new for this work: One 20-in. lathe with 18-ft. bed, a 100-ton wheel press, a 24-in. draw cut shaper, a 450-lb. air hammer, cut off saw, band saw, bolt cutter, and a wet and dry grinder. All tools are operated by a direct connected motor and are well adapted for any machine work incidental to the coal field operation.

### Buildings in the Camp

The camp consists of the following buildings: Two 50-man bunk houses, dining hall and kitchen, two-story office with sleeping accommodations for the office force, steam laundry, ice plant, storeroom and store, recreation hall, one 20-stall and one 3-stall garage, septic tank sanitary system, and ten small cottages for highly skilled employees and their families. All buildings are electrically lighted and steam heated from a central boiler plant.

In addition to the contractor's camp, the Improvement company has provided four cottages and one office for its employees, and a two-room school building.

The pit is approximately 7,800 ft. long, and will ultimately be cut to a width of 900 ft. The estimated coal available in this pit is approximately 6,800,000 cu.yd. Of this quantity, Foley Bros.' contract will cover about 6,300,000 cu.yd. stripping and 4,100,000 cu.yd. of coal loading. All but a small quantity of the stripping lies below the 50-ft. contour.

The pit was opened by cutting in the 350-ton machine as a dragline, taking out a through cut about 125 ft. wide on the bottom the entire length of the pit. The smaller machine is used as a coal loader and follows the stripping shovel on the level of the bottom of the coal bed. The loading track is laid on top of the coal.

The sequence of operation from the time the pit was opened follows: The stripping shovel was cut in at the point where the track enters the pit and moved south to the south end of the stripping. It then idled back overland to the point where it first cut in, and moved north to the north end of the pit, followed, of course, by the coal loading machine.

The stripping shovel reached the north end of the cut on July 1. It was then idled back and cut in again having been converted into a shovel. It will again move north, taking a cut 88 ft. wide, casting the spoil over the loading track into the pit from which the coal has been removed.

It was estimated the relative volume of coal and overburden is such that the progress of the two machines would bring them to the north end of the pit simultaneously, but if necessary the intermediate width of the stripping shovel cut will be varied sufficiently to bring about the relative rate of movement required to accomplish this result. The loading shovel will then turn south, loading the coal stripped by the stripping shovel on the northerly cut, the stripper idling back to the original point to renew stripping in a southerly direction.

A meet will similarly be arranged between the two machines at the south end of the pit, which is estimated to be reached, at the present rate of coal consumption, about August, 1926. At this time a full cutting will be stripped ahead of the coal loader, this being the maximum spacing obtainable for single pit operation.

The output of the stripping shovel has been quite uniform for the different classes of material, so that with cross-sections and borings available the estimated location of the stripper on any given date can be predicted with a fair degree of accuracy and meets arranged to suit the coal consumption required by the railway company.

The operation of this field is under the general supervision of C. C. Anderson, general manager, Northwestern Improvement Co., Seattle, Wash. Lochren Donnelly, superintendent, is in direct charge of field operations, with headquarters at Colstrip. The engineering work for the opening and development of the field was done under the supervision of the chief engineer of the Northern Pacific Ry. Co.

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# Colstrip's Electrical Equipment Is Unusual

**By V. A. Wolcott**
Minneapolis, Minn.

OF THE MANY recent accomplishments in improved railroad operation, few are of greater importance than the opening last summer of the completely electrified open-pit coal mine at Colstrip, Mont., by the Northern Pacific Ry. Co. This is an important event as, for many reasons, it serves as a milestone in the economic progress of this industrial age. It is the first completely electrified open-pit coal mine in this country.

The electrical equipment involves many novel features of design, some of which were demanded by the unusual physical conditions to be overcome in accomplishing the successful issue of this undertaking.

This project, in addition to being an outstanding engineering and economic achievement, is an excellent example of conservation of national resources, by reason of the exclusive use of hydro-electric energy for all power operations.

The uncertain water supply in the field led to electrification. The little water available was alkaline. Steam equipment would, therefore, require either an evaporating plant, which was found to be high both in first cost and operation, or boiled water would have to be hauled in tank cars from Forsyth, a distance of 35 miles. After thoroughly considering the final cost per ton of coal mined and the continuity of mining operations, electrically operated equipment was deemed best adapted for that field. A power contract was made with the Montana Power Co., which extended its 55,000-volt, three-phase, 60-cycle power line from Billings, Mont., to Colstrip, a distance of 100 miles.

A Marion Model No. 360 electric stripper with a 155-ft. dragline boom and 6-yd. bucket and a 90-ft. shovel boom with a 6-yd. dipper was purchased. This machine weighed 475 tons including 100 tons of counter-

**Off Comes the Cover**

Standing on the bank is the huge stripping shovel which, with its counterweight, weighs 475 tons. This gigantic machine, assembled and put into service on the "roaring prairie" of southern Montana, is doing a tremendous job. Working first as a shovel and then as a dragline it has opened up the 7,800-ft. Colstrip pit, removing cover averaging 40 ft. from the huge deposit of 28-ft. coal which the Northern Pacific Ry. is mining for its own use to replace, largely, the coal it has been mining for years from underground operations at Red Lodge, Mont. Because of water shortage the whole strip mine is electrically operated.

weight. Standard General Electric Co.'s Ward Leonard, direct-current shovel control and power apparatus were used in its operation.

The coal loading shovel is a Bucyrus Model No. 175-B weighing 220 tons with a 75-ft. boom and a 7-yd. dipper, and has Ward Leonard, direct-current shovel control and apparatus. The motors on this shovel have separately excited shunt fields, which is a new and improved feature in electric shovel operation. The loading shovel loads coal directly from the vein into standard steel coal cars of 50 tons capacity.

The loading track is situated on the top of the coal vein and extends about 8,000 ft. along the edge of the coal pit next to the ground being stripped. The stripper boom, in depositing earth into the adjacent coal pit, continually works over this track. This fact largely determined the type of locomotive and haulage system used to deliver the coal trains from the shovel to Colstrip.

Trolley and third-rail systems, oil-electric, gas-electric, and electric storage-battery locomotives were considered. The electric storage-battery locomotive was wisely chosen, because it required no trolley which might come in contact with the stripper boom, and no third-rail offering a like menace. It was reliable, because it was rugged and simple in construction and operation. It was economical of power, low in maintenance, and either comparable in price with some types or cheaper than others. Two 60-ton, 175-volt General Electric storage-battery locomotives were purchased using lead storage batteries.

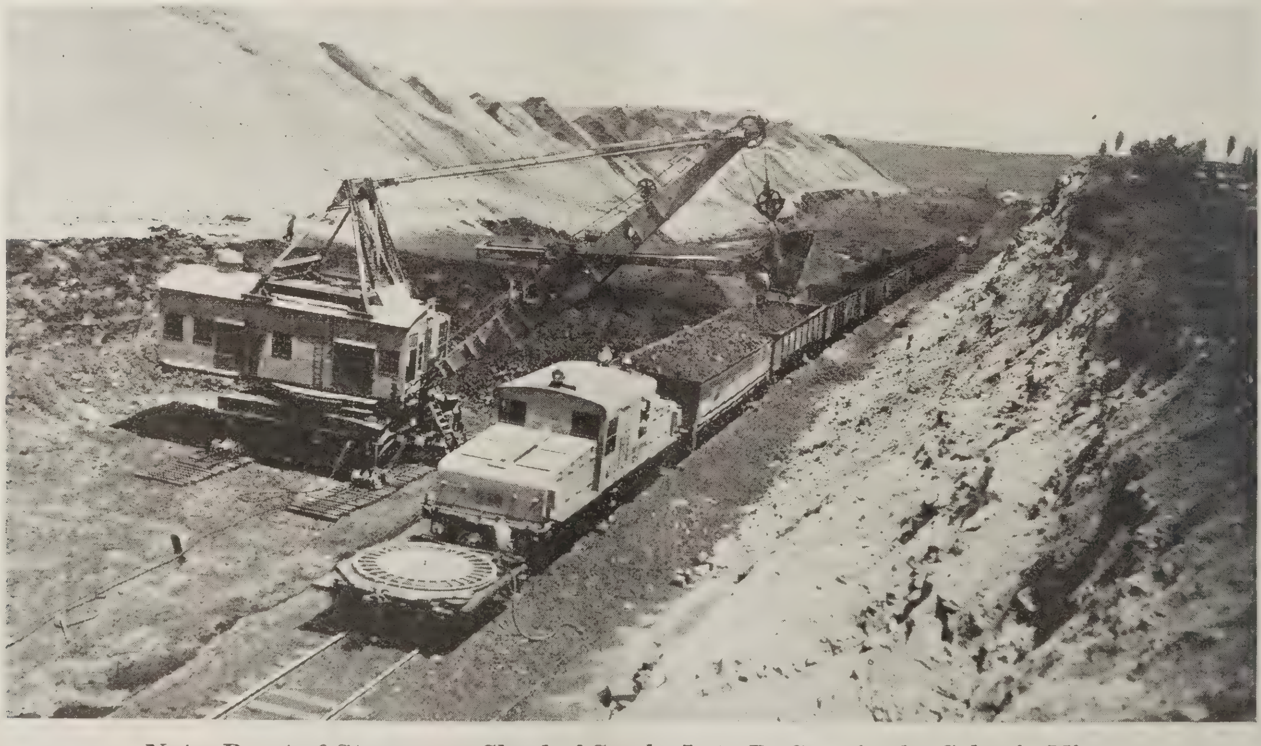
The nature of the mining operations again determined the design of the locomotive. The shovel, working in the coal which previously had been blasted, loads a 55-ton car in 6 min., or a 10-car train in approximately 1 hr. This affords time for charging the locomotive batteries while the shovel is loading the train. Each locomotive has its own motor-generator charging set in its cab.

The locomotive pulls the empty train into position for loading. A small truck on which is mounted a motor-operated cable reel is then coupled to the front of the locomotive. The cable is plugged into a socket in the side of the locomotive cab, and the other end connects to a bank of transformers on the shovel. The charging operation continues even while the locomotive moves the train from time to time in spotting the cars at the shovel. When the train leaves the shovel the cable-reel truck is disconnected from the locomotive and coupled to the next incoming locomotive.

The contractors are now equipped to produce easily an average of 3,000 tons per shift, and are prepared to operate 24 hr. per day, if increased output is desired. The original plans of the Northern Pacific were to use 300,000 tons of coal the first year, increasing the railroad's requirements until, at the end of 5 yr., it would be burning 1,400,000 tons per year. The economical results obtained by the use of this coal have encouraged the company to increase as rapidly as possible the number of locomotives using it, and it may be using 1,200,000 tons annually in the near future.

## Shooting Is Heavy at New Colstrip Mine

How explosives are used in Colstrip is described by E. H. Simpson in the current issue of the du Pont Magazine. Mr. Simpson says: "In shooting the overburden, all holes are chambered with ammonia dynamite, 60 per cent strength, sufficiently to permit loading ½ lb. of railroad grain blasting powder per cubic yard of overburden, which includes the 'wash' as well as the



**Not a Burst of Steam or a Cloud of Smoke Is to Be Seen in the Colstrip Mine**

The photograph shows the shovel loading coal from the 28-ft. bed directly into cars. The 60-ton battery locomotive is accompanied by its cable-reel car. By means of this cable and the motor-generator set in the cab the locomotive recharges its batteries during each of the 1-hr. periods when the shovel fills a 10-car train. When the train is loaded the locomotive sets out the reel car for the next locomotive's use, and hauls its train out of the mine to the Northern Pacific's track nearby.

**Sixty-Ton Storage Battery Locomotive**

This type is used by Foley Bros. to handle 10-car trains of railroad equipment into and out of the pit for direct loading by the shovel.

solid rock. Each hole is primed with one electric blasting cap in one 1¼x8-in. cartridge of ammonia dynamite, 40 per cent strength. Large areas are fired simultaneously, using either a blasting machine or power current.

"With the coal uncovered, the loading shovel is carried on a track in the center of the pit and cleans up a face 112 ft. wide at the top and 88 ft. wide at the bottom, with the center of the face 25 ft. in advance of the corners at each side. This semi-circular face is cut to the radius of the shovel.

"To shoot the 28-ft. coal, one line of six holes 17 ft. apart is drilled on the same curvature as the face 21 ft. back, and two additional holes along each rib or side line of the cut. All holes are drilled to a depth of 25 ft. or within 3 ft. of the bottom of the coal vein. All holes are chambered, and the explosive charges are confined at the bottom of each hole.

"Conditions vary from dry to extremely wet. Gelatin dynamites, 25 per cent strength, are used when the work is wet. Each hole in the back row is loaded with 40 lb., and the side or 'crib' holes with 18 lb. each, making a total of roughly 300 lb. per round. When the work is dry, blasting powder, R.R.P. granulation, is loaded, two kegs to each back hole and one keg to each rib hole, or a total of 400 lb. All holes are primed with electric blasting caps and fired simultaneously. In either case the explosive charge breaks up the coal sufficiently for economical loading."

This community, Colstrip, says Mr. Simpson, where one's vision is checked only by distant hills, and where a year ago the only evidence of civilization was a lone log cabin, is today a hustling coal town.

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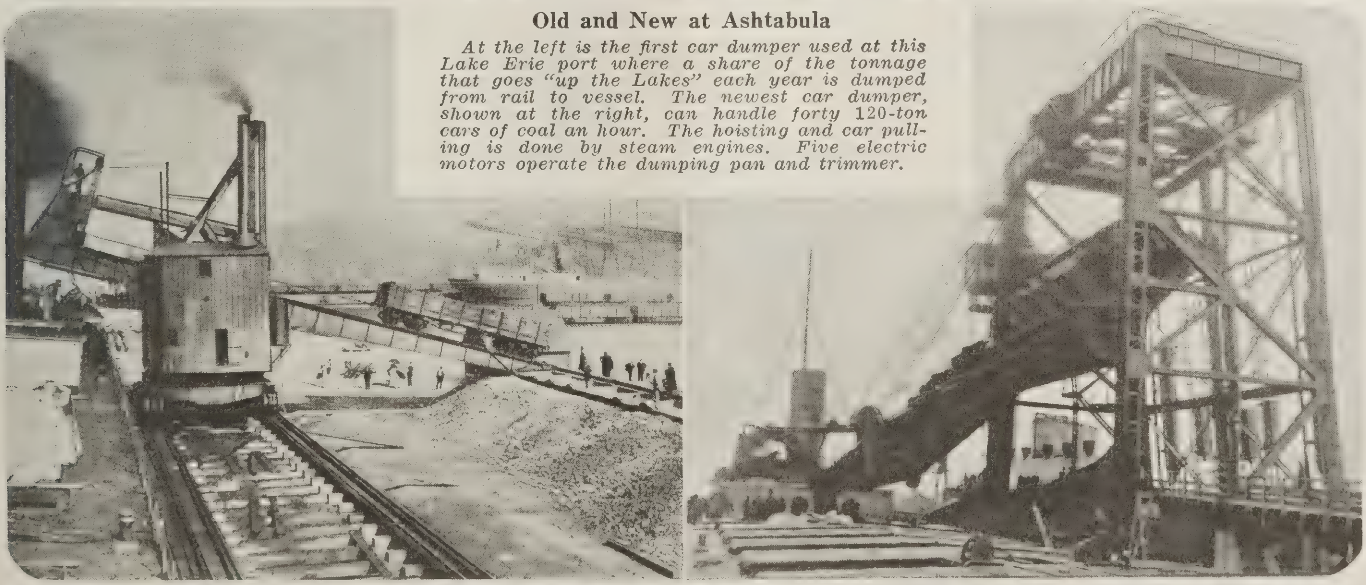
## New Paste Promises Decided Battery Improvements

Heretofore one of the chief disadvantages inherent to the storage battery has been its great weight in comparison with its capacity for storing energy. But little improvement in this regard has been made lately.

Within the comparatively recent past, however, a new substance or binder for the lead salts employed in battery manufacture has been developed in England, and accumulators made with the new paste are now undergoing exhaustive tests in London. While the complete results of these trials are not and cannot be fully known until the tests are concluded, enough has been done to justify certain claims of superiority for the new substance and the batteries in which it is used. Both in first cost and capacity the new batteries have great advantage over the older well-established types.

Improvements of the new battery over the old lie chiefly in the plate employed. This combines large capacity with an ability to withstand high rates of charge and discharge. The new binder permits the manufacture of a plate of great mechanical strength and porosity as well as freedom from sludging. The strength and flexibility of the active elements are such that the grid serves practically as an electrical collector only.

Results of the tests so far conducted would indicate that the cost of the new battery will be appreciably less than that of its predecessors; that its capacity for a given weight will be at least 35 per cent greater; that its charging time will be shorter and its life longer, and that it evolves no dangerous or harmful fumes. All of these foreshadow traction, transportation and lighting possibilities heretofore unobtainable through the use of electrical accumulators.



**Old and New at Ashtabula**

*At the left is the first car dumper used at this Lake Erie port where a share of the tonnage that goes "up the Lakes" each year is dumped from rail to vessel. The newest car dumper, shown at the right, can handle forty 120-ton cars of coal an hour. The hoisting and car pulling is done by steam engines. Five electric motors operate the dumping pan and trimmer.*

# Better Underground Lighting Aids British Mining

### Advances in Method and Equipment Have Been Made to Reduce Cost of Coal by Lowering Accident Rate and Raising Efficiency

By **James Cooper**
Assistant Professor of Mining, Heriot-Watt College, Edinburgh, Scotland

Efforts are being made in the British coal fields to lower extraction costs. Better illumination is generally regarded as one underground factor contributing to this reduction. Illumination recently has been the subject of extensive research by a government committee which has issued many valuable reports.

In Great Britain, out of the 800,000 safety lamps used, about 350,000 are of the electrical type and the remainder of the oil type. The electric lamps consist of two classes, namely the hand and the cap lights.

In Scotland where many open-flame cap lamps are used, and where in gassy mines the electric cap lamp is rapidly being installed, the output per man is higher than in any other area of the British coal fields.

The evidence clearly shows that a cap lamp is more advantageous than a hand lamp, the reason being that when the lamp is on the cap it is in the position in which it can most effectively assist the eye of the underground worker.

In deep mines, owing to high temperatures, the men frequently wear only shoes and a loin-cloth, and with the battery of the cap lamp placed on the hip and secured by a belt, small pieces of mineral get between the skin and the cloth so that the battery chafes the wearer with every movement of the body.

According to recent statistics the 1,200,000 men engaged in mining have 180,000 accidents of sufficient severity to cause them to absent themselves from work for more than 7 days. How does the standard of illumination in the mines affect these figures. It is accepted by all who have had underground experience that the stronger the light the better it will enable men to see the roof and so avoid the ever-present dangers of falls of slate; that all actions will be speedier as the objectives are more easily seen, and lastly, that there is more eye strain when the perspective is inadequately illuminated. Thus, the quality of the illumination will affect the accident rate due to falls of roof and coal, this class accounting for 50 per cent of the total accidents occurring in British mines.

## ENABLES BIGGER PRODUCTION

With the greater activity that improved illumination renders possible, more coal is produced. Furthermore, ineffective lighting has a serious effect, as the prevalence of nystagmus already costs the industry over £1,000,000 a year. At the same time this disease brings undesirable social evils in its train, the victim becoming irritated at his inability to work at ordinary jobs. Lastly, it opens up an avenue for malingering or for the suspicion that the real victim of the disease is only feigning an inability to work.

The passing of the Order in 1913 requiring that only "approved types of lamps" be used in mines where safety lamps are employed, caused lamp makers to tackle the problem of providing a high-grade article.

When the war came a few months later, progress naturally was delayed, but on the cessation of the struggle, the subject was vigorously attacked and during the past few years the improvement in lamps has proceeded rapidly. Two factors focussed attention on illumination: (1) The high production cost per ton; (2) the growing cost of nystagmus. Compensation rose from one penny per ton in 1913 to 3.6d. in 1924.

The problem could best be attacked in two directions, first, by the formation of a strong committee to initiate and make researches, basing their reports on the results, secondly, by encouraging new ideas in the construction of both oil-flame and electric safety lamps.

The findings of the committee have been published in a number of reports in which the most important facts are (1) that the illumination given by lamps, both oil and electric, used underground, should be greatly increased; (2) that 20-mesh gauze should be used in place of the 28-mesh fixed by Davy over a century ago. This change of gauze mesh, which has been approved by departmental authority, is an epoch-making advance for the mining industry and in more normal times would have elicited much praise from all parties in the coal fields.

## LARGER MESH GAUZE MORE EFFICIENT

Its 400 apertures to the square inch of gauze surface, in place of the 784 apertures customary in the old type of gauze, increases the quantity of air admitted to the flame. According to the report of the committee, the illumination, which for the same lamp was 0.5 cp. with the 28-mesh gauze is increased to 0.93 cp. with the 20-mesh gauze.

The report advocates also a 4-volt battery in place of the present 2-volt, but this can be obtained by a reintroduction of the alkaline cell of the Edison type, as the lead battery still in general use would be much too heavy if its capacity were doubled.

In recent months the activities of the lamp makers have been no less fruitful. Several firms are now constructing the combustion-tube oil-flame lamp made familiar many years ago by the Hailwood company. Recent tests have shown that this device gives satisfactory results, and the addition of the 20-mesh gauze will raise its candlepower to such a degree that it will be a formidable competitor to the electric lamp as at present constructed.

The shadowless electric lamps now being developed have movable reflectors, the standards and cap that shaded the glass in lamps of the old type being removed. Attention is also being directed (1) to devices for rapidly changing lighting bulbs in the lamp room, (2) to the replacement of a liquid electrolyte by an unspillable jelly, (3) to the design of better contacts and of a rigid position for the battery and (4) to the choice of the best kind of glass surface to prevent glare.

The last point is most important, canary-colored, dioptric, and frosted globes all being tried. The frosted glass will probably be found the most suitable, as there is uniform illumination and no shadow effect.

Individual collieries are also initiating new departures. One mine in the Scottish area, having a thick seam and a good roof, has suspended lamps along the machine-cut face.

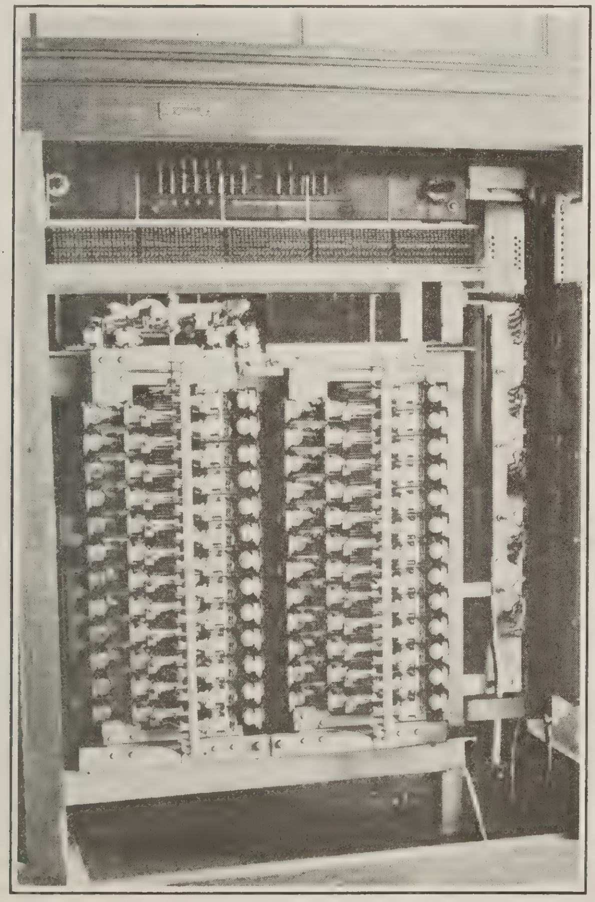
This installation is in a deep mine worked with open-flame lamps. The current is transformed from 500 to 50 volts in an oil transformer, located near the working face, and is led by cab-tire cable, tappings for lamps being provided at 10-ft. intervals. The lamps are of 25 cp. and have 30-volt metallic filament with frosted glass globes encased in the usual underground type of protected, hermetically-sealed fittings. This installation is much appreciated by the men at the face, and a large tonnage per man shift is being attained.

The subject of mine illumination in the past has received little skilled attention, but the present economic stress has made the effort to advance it almost national. There is now, fortunately, proper recognition of its importance. Operators not only recognized its influence on production costs but also the fact that it has much bearing on the social well-being of underground workers.

## Telephone Problems Are Solved by Automatic System

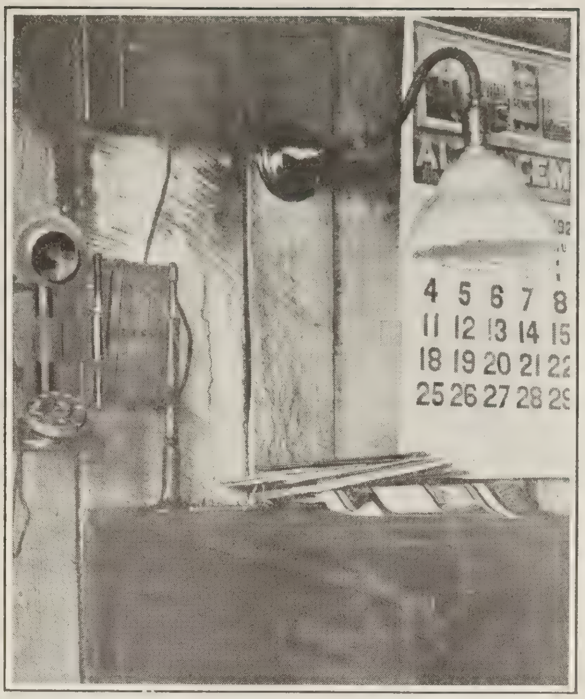
Inadequate telephone service is common at many mining operations. The usual faults are, too few phones, too many phones on a single line, or a lack of night switching service. At those isolated mines which have but one line connection with a public service telephone company, it is the practice for the coal company to install a number of telephones of their own. These are usually of the magneto type. If fifteen to twenty of this type of phone are connected to one line the service is rather unsatisfactory because of the annoyance of frequent ringing and because this number is near the limit that can be made to operate on one line.

With but eight to ten phones on a line, this simple system is satisfactory except for the fact that there is a lack of privacy in the conversations. To have privacy between certain phones requires a separate line for those phones, and this in turn requires the installation of duplicate phones, or of a switchboard. The manually operated switchboard is not entirely satisfactory because of the expense of employing operators. On account of this expense, but few coal companies provide 24-hr. switching service. There is an operator at the board for ten or twelve hours but it often happens that telephone service is badly needed during other hours especially when an emergency arises.



**Provides All-Night Service**

This automatic telephone switchboard is that used by the Raleigh Coal & Coke Co. at Raleigh, W. Va. The entire switching mechanism is contained in a cabinet about the size of a four-section bookcase.



**An Unusual Sight in a Mine Shop**

The calling dial can be seen on the base of the transmitter stand. The automatic phone is always ready for service and there is no waiting for an operator.

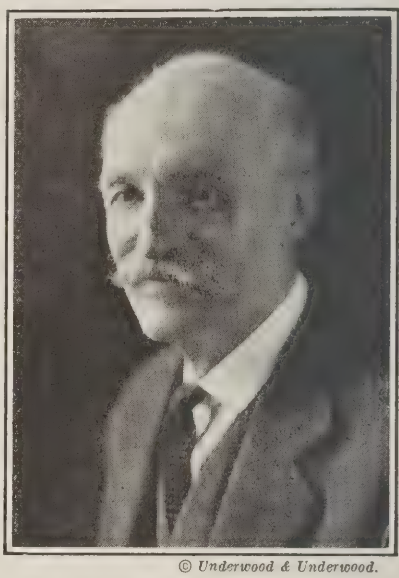
Because of these difficulties in obtaining an economical yet satisfactory telephone service for an isolated mining operation, some of the larger coal companies have installed automatic telephone systems. One example of such an installation is that of the Raleigh Coal & Coke Co. at Raleigh, W. Va. This installation, which consists of an automatic switchboard and approximately fifty phones, has now been in service for over four years and in that time has demonstrated conclusively that it is the only satisfactory and economical system for a mine operation. The service meets all requirements for the twenty-four hours of the day, yet there is no expense for operators.

It is true that the automatic switchboard is more complicated than the manual type, however it has been perfected to a point where there is little chance for difficulty. R. B. Holmes, electrical engineer for the Raleigh Coal & Coke Co., states that he has experienced little trouble with the automatic system. He makes it a rule to inspect the switchboard once each day. At the time of this visit he also gives the storage batteries any necessary attention.

Because of the fact that there is always a voltage on the line and because of the liability of line trouble inside of a mine, the automatic phones are not used inside. Instead, magneto phones with no connection to the automatic system, are installed between the inside and the repair shop on the outside.

# News Of the Industry

## Peace Move in Anthracite Strike Foreseen When Pinchot Invites Lewis and Inglis to Conferences



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**Gifford Pinchot**

Governor Gifford Pinchot of Pennsylvania has once again stepped into the anthracite strike picture with invitations to John L. Lewis, president of the United Mine Workers, and W. W. Inglis, president of the Glen Alden Coal Co. and chief of the operators' section of the scale committee, to confer with him. As was the case with the Milford conferences several weeks ago, the Governor will meet the opposing leaders in separate parleys. He journeyed from Harrisburg to Philadelphia yesterday to sound out Mr. Lewis and expects to talk with Major Inglis at the Capitol today.

This latest development follows closely upon activities of the Rev. John J. Curran, of St. Mary's Roman Catholic Church of Wilkes-Barre, who discussed the situation last week with Mr. Lewis and Vice-President Philip Murray. Father Curran's name has been linked with the suggestion that a basis of settlement might be found in a flat 5 per cent increase and a "modified" form of the check-off. That the operators had proposed or entertained such a proposition was denied by them. At the conclusion of his talks with Messrs. Lewis and Murray, Father Curran declared that the next move was "really up to Governor Pinchot." He added that he believed the Governor would call both sides together "before very long."

### Criticizes Operators

Commenting upon the outlook as he saw it, Father Curran said:

"Perhaps the operators are a little stubborn. During the past several weeks I have heard things that make me think they are. The men are fair. They are not arbitrary. They are willing to stand by the public, but do not want to concede all their rights."

This theme was re-echoed by Mr. Lewis at an address at Nanticoke on Nov. 5. The head of the mine workers asserted that the miners did not relish strikes, but had been forced to call a suspension to protect their rights because of the "unreasoning" attitude of the producers. "There has been no change in the attitude of the operators, no change in their spirit of resistance, and no change in their policy to take all and give nothing." Mr. Lewis stated that he had had a recent conference with Major Inglis. This conference was arranged through an undisclosed third party. No details as to what took place were volunteered by either of the conferees.

In the meantime, as told elsewhere in this issue of *Coal Age*, an active campaign to replace anthracite with semi-bituminous coal is under way in New England, notwithstanding the fact that stocks of hard coal in the hands of the consumers and average reserves in retail yards probably are larger than in any other section of the country. Some splint coal also is moving into New England for domestic purposes despite the absence of through rates.

### Urge Buying of Soft Coal

In New York, public authorities are urging consumers whose stocks of hard coal are low to put in a supply of bituminous. The report of John Hays Hammond to the President that the reserves of anthracite now available would last at least two months, it was pointed out, was statistically correct, taking the coal-burning section as a whole, but that offered no comfort to the householder who had no anthracite in his cellar. "Those in need," remarked George F. Eltz, a member of the New York Coal Commission, "are in no less a predicament because of the safety of some one else."

### *Broadens Inquiry on Rates On "Substitute" Fuels*

The general investigation ordered by the Interstate Commerce Commission into rates on anthracite and other fuels to New England and Middle Atlantic States has been further broadened to cover:

(1) Joint rates and through routes on splint and high-volatile coal from Kanawha and Coal River fields;

(2) Extension of recently established rates on prepared coal to all sizes of low-volatile;

(3) Establishment of rates from semi-anthracite mines in Virginia.

A hearing on these questions will begin before Commissioner Campbell and Examiner Koch of the Interstate Commerce Commission in the rooms of the Merchants' Association, New York City, this morning at 10 o'clock.

The anthracite situation will be discussed next Tuesday by Ellis Searles, editor, *United Mine Workers Journal*, and Walter Gordon Merritt, general counsel for the Anthracite Operators' Conference, at a luncheon of the committee of the Department of Industrial Relations of the National Civic Federation at the Lawyers' Club, New York City.

At a recent meeting of the district board of the United Mine Workers at Scranton a decision was reached against granting the petition of certain washeries in this region to turn out coal and sell the same to schools. The labor leaders went on record as opposing the production or shipment of any coal during the anthracite suspension. About a week before this decision was arrived at permission was granted the Traders' Coal Co., at Plains, to sell 1,500 tons of coal to the public schools of Plains township.

All the surplus coal in stock at the Hauto storage yard has been sold by the Lehigh Coal & Navigation Co. About a week ago there was about 100,000 tons in small sizes at this plant but this has now been cleared up.

Now that the cold weather is putting a stop to work on highways in the hard-coal region many anthracite miners who have been working since the strike started will be thrown out of jobs. This condition is expected to result in many of the rank and file launching efforts to have their leaders resume wage negotiations with the operators.

# West Virginia Smokeless Producers Plan Campaign to Capture New England

**By Sydney A. Hale**

Special Contributor, *Coal Age*,
New York City

First steps in an educational campaign to capture the New England domestic market were taken Nov. 6, when a meeting of the Smokeless Coal Operators' Association of West Virginia, held at the Copley-Plaza Hotel, Boston, Mass., authorized the immediate establishment of a coal service bureau in Boston. In this way the semi-bituminous producing interests of southern West Virginia hope to use the anthracite strike as a means of permanently weaning away a large part of the New England domestic trade from the use of hard coal.

The primary functions of the bureau will be to teach household consumers how to burn low-volatile coals successfully, to handle complaints received by retail distributors from customers experimenting with this fuel, to police shipments to prevent the sale of coal from other districts as West Virginia smokeless and to co-operate with the retail trade and with the various quasi-official and commercial bodies now functioning in New England as a result of the anthracite strike.

Robert H. Gross, president, White Oak Coal Co.; R. L. Wallace, Boston representative of the Pocahontas Fuel Co., and Charles P. Hutchins, Boston representative of W. C. Atwater & Co., have been named a Special New England Service Committee to handle all questions with respect to the creation, personnel and scope of the bureau. The cost of the bureau will be financed out of the funds of the association.

If the Boston bureau proves as successful as its projectors anticipate, supplementary service units will be established at Springfield and Worcester, Mass.; Providence, R. I., and New Haven and Hartford, Conn. Contingent upon the success of the efforts now under way to persuade the Interstate Commerce Commission to direct a more favorable all-rail basis to New England points on lines other than the New York, New Haven & Hartford R.R., additional bureaus are planned. Should the Commission extend the new rates to cover the all-rail shipment of mine-run, still greater expansion is in view.

The question of all-rail rates on mine-run and the application to open up more gateways to the all-rail movement will come up at a hearing to be held in New York City today before Commissioner Campbell. Establishment of a reasonable all-rail basis on mine-run, say the operators, would enable the producers of low-volatile coal from West Virginia to guarantee a monthly minimum of 450,000 tons, instead of 135,000 tons, as is the case while the rates are limited to prepared sizes.

The decision to establish the service bureau was the outgrowth of the activities of the advertising committee of the association. This committee, with Holly Stover, Chicago, as chairman, had been making a study of general advertising as a basis for recommendations on a national publicity campaign. The possibilities of entrenching smokeless in the New England market, however, and the representations made to the operators of the present necessities of that section of the country convinced the committee that any national project should be held in abeyance while a special, energetic drive was made on New England.

The operators' association, at its regular monthly meeting, which was shifted to Boston to give the members closer contact with the situation, unanimously approved the proposals of the Stover committee. It also heard Eugene C. Hultman, chairman of the Massachusetts Commission on the Necessaries of Life, who substituted as a speaker for Governor Alvan T. Fuller. The Governor, in expressing regret at his inability to be present, wrote the association a letter in which he reiterated that New England was in a revolt against anthracite.

"If you producers of smokeless coal," he said, "can restrain your greed; if you can disregard the present as a gambling opportunity to take advantage of the public's necessity; if you will adopt an honest and liberal and considerate policy, you have a wonderful opportunity to entrench yourselves in this New England market."

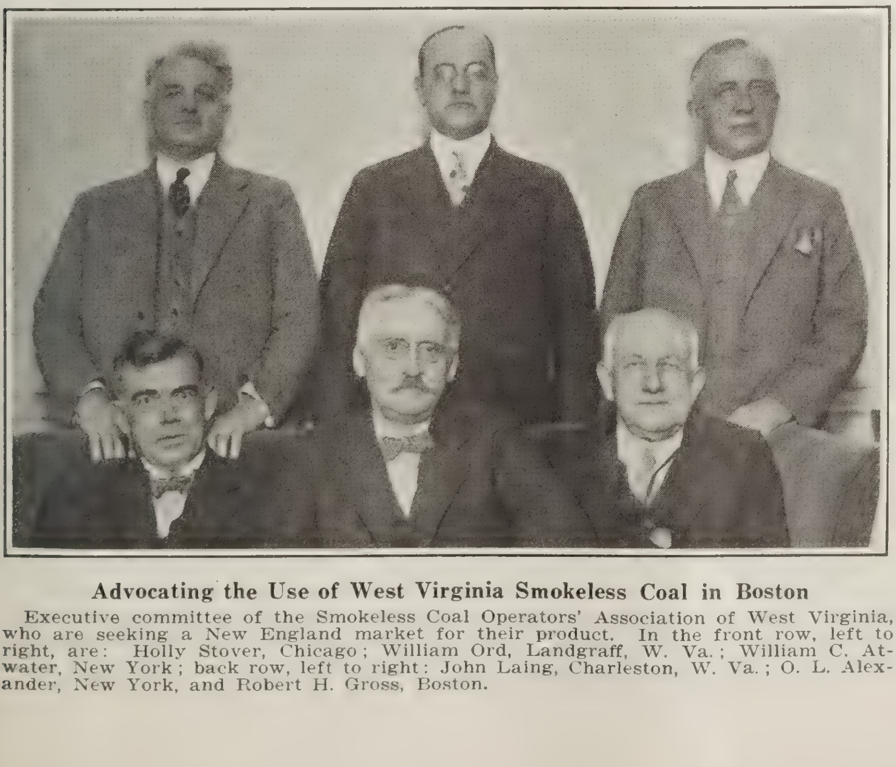
Mr. Hultman stressed the same theme. If prices are boosted, he declared, until retail quotations are almost as high as on anthracite, "and you are the only people who can prevent it, it means that we are going to have a flash in the pan, the people will feel sore and be disgusted with the whole business and demand that the government control the coal industry, and the householder will go back to anthracite the moment the strike is over. I want to help anyone who wants to help us. You have volunteered to be our fuel savior in the present emergency. In the past other fuel saviors have perhaps saved our lives, but in the process they have taken our pocketbooks."

The association met this plea on prices by adopting a resolution condemning the pyramiding of profits in resales. The resolution recited that it had been reported that smokeless had been resold as many as five times between the mines and the final purchaser, resulting in unreasonable prices to the consumer and unjust condemnation of the operator.

### Will Work with Retailers

Vigorous denial of the intimation that the West Virginia smokeless producers will go into the retail coal business in New England if the established dealers do not cooperate fully in the present campaign to sell semi-bituminous coal in the Northeast was made by Robert H. Gross, chairman of the Special New England Service Committee of the Smokeless Coal Operators' Association of West Virginia, in a statement to *Coal Age*.

"The matter of retailing coal by the association or any of its members," declared Mr. Gross, "has not been discussed or considered and we are glad to take opportunity of denying these unfounded rumors. It is the purpose of the West Virginia operators to sell our coal through the recognized channels, of which the present retail dealer is an all-important factor, and we know that the retail dealer will function just as effectively in this present emergency as he has in the past."



**Advocating the Use of West Virginia Smokeless Coal in Boston**

Executive committee of the Smokeless Coal Operators' Association of West Virginia, who are seeking a New England market for their product. In the front row, left to right, are: Holly Stover, Chicago; William Ord, Landgraff, W. Va.; William C. Atwater, New York; back row, left to right: John Laing, Charleston, W. Va.; O. L. Alexander, New York, and Robert H. Gross, Boston.

## Two Oklahoma Mines Reopen At 1917 Scale

The Osage Coal Co.'s mine No. 5, at Krebs, Okla., opened for work Nov. 4 with a small force of laborers, it was reported from the office of the company. The company is one of several in this area that have been able to hire enough men on the 1917 wage agreement to operate since Federal Judge R. L. Williams issued an injunction that prohibits striking miners from picketing with such large forces near the entrance of the mines. Osage mine No. 5 has been closed since Sept. 1, when the general strike of union men in District 21, was issued by William Dalrymple, president of the organization.

The large Wise-Buchanan mine at Henryetta also opened last week on the 1917 scale, according to information received from that town. The mine at full capacity can employ 200 men. It was reported that fifty showed up for work the first day mining operations were resumed.

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## To Open Oklahoma-Arkansas Mines at 1924 Scale

Several important mines in the Oklahoma-Arkansas coal fields are to reopen immediately on contracts calling for the 1924 wage scale, it has been announced by William Dalrymple, president of district No. 21, United Mine Workers.

The Central Coal & Coke Co., operating mines in eastern Oklahoma and western Arkansas, is said to be one of the larger properties gained over by the union. One of the properties is at Calhoun, near Poteau, but the largest is said to be the Jenny Lind mine, in Arkansas. Approximately 315 miners will be employed in the Jenny Lind mine, according to a telephone conversation with Superintendent Boyd, says Dalrymple.

The Buck Creek Coal Co., operating mines near Panama, Okla., also will open under the new scale, union officials announced. Several other contracts are being negotiated, according to statements of the same officials.

### *Bethlehem Corp. Mine Opens at 1917 Scale*

The Bethlehem Mines Corporation resumed operations at the Marianna mine, near Bentleyville, Pa., Nov. 5 with a force of 46 men, which was increased to 150 the next day. Unofficial reports said the company had brought in a total of 400 men to work the mine, which is being started on the 1917 scale. This mine had been idle more than a year. The company owns many other large mines in the Pigeon Creek Valley and is expected to open others on the same wage basis. The mining company is a subsidiary of the Bethlehem Steel Corporation and the superintendent reports directly to Johnstown.

No disorder marked the opening, but Sheriff Otto Luellen, of Washington County, was prepared to cope with any situation that might arise, as the mine is located in the heart of a strong union district.

### *Survey of Coal Stocks On Dec. 1?*

A survey of coal stocks as of Dec. 1 is being contemplated by the Department of Commerce. Although a definite decision has not been reached, C. P. White, Chief of the Coal Division, announced on Nov. 7, the proposal is under consideration. The last survey was of June 1. Mr. White plans to put in operation, eventually, a program for quarterly surveys. Should a survey as of Dec. 1 be taken, it probably would be between Jan. 5 and 15 before the data would be ready for publication.

In the McAlester-Hartshorne-Wilburton field practically all coal is being mined open shop. The larger mines report larger working forces. Operators declare that 165 men are at work at Rock Island mine No. 12, at Hartshorne, and Rock Island mine No. 10 also reports gains in its working force. Strikers, however, declare that none of the workers will accept work at the terms offered by mines operating non-union.

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In September 931,462 tons of coal was mined in Colorado, as compared with 939,816 tons in the corresponding month of 1924. Production during the first nine months of this year totaled 6,841,651 tons, or 388 tons less than was produced during the corresponding period last year. State Coal Mine Inspector James Dalrymple announces. An average of 11,477 men have been employed in and about the coal mines of the state so far this year, and the number of days worked per mine has been 126.9. The number of men employed in September was 11,003.

## Montour No. 10 Resumes At 1917 Scale

Operation of mines under the 1917 wage scale by the Pittsburgh Coal Co. came a step nearer Pittsburgh proper Nov. 9, when the company resumed operations at Montour No. 10 mine, at Library, 10 miles from the city, on the Montour R. R. The pit was opened with 41 men at work.

The company now has a total of four mines working on the 1917 scale in the Pittsburgh district, one in each of these counties: Allegheny, Fayette, West Moreland and Washington. With the opening of the mine at Library the company has 749 miners digging coal in the Pittsburgh district and 500 men at Pomeroy, Ohio, all on the 1917 scale.

It is not expected that any coal will be loaded at the Montour mine for several days, as the intervening time will be occupied in cleaning up. Montour No. 10 is one of the newest and most up to date plants of the company, producing a high grade gas and steam coal. The tipple was constructed in 1919. It is planned to bring the mine up to a daily production of about 2,500 tons and to employ 500 men. The mine was closed down in April, 1925. Twenty deputies of Sheriff Woodside of Allegheny County guard the mine.

The Pittsburgh company now has thirty-six idle mines in the Pittsburgh district and the company again emphasizes that any of them will be opened as soon as a sufficient number of men express a desire to return to work.

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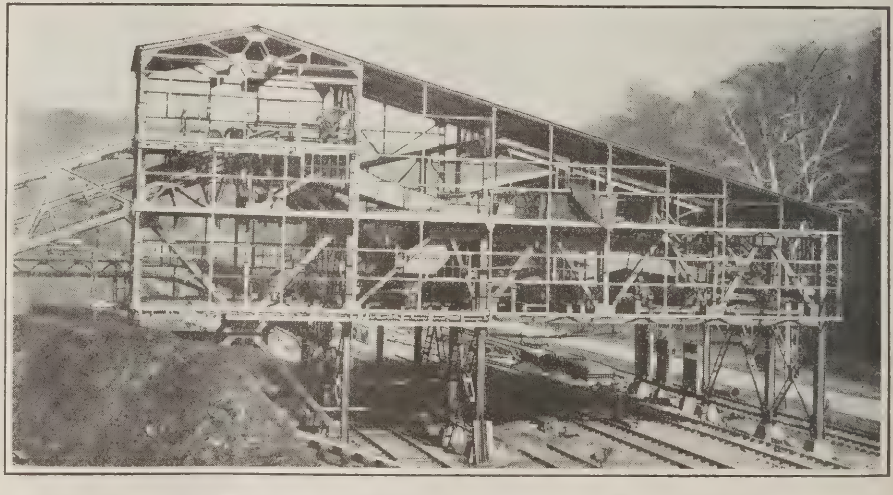
The American Mining Congress has appointed the following committee to consider the use of structural steel for mine timber: H. W. Montz, Lehigh Valley Coal Co., Wilkes-Barre, Pa.; J. M. Clark, the E. E. White Coal Co. Glen White, W. Va.; M. D. Gibson, Bertha-Consumers Co., Pittsburgh, Pa.; D. W. Blaylock, Madison Coal Corporation, Glen Carbon, Ill.; F. H. Frazier, Maher Collieries Co., St. Clairsville, Ohio; R. L. Twitchell, Carnegie Steel Co., Pittsburgh, Pa.; Geo. J. Hahn, Lorain Steel Co., Johnstown, Pa.; Geo. O. Richardson, Bethelehem Steel Co.



**Warden Tipple of Pittsburgh Coal Co. Under Construction**

The Pittsburgh Coal Co. is embarked on a program of concentration and reconstruction that involves the erection of large units. This is the first fruit of this program which will result in cheaper and better coal.

# Thinks Anthracite Strike Will Make Soft Coal Universal Domestic Fuel; President Urged Not to Interfere

**By Paul Wooton**
Washington Correspondent of *Coal Age*

The President has been informed in detail by John Hays Hammond as to the results of the efforts by the New England governors to meet the deficiency in anthracite by supplying substitutes. Mr. Hammond's observations as chairman of the New England Governor's Coal Committee are of more than sectional interest. He believes communities elsewhere could profit from what has been done in New England and that the task would be easier because they are less exposed to interruptions of fuel supplies.

Mr. Hammond is not disposed to minimize the amount of anthracite production which may be lost. He feels that the country should be prepared for further months of possible suspension. When the strike began Mr. Hammond was inclined to think that the miners and the operators would not be so blind to their own interest as to give their market away to bituminous coal, but now that each seems disposed to fight their battle to the bitter end the public must be prepared, he feels, to use bituminous coal not for a few weeks but throughout the winter.

Mr. Hammond told President Coolidge that the greatest hope of meeting this strike is for the administration to continue its policy of hands off and for the consumer to lay in ample reserves of substitutes. He hopes that New York and New Jersey will follow the example of New England and impress upon the individual citizen that it is his duty under these conditions to place his order for substitutes, rather than hold off buying in the hope that appeals to Washington will accomplish something. Washington cannot mine anthracite.

No great amount of pressure for a political patching up of the strike will come from New England, Mr. Hammond believes. The spirit of the people has been aroused to the point where he believes they are willing to undergo whatever sacrifice is necessary to free themselves from the annual danger of having to go through just what they are enduring this winter. He cites the fact that for every letter received by the Governors' committee complaining of the inconvenience of soft coal nine have come in glorying in the fact that the writer has found a way to use soft coal successfully in his hard-coal equipment. The people have made up their minds, Mr. Hammond believes, to hold the gain they feel they have made thus far and refuse longer to be at the mercy of an industry that can give no adequate assurance as to continuity of supply.

It also is beginning to dawn on the people of New England, Mr. Hammond reports, that bituminous is bound to be the coal of common use in the future. In addition to the realization that continuous supply probably cannot be guaranteed the people are sure that anthracite will become more and more expensive. They are finding even now that they can get the same amount of heat for two-thirds the money.

The people in New England, Mr. Hammond says, have more vision than the dealers. It has been impossible to arouse much enthusiasm among them in the efforts to supply substitutes. Profits are larger in the handling of anthracite and the business is so satisfactory that they hate to see bituminous coal get started, Mr. Hammond told the President. They also have to consider the uncertainty of the situation and are not inclined to put in stocks which might prove unsalable were the strike to end.

Knowing the inborn repugnance of the people of New England to coercion, Mr. Hammond is sure they are through paying tribute, but he fears that they are underestimating the necessity of being as forehanded as possible in providing themselves with substitutes. Some of those who have gone over permanently to the use of soft coal are buying on a hand-to-mouth basis, anticipating a settlement of the strike, when they expect bituminous prices to fall. There is certain to be trouble unless soft-coal requirements are kept moving steadily in maximum volume.

### Producers Have Responsibility

Producers of soft coal and coke have a definite responsibility in this situation, Mr. Hammond asserts. They owe it to the people whose market they want and they owe it to their own stockholders to use every influence to keep prices down. The Governors' committee has been careful to point out that soft coal has been selling at abnormally low prices and that somewhat higher prices than have been prevailing are justified and necessary to a healthy industry. Were prices allowed to get out of hand it would tend to confirm the one-fuel habit.

Mr. Hammond reports that the smokeless producers are preparing to give demonstrations throughout New England in the use of that coal. The coke producers are arranging for the movement of increasing quantities of their product into New England. Plans are being made for the preparation of run-of-mine bituminous at New England points.

Governor Fuller, of Massachusetts, estimates that, in addition to convincing New England that it is not dependent on anthracite, the Governors' committee is responsible for savings to consumers of no less than $4,000,000 to date.

While Mr. Hammond has closed his summer home at Gloucester and has taken up his residence at his winter home in Washington, he expects to make frequent trips to New England this winter so as to keep in close touch with the situation there.

## *Nova Scotia Coal Inquiry Under Way Soon*

The commission appointed by the Nova Scotia government to inquire into conditions in the Nova Scotia coal industry, comprising Sir Andrew Rae Duncan, of London, England, chairman; Dr. H. P. Macpherson, president of St. Francois Xavier University, Antigonish, N.S., and Hume Cronyn, of London, Ont., held their initial sitting at Halifax, Nov. 3. Many officials of the British Empire Steel Corporation, representatives of the provincial government and the United Mine Workers were in attendance.

The first step in the proceedings will be an inspection of several of the collieries and it will be several days before witnesses will be called and the formal inquiry commenced. In the meantime officials of the corporation and the miners' union have been asked to prepare lists of the witnesses they wish called.

## Beware of Mr. Pearson

J. C. Pearson, alias Fidelity Coal & Coke Co., alias Globe Coal & Coke Co., Pittsburgh, Pa.; alias J. D. McCabe Coal & Coke Interests, New York, N. Y.; alias Canadian-American Coal & Lumber Syndicate, Chicago, Ill.; alias Pittsburgh - Cleveland Coal Co., of Cleveland, Ohio; alias J. M. Clarke and A. E. Van Arman, according to a report by the Post Office Department, is under indictment in the U. S. Court, Western District of Pennsylvania, for fraudulent use of the mails in connection with the operations of the Fidelity Coal & Coke Co., together with his partner, G. H. Runstadler, of Detroit, Mich. Runstadler has been arrested, but notwithstanding the fact that the indictment was returned at the May term of U. S. Court in 1923, Pearson has not been arrested.

Under his various aliases Pearson has promoted a number of schemes since he left Pittsburgh. His mode of operation was to establish credit with various coal companies in the states of West Virginia, Kentucky, Pennsylvania and Ohio, and have these operators ship coal to Detroit, Cleveland, New York, or wherever he might desire, and then sell the coal for whatever he could get and appropriate the money to his own use.

With his partner he has obtained over $180,000 from customers in the operation of the Fidelity Coal & Coke Co. and perhaps $50,000 from operations by the Globe Coal & Coke Co. Inspectors at New York say that Pearson realized something like $50,000 while operating in New York, and while he was in Cleveland last January he got in the vicinity of $30,000.

The Post Office Department at Pittsburgh is looking for Pearson, who is said to be about 34 years of age, 5 ft. 11 in. tall, rather stout, now wearing a mustache, an inveterate talker, fond of good living, stops at good hotels and is quite a ladies' man.

## Plans Ready for Meeting of West Virginia Institute

Plans for the meeting of the West Virginia Coal Mining Institute at the Hotel Morgan, Morgantown, on Nov. 24 and 25, are practically completed. One of the features of the opening day will be a paper on "The Smokeless Coal of West Virginia," by D. B. Roger, assistant geologist, West Virginia Geological Survey. Other papers which will be presented will be announced later. A banquet will be held in the evening, with addresses by men of wide experience in the coal mining industry.

The second day will be devoted to inspection trips, including a visit to the Nemacolin mine of the Buckeye Coal Co., one of the largest and best equipped mines in the country.

## Named as Institute Officers

The Nominating Committee of the American Institute of Mining and Metallurgical Engineers has presented the following names which will appear on the official ballots when they are circulated next January. Samuel A. Taylor, consulting coal-mining engineer, Pittsburgh, Pa., as stated in *Coal Age*, Oct. 22, leads the list as president. B. O. Mahaffy, Siberian Oil Co., St. Louis, Mo., and Carl A. Meissner, chairman, coke committee, U. S. Steel Corporation, New York City, are nominated as vice-presidents and directors. The other nominees for director are W. S. Hutchinson, S. W. Mudd, R. H. Sales, H. A. Guess and L. K. Armstrong.

## Founder Societies Will Hold Safety Meet in New York

Plans are complete for a joint safety meeting of the American Institute of Electrical Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Civil Engineers, the American Society of Mechanical Engineers with the American Society of Safety Engineers—Engineering Section of the National Safety Council. This will be held Nov. 18 in the auditorium of the Engineering Societies Building, 25 W. 39th St., New York City.

The subjects treated will be "Economic Aspects of Safety," "Organization and Its Work in Accident Prevention," "Engineering Standards and the Safety Movement," "Prone Pressure Method of Resuscitation" and "Standardization and Safety."

Two other subjects will be "Education in Schools and Colleges in the Solution of the Safety Problem," led by E. A. Holbrook, dean, School of Mines, Pennsylvania State College, State College, Pa., and "Safety in Mines," led by J. V. W. Reynders, president of the A.I.M.E., and discussed by B. F. Tillson, New Jersey Zinc Co., Franklin, N. J.

## Extend Reading Coal Rights

The committee on securities of the New York Stock Echange announces that it has received information that the date of expiration of the right to subscribe of Reading Company stockholders to stock of the Philadelphia & Reading Coal & Iron Corporation has been extended from Dec. 31, 1925, to July 1, 1926.

## N. & W. Fights C. & O. for Coal Business

A battle royal for supremacy in the rich coal fields of southern West Virginia is being waged by the Norfolk & Western and the Chesapeake & Ohio, a unit in the Van Sweringen Nickel Plate system. This became evident when the Guyandotte & Tug River R.R., a subsidiary of the Norfolk & Western, filed a petition on Oct. 31 with the Interstate Commerce Commission for permission to construct a road from Wharncliff, in Mingo County, to Elmore, in Wyoming County, a distance of fifty-three miles.

The petition of the Norfolk & Western was not a surprise in view of the fact that last April the Chesapeake & Ohio asked permission to build a road from Gilbert, in Logan County, the terminal of the present Guyan Valley division, to Mullens, in Wyoming County, and from that point to Stonecoal, in Wayne County, the terminus of the Winding Gulf division. With this extension the Chesapeake & Ohio would be able to bid for some of the tonnage now being handled by the Norfolk & Western, and such an extension would afford a much better eastern outlet.

The Norfolk & Western's proposed extension would tap a rich undeveloped coal area. This road already has a connection with the Virginian at Matoaka, but the proposed extension, it is stated, would provide a more desirable connection. The new road would join the Virginian at Matoaka but westbound shipments of coal could be taken from the Winding Gulf field on the Virginian to Elmore and then be moved from that point to Wharncliff, on the proposed line, where the coal would be turned over to the main line. It is asserted that such a routing would be of material assistance in overcoming transportation problems routing the coal by Matoaka. Operators also believe that by building such an extension the Norfolk & Western hopes to strengthen its case in connection with its application to acquire the Virginian.

That the Norfolk & Western Railway will eventually spend $6,000,000 in and around Williamson, W. Va., is indicated from plans to enlarge the railroad yards at that point to a capacity of 4,000 west-bound loads per day, and by negotiation for the entire property of the Leckie Colliery Co., across the river in Kentucky. The railroad desires the colliery company for the bottom land it controls, desiring to get away from the cramped conditions incidental to bringing coal out of Pond Creek territory, which is causing expensive congestion on the railroad bridge crossing Tug River. The Fordson Coal Co., on Pond Creek, is shipping twice as much tonnage as its predecessors and the Portsmouth Bi-Product Coke Co., at Freeburn, has increased its production. A number of mines in the Thacker field have gone far beyond any tonnages heretofore shipped. It is stated that the Norfolk & Western will be electrified from Williamson to the Tug River field, where electrification west-bound has been stopped.

## Production, Imports, Exports and Home Consumption Of Anthracite and Bituminous Coal, 1913-1924

(In Net Tons)

| Calendar Year | Production | Imports | Exports to Canada and Mexico | Exports to Other Countries (Seaborne) | Net Changes in Stocks[a] | Consumption in the United States[b] |
|---|---|---|---|---|---|---|
| Anthracite: | | | | | | |
| 1913 | 91,525,000 | *c* 2,000 | 4,573,000 | 80,000 | + 1,400,000 | 85,474,000 |
| 1914 | 90,822,000 | *c* 9,000 | 4,220,000 | 70,000 | + 2,500,000 | 84,041,000 |
| 1915 | 88,995,000 | *c* 14,000 | 3,854,000 | 111,000 | — 3,100,000 | 88,144,000 |
| 1916 | 87,578,000 | 6,000 | 4,558,000 | 108,000 | — 4,200,000 | 87,118,000 |
| 1917 | 99,612,000 | 13,000 | 5,917,000 | 90,000 | — 450,000 | 94,068,000 |
| 1918 | 98,826,000 | 37,000 | 4,910,000 | 58,000 | + 1,120,000 | 92,775,000 |
| 1919 | 88,092,000 | 83,000 | 4,871,000 | 106,000 | + 1,680,000 | 81,518,000 |
| 1920 | 89,598,000 | 32,000 | 4,987,000 | 417,000 | — 1,560,000 | 85,786,000 |
| 1921 | 90,473,000 | 9,000 | 4,569,000 | 108,000 | + 3,855,000 | 81,950,000 |
| 1922 | 54,683,000 | 234,000 | 2,579,000 | 70,000 | — 4,530,000 | 56,798,000 |
| 1923 | 93,339,000 | 300,000 | 4,993,000 | 97,000 | + 1,635,000 | 86,914,000 |
| 1924 | 87,927,000 | 118,000 | 3,932,000 | 86,000 | + 3,310,000 | 80,717,000 |
| Bituminous: | | | | | | |
| 1913 | 478,436,000 | 1,583,000 | 15,650,000 | 4,495,000 | *d* | 459,874,000 |
| 1914 | 422,704,000 | 1,546,000 | 10,674,000 | 4,784,000 | *d* | 408,792,000 |
| 1915 | 442,624,000 | 1,709,000 | 9,670,000 | 9,107,000 | *d* | 425,556,000 |
| 1916 | 502,520,000 | 1,714,000 | 13,481,000 | 7,774,000 | —11,000,000 | 493,979,000 |
| 1917 | 551,791,000 | 1,448,000 | 18,324,000 | 5,506,000 | *e* | 529,409,000 |
| 1918 | 579,386,000 | 1,457,000 | 18,316,000 | 4,034,000 | +27,900,000 | 530,593,000 |
| 1919 | 465,860,000 | 1,012,000 | 12,064,000 | 8,050,000 | —39,900,000 | 486,658,000 |
| 1920 | 568,667,000 | 1,245,000 | 16,458,000 | 22,059,000 | +20,000,000 | 511,395,000 |
| 1921 | 415,922,000 | 1,258,000 | 13,590,000 | 9,541,000 | + 2,200,000 | 391,849,000 |
| 1922 | 422,268,000 | 5,060,000 | 10,938,000 | 1,475,000 | —12,000,000 | 426,915,000 |
| 1923 | 564,565,000 | 1,882,000 | 16,960,000 | 4,494,000 | +26,000,000 | 518,993,000 |
| 1924 | 483,687,000 | 417,000 | 12,746,000 | 4,354,000 | —17,000,000 | 484,004,000 |

[a] For anthracite the figures are producers' stocks; for bituminous, consumers' stocks. The plus sign denotes coal produced but added to stocks and not consumed, while a minus sign denotes coal consumed that had been withdrawn from stocks carried over from the preceding year. Data on anthracite from cost reports of Federal Trade Commission (Coal, No. 2, p. 27), and hearings before Frelinghuysen Coal Committee, S. Res. 126, 66th Congress, First session (Part I, p. 308). These anthractie figures through 1918 represent coal years, since then calendar years, and are in part estimates. Data on bituminous coal from reports on consumers' stocks of bituminous coal, issued by U. S. Geological Survey, and article, "Is the Coal Shortage Real or Imaginary?" printed in *Coal Age*, Aug. 26, 1920 (p. 429), by C. E. Lesher, formerly coal statistician, U. S. Geological Survey, and director of statistical division, U. S. Fuel Administration.

[b] Production tonnage, plus imports and minus exports, plus or minus the decrease or increase, respectively, of the net change in coal stocks.

[c] Fiscal year ended June 30. [d] No data available. [e] No change.

Data on production, consumption and stocks largely from U. S. Geological Survey reports; import and export figures from records of Bureau of Foreign and Domestic Commerce; issued by U. S. Bureau of Mines

# Monongah Mine to Run Open Shop in West Virginia Union Citadel; Two Companies Sign Baltimore Pact

The United Mine Workers of America received one of the worst setbacks in its industrial struggle in northern West Virginia when the Consolidation Coal Co. announced last week that it would operate mine No. 63, formerly known as No. 8, at Monongah, Marion County, at the 1917 scale. This formerly was the citadel of the union in the district. The Mine Workers retaliated by signing up two companies under the Baltimore agreement in Scotts Run.

Officials of the Consolidation Coal Co. announced during the latter part of last week that more than 60 men were cleaning up the big plant, which had been idle since April. Because of roof falls and other conditions several days would elapse, it was said, before coal was run at the mine. The mine normally employs about 300 men. Incidentally an effort will be made soon to operate the company's extensive beehive coke ovens at Monongah on full time.

Starting Monongah mine is interpreted a decisive step in view of the fact that the largest local union of the United Mine Workers is there. The miners' hall, one of the finest ever erected in any coal region, also is located there. It is the scene of all the union meetings and in it a co-operative motion picture theater is conducted.

Recently the Consolidation Coal Co. reopened O'Donnell mine, No. 57, in Fairmont, located on the Monongahela Ry. at the foot of Palatine Knob, and will be running coal there shortly also.

### Union Signs Two Companies

The two companies which the union announced it had signed under the Baltimore agreement on Nov. 6 are the Tropf Coal Co., which started operation this week, employing 200 men in the Morgantown section of the field, and Satchell Bros., who, it is reported, have leased the By-Product Coal Co. mine in Scotts Run, and will work from 75 to 100 men beginning this week.

According to Patrick Buckley, president of the Monongah local union, "the members of local union No. 1,463 have leased the Hope mine at White Rock and are operating it for the purpose of supplying coal to all those who desire 100 per cent union mined coal." A short time ago the United Mine Workers negotiated for the operation of Josephine mine, in Scotts Run, which was opened on a union basis to furnish coal for members of the union who needed fuel.

The West Virginia Supreme Court of Appeals will hear the motion to dismiss the writ of error granted to Van A. Bittner, chief international representative of the United Mine Workers in northern West Virginia, in Charleston on Dec. 8. Bittner was sentenced for contempt of court by Judge I. Grant Lazelle, of the Monongalia County Circuit Court, in Morgantown, but was granted a writ of error.

It is reported that John S. Forinash, of Grafton, formerly president of Subdistrict No. 3, District No. 17, United Mine Workers, has been selected as commissioner to represent the Consolidation Coal Co. in labor matters. Some weeks ago W. M. Rowan, of Grafton, formerly vice-president of Subdistrict No. 3, was selected by the miners employed by the company to represent them.

Coal mines in the twelve and one-half counties of northern West Virginia produced 600,300 net tons in the week ended Oct. 31, which is the largest since the week ended Sept. 15, 1923. In the first four days of last week the non-union mines produced 6,859 carloads and union mines 1,027 carloads.

A new peak for non-union coal loading in the twelve and one-half counties of northern West Virginia was reached Nov. 6, when 1,883 cars of coal was produced, supplanting the former daily peak of Nov. 5, when 1,810 cars was produced by open shop mines.

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It is announced that the Southern Pacific R.R. is considering going back to coal for steam on its Salt Lake City division. It was stated that no decision had been made yet regarding the date of the change, much depending on the trend of the oil market and the cost of installing stokers. It is said that the coal chutes will be modernized and that equipment to weigh the coal as it passes from the chute to the tender will be installed.

### *New Hoisting Record Set By New Orient Mine*

A new world's record for coal production was set by the New Orient mine, at West Frankfort, Ill., on Nov. 4, when 11,325 tons was hoisted in an 8-hour shift. This mine formerly held the record with 10,313 tons. The number of miners employed totaled 1,050. The mine, which is known as the world's largest, is three years old and is owned by the Chicago, Wilmington & Franklin Coal Co. It employs the skip type hoist.

### Young Succeeds Bedford

The American Section of the International Chamber of Commerce announces the appointment of Owen D. Young as chairman of the American Committee of the International Chamber, succeeding the late A. C. Bedford. Mr. Young has taken an active part in the affairs of the International Chamber even since it was organized at Paris four years ago. Since then he has served as one of the three American directors. He also served as a member of the Economic Restoration Committee of the Chamber, which recently made a world economic survey with a view to making the Dawes plan more fully effective. The survey was submitted to the meeting of the International Chamber meeting at Brussels last June, and steps are now being taken to put into operation the suggestions made by the committee looking to the stabilization of conditions in Europe.

## *Surveys by National Distribution Conference Point Ways to Eliminate Waste in Business*

Waste in business will be the object of a concerted attack by business men at a general meeting of the National Distribution Conference to be held in Washington, Dec. 15 and 16, under the auspices of the Chamber of Commerce of the United States. The call for the meeting was issued Nov. 8.

More than two hundred manufacturers, wholesale and retail merchants, economists, editors, advertising experts and representatives of trade associations and organizations will weigh the methods by which transactions aggregating upward of $50,000,000,000 annually in the United States, as variously estimated, are carried on. They will attempt to point out the practices which are unethical and economically unsound, constituting major sources of waste, and outline methods by which they may be eliminated.

Six surveys, each covering an important aspect of distribution, have been undertaken by six special committees of representative character. The subjects with which they deal and their chairmen are: "Collection of Business Figures," Owen D. Young; "Trade Relations," A. Lincoln Filene, Boston; "Market Analysis, Advertising and Advertising Mediums," Stanley Resor, president of the J. Walter Thompson Co., New York; "Expenses of Doing Business," Robert R. Ellis, Hessig-Ellis Drug Co., Memphis, Tenn.; "Methods of Distribution," L. D. H. Weld, director of research, Swift & Co., Chicago; "General Conditions Affecting Distribution," G. S. Brown, president, Alpha Portland Cement Co., Easton, Pa.

The wide range of problems brought to light in these surveys will be submitted to the National Distribution Conference with a series of recommendations which will form the basis of discussion and will serve as a definite plan of campaign, national in scope, to be conducted by business for the elimination of waste in distribution.

## Fitzmorris Is New President Of Globe Coal Co.

Charles C. Fitzmorris, secretary to Mayors Carter H. Harrison and Willian Hale Thompson, of Chicago, and chief of police during the later years of Mayor Thompson's régime, was elected president of the Globe Coal Co., Chicago, Oct. 29, succeeding George F. Getz.

Since he resigned as chief of police Mr. Fitzmorris has devoted himself to the coal business, starting April 17, 1923, as president of the Eureka Coal Co., a subsidiary of the Globe Coal Co.

Mr. Getz was elected chairman of the board of directors when stockholders of the company elected Mr. Fitzmorris president. Mr. Getz will leave on a trip to Europe aboard the "Belgenland," Nov. 25.

## Coal and Oil Consumption by Public Utilities Increases

Public utility power plants in the United States consumed 3,423,845 net tons of coal in September, according to a report by the U. S. Geological Survey. This compares with 3,341,464 tons in August, as shown by revised figures. Fuel oil consumption by utilities in September totaled 845,528 barrels, compared with 759,622 barrels in July as shown by revised figures.

The average daily production of electricity by public-utility power plants in September was 179,500,000 kw.-hr., 3½ per cent larger than the average daily output for August.

The total output of electricity by public-utility power plants in the United States from January to September, inclusive, in 1925 was 47,570,000,000 kw.-hr., an increase of 10 per cent over the same period for 1924.

## *Workers' Wages Go Further Than at Peak Period*

A broad and distinct tendency toward rising "real" wages, that is wages measured in terms of what the worker can buy with his earnings, is traced by the National Industrial Conference Board, New York, in a comparative study of representative industries.

Increased application of power, better utilization of labor, mechanical ingenuity and managerial efficiency, according to the Conference Board, are steadily tending to reduce unit cost of production, thereby cheapening the general cost of living, with resulting increasing prosperity for all.

While this tendency is not equally noticeable in all industries the differences in wage levels and cost of production are largely attributable to the different degree of efficiency of production prevailing in the respective industries, the Board points out in comparing conditions in major industrial branches.

The concrete result of this increased industrial efficiency, the Conference Board study declares, is reflected in the fact that while the American workman to day, if we measure the purchasing value of his earnings in terms of the same standard of living as prevailed in 1914 but discount the rise in retail prices, is 24 per cent better off than he was at the beginning of the war (in July 1914), and 5 per cent better off than he was at the peak of wage earnings during the inflation period of 1920.

## Is Pinchot "Giant Power" Plan Fallacious?

The administrative board of the American Engineering Council, meeting at Columbus, Ohio, Oct. 29 and 30, authorized the appointment of a committee to review and analyze the "giant power" report issued by Governor Pinchot of Pennsylvania. The reviewing committee is to be chosen by the executive committee of the Council, to which it is to report at the earliest practicable moment.

The board's action, taken unanimously, followed representations that the "giant power" report contains economic fallacies likely to mislead the public. The aim of the analysis is to provide a popular interpretation of the report from an engineering standpoint.

Plans contemplating a nationwide study of public utilities were set in motion by the board, which voted to appoint a committee to determine a definite scheme of investigation and report to the Council at its annual meeting in Washington early in January.

## Temporary Pay Raise Defers Belgian Coal Strike

The decision of the Belgian national mixed mines committee to grant the coal miners a 5 per cent increase in wages for the month of November postponed the strike scheduled to go into effect Nov. 2. Meanwhile, the mining situation will again be considered.

With the purpose of stimulating the market, the government has decided to purchase 50,000 tons of Belgian coal monthly for the railroads. This fuel heretofore has been furnished from German reparation shipments at an actual loss to the government. The coal stocks at present total 41,644,327 tons.

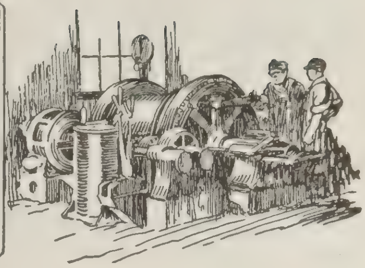
**Chief Winners at International First-Aid and Mine-Rescue Meet**

At the left is the Belleville, Ill., team of the Southern Coal, Coke & Mining Co., which made the highest average in both first-aid and mine-rescue tests at the international meet in Springfield, Ill. Its combined average score was 92.4, which gave it the congressional bronze medallion, the National Safety Council cup and other handsome trophies which are shown here in possession of the winners.

In the photograph are, back row, left to right: James Robertson, superintendent of the mine-rescue station at DuQuoin, Ill.; S. A. Butler, member of the team, but unable to compete because of a broken ankle; James Gatherum, of the American Rolling Mill Co., Zanesville, Ohio, formerly with the Illinois mine-rescue service; W. W. Hunter, superintendent of the Springfield station of the Illinois mine-rescue service. Front row, left to right: Wilbur Beese, "patient," James Dent, Vivian Stuart, Charles Stuart, John Green and David Stuart, captain.

At the right is the American Rolling Mill Co. team of Zanesville, Ohio, which won first place in the first-aid contest with a score of 99.04. This team also took the highest honors among all Ohio teams in its preliminaries. The men in the photograph are, back row left to right: Curt Nagle, captain, James Gatherum, assistant to the supervisor of safety, and Fred McCoy. Front row, left to right: Malcolm Reed, Emmet Lowe, Ralph Frizzle and William Snyder.

# Practical Pointers For Electrical And Mechanical Men



## Home-Made Device Permits Turning Up Tires While on Locomotive

Some time ago, while in the employ of the Davidson Connellsville Coal & Coke Co., it became necessary for me to turn up the tires on a gasoline locomotive. This machine had been in daily service for two years, running on light rails and the tires had become so grooved as to cause trouble. This grooving extended to a depth of about $\frac{1}{2}$ in., being so bad that the machine was knocking the frogs to pieces. It would have been highly inconvenient to send the wheels away to have them turned up and it also would have been quite a job to dismantle the drive gear which is upon the rear axle.

I accordingly got busy and devised the outfit shown in the accompanying illustration with which I removed the false flanges without taking the wheels from under the locomotive. I removed the brake shoes, side rods, rear sand boxes and took out the springs, allowing the journal boxes to go to the top of the frame. Next I removed the oil cellars and made boxings of hard wood lined with half of an old crown brass. The wood box used was of such length that when the pedestal plate was tightened up it held the axle firmly against the regular box without appreciable play. The whole machine was then blocked up from the rails at the ends, so that the wheels were free to turn clear.

The turning rig employed consisted of a steel strap 1 in. thick, 4$\frac{1}{2}$ in. wide and 4$\frac{1}{2}$ ft. long. This was fastened across the frame just ahead of the wheels with two $\frac{5}{8}$ in. U-bolts. A tool carrier was placed on this bar made of the same thickness of iron as the bar itself, the guides being sawed and filed by hand to the proper size and shape. A tool post was next procured and two double-ended turning tools of self tempering steel.

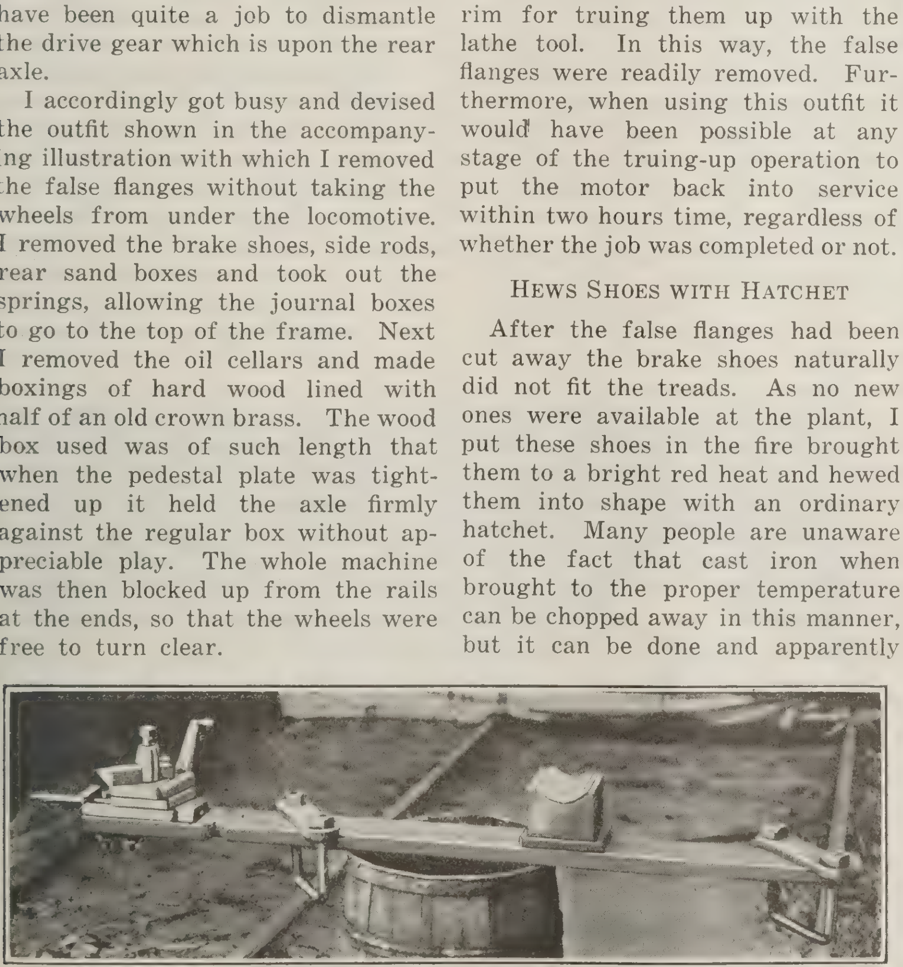
When the motor was started and operated in low gear the drivers had about the proper lineal speed at the rim for truing them up with the lathe tool. In this way, the false flanges were readily removed. Furthermore, when using this outfit it would have been possible at any stage of the truing-up operation to put the motor back into service within two hours time, regardless of whether the job was completed or not.

### Hews Shoes with Hatchet

After the false flanges had been cut away the brake shoes naturally did not fit the treads. As no new ones were available at the plant, I put these shoes in the fire brought them to a bright red heat and hewed them into shape with an ordinary hatchet. Many people are unaware of the fact that cast iron when brought to the proper temperature can be chopped away in this manner, but it can be done and apparently does not injure to any appreciable extent the hatchet used for this purpose.

Charles O'Neil.

Point Marion, Pa.

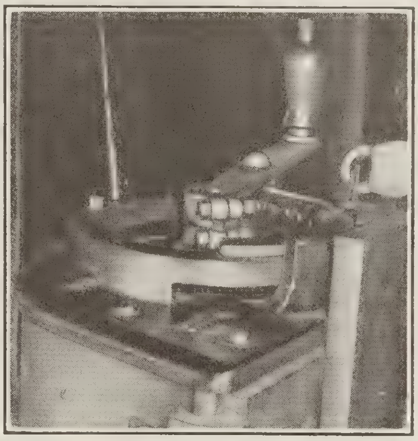


**Simple Equipment for Turning Tire Treads**

With this apparatus the tires may be trued up under the power of the locomotive and without removing the axles from their boxes.

## Padlock Saves Power by Limiting Fan Speed

At a mine where the ventilating fan is equipped with a variable speed motor and control, and where it is not necessary to operate the motor at full speed, it often happens that someone who is not informed as to the proper operating point of the controller, starts the fan and leaves it operating at a speed much faster than necessary. It is not unusual for a superintendent or an engineer, showing a visitor through a mine, to move the controller of the fan back a notch or two and remark: "——— it! Every once in a while I find this fan running faster than necessary."



**Prevents a Power Waste**

A stop locked in position limits the travel of the controller handle and thereby the fan speed. This practically insures operation at the speed designated by the superintendent or engineer.

The fact that at most mines the fan load is practically unvarying 24 hr. a day and, therefore, is responsible for a material portion of the power bill, makes it highly important that the speed be held to a minimum. The accompanying illustration shows how this is done at the mines of the Fordson Coal Co. in Kentucky. A steel segment with a point fitting into a controller notch and locked in the desired position forms a stop for the handle. A fan equipped with this arrangement is never found operating at a higher speed than assigned by the superintendent or engineer.

## Why Did This Motor Heat?

A short time ago a motor in the service of the coal company by which I am employed burned out its bearings. When the armature "poled" the coils became overheated and "shot to ground." This particular machine is of a type that is equipped with waterproof windings that are difficult to repair, the heavy waterproofing requiring removal with a mallet and piece of fiber so sharpened as to form a scraper. The compound was removed, however, and the coils cut out.

In this type of machine the coils are not wound separately but in groups thus obviating stub connections. This, however, increases the difficulty of making repairs. In this case I opened the adjacent coils at the point of diamond or the knuckle and picked up the end that ran to the winding. Of course, this method cuts out some of the turns of a good coil but it is quick and entails less chance of damage through the attempt to find the short stub end near the slot.

The motor was then taken into the mine and connected to the pump that it drives. The mine mechanic reported that it was running very hot, that is, too hot to touch. It was accordingly sent back to the shop and a running test made, the temperature being taken with a thermometer. The motor was operated without load and at the end of 4 hr. registered a temperature of 98 deg. C. As the room temperature was 23 deg. C. the rise amounted to 75 deg. C.

Inasmuch as a class *A* insulation will successfully withstand a difference in room and coil temperature of 90 deg. C. the motor was in no particular danger unless it became appreciably hotter. It was accordingly reconnected to the pump, and after 3 hr. under load registered a temperature of 85 deg. C. The temperature of the mine was 18 deg. C. so that the rise in the temperature of the motor was 67 deg. C.

The question naturally arises why did this motor run hotter without load than when loaded? The reason for this doubtless lies in the fact that the electric shop is at the power plant where the voltage is maintained at approximately 10 per cent above normal to offset line losses and deliver a proper potential at the mine. This motor was wound for 550 volts and operation on a higher potential would probably cause it to heat at the shop more rapidly than within the mine. Eddy currents within the machine are more numerous at high than at low voltages. Their heating effect is consequently greater.

Another reason for the higher temperature attained in the shop as compared to that in the mine was the lower temperature and greater volume of the mine air. In other words, the mine air was in better condition to absorb heat from the motor than was the air in the shop. Then again, the electric conductivity of any metal decreases as its temperature rises so that the conductors of the comparatively cool motor in the mine could carry a bigger current than those of the shop motor.

This action of the motor, as well as that of the mechanic who condemned it, shows the need of having a thermometer available to every man who has charge of motors in any mine. It is impossible to determine with the hand alone whether or not a machine is running too hot. This is because any motor that heats to its allowable 40 or 50 deg. C. rating is too hot to touch comfortably. Furthermore, while the hand is extremely sensitive to even slight differences in temperature it is decidedly inaccurate in locating them on any thermometer scale.

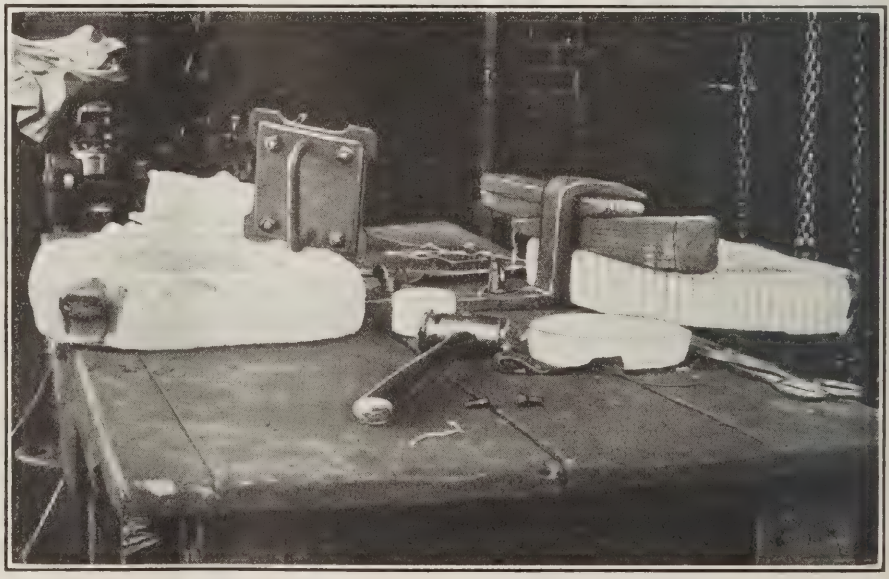
GRADY M. EMERSON,
Alabama Fuel & Iron Co.
Acmar, Ala.

## Clamp and Gage Assist in Retaping Fields

Clearance must necessarily be small between the pole piece and the inside of a field coil, especially on a machine such as a mine locomotive where there is severe vibration and where space is at a premium. Most mine electricians have experienced the trouble of trying to install a field coil in which the hole is just a bit too small to go over the pole piece. This is not an uncommon occurrence with field coils that have been retaped.

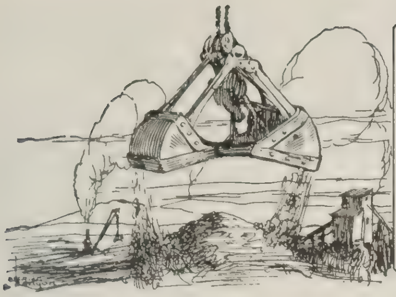
In order to be certain that retaped coils will fit properly in the motor, Bob White, foreman of the winding shop of the Island Creek Coal Co., of Holden, W. Va., uses a gage on each finished coil. This gage consists of a piece of sheet fibre fitted with a metal handle. The corners of the fibre are shaped to correspond with the motor pole piece, but the sides are cut away so that the gage can more easily be tried inside of the coil.

Another device of interest used in retaping field coils is the bench clamp, which can be seen in the accompanying illustration holding a coil in a convenient position. This clamp is nothing more than a Z-shaped iron with slotted holes in the base by which it is fastened with thumb screws to the bench. Two tapered wooden blocks are inserted between the coil and the top of the clamp. While being taped, a heavy field coil is held securely, with any desired overhang beyond the edge of the bench.

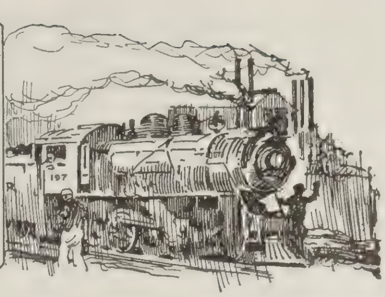


**Test Gage and Bench Clamp Aid Repairman**

Heavy field coils are awkward things to hold while being taped. The photograph shows a coil held in a convenient position, overhanging the bench, by a simple adjustable clamp and two wooden wedges. After the taping is done, the gage, which is lying on the coil at the left, is tried inside to insure proper fitting on the motor pole piece.



# Production And the Market



## Heavy Soft-Coal Output Well Absorbed In Firm Market; Coke Slumps

The growing strength lately in evidence in low-volatile bituminous coal, due to the prolonged suspension of anthracite mining, is now spreading to high-volatile grades. The pick-up continues to be most strongly marked in the prepared sizes, though even mine-run is beginning to improve a little. Screenings also are moving better in Midwest markets and prices have advanced a little. Steam grades are going stronger, full quotas being taken on contracts in most instances.

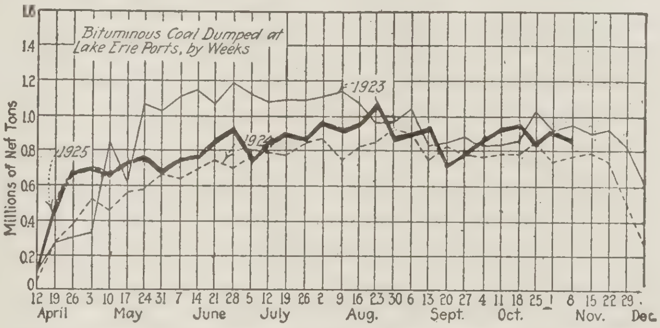
Steady demand for West Virginia smokeless in the East has caused that to be a scarce article in the Middle West, with the result that Illinois, Indiana, eastern and western Kentucky and even Ohio coals are in much more brisk demand and at better prices. In fact, some mines in the eastern Ohio field that have been closed for a year or more are preparing to reopen. Central Pennsylvania coals have been in good demand from Eastern markets and car loadings have been mounting steadily in that field. A sudden slump in demand for egg at Pittsburgh, however, has caused a sharp drop in prices.

New England is an exception in the reports of brisk trade in Atlantic coast markets. Business has been rather colorless with only casual inquiry and prices less firm.

Heavy production, increasing demand and the movement of coal in unaccustomed directions are beginning to bring about a disarrangement of traffic facilities and rolling stock on the railroads that perhaps was inevitable. While car shortages and slower movement are as yet largely local affairs, the likelihood of a spread of such conditions is an eventuality unpleasant to contemplate. Traffic is still heavy through the Cincinnati gateway, 14,975 cars having passed through last week, 2,873 bound for the lakes.

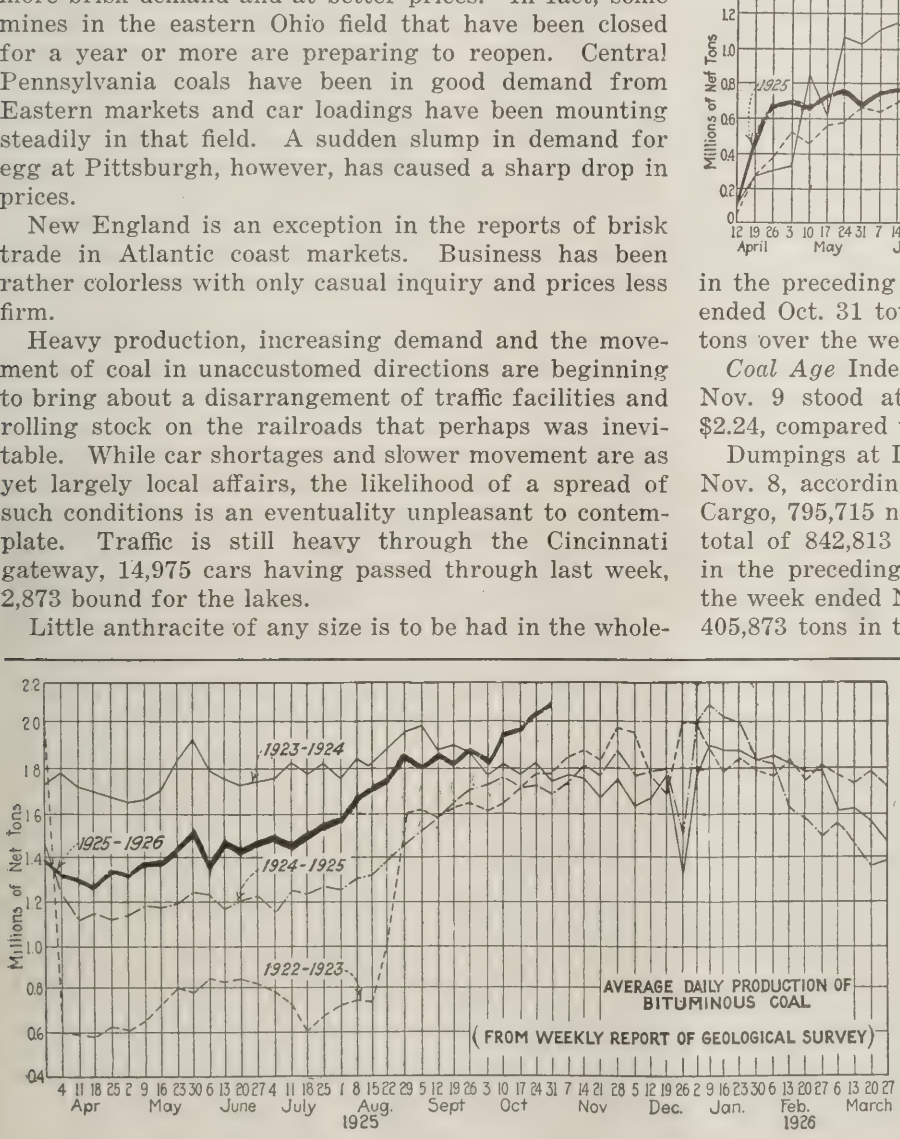
Little anthracite of any size is to be had in the wholesale market. Stocks of pea will soon be exhausted and retail supplies of the larger sizes are dwindling. A sudden let-up in the demand for coke as a hard-coal substitute has brought about a reaction in price, consumers showing a tendency to turn to mine-run soft coal, due to the rapid advance in the prices of prepared coal and coke.

Output of bituminous coal during the week ended Oct. 31 is estimated by the Bureau of Mines at 12,475,000 net tons, the highest weekly output since last January. This compares with 12,088,000 tons produced in the preceding week. Anthracite output in the week ended Oct. 31 totaled 18,000 tons, an increase of 5,000 tons over the week before.



*Coal Age* Index of spot prices of bituminous coal on Nov. 9 stood at 185, the corresponding price being $2.24, compared with 181 and $2.19 on Nov. 2.

Dumpings at Lake Erie ports during the week ended Nov. 8, according to the Ore & Coal Exchange, were: Cargo, 795,715 net tons; steamship fuel, 47,098 tons—a total of 842,813 net tons, compared with 919,425 tons in the preceding week. Hampton Roads dumpings in the week ended Nov. 5 totaled 398,123 net tons, against 405,873 tons in the previous week.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| Oct. 17 | 10,599,000 | 11,770,000 |
| Oct. 24 (*a*) | 10,645,000 | 12,088,000 |
| Oct. 31 (*b*) | 10,405,000 | 12,475,000 |
| Daily average | 1,734,000 | 2,079,000 |
| Cal. yr. to date | (*c*) 392,194,000 | 419,368,000 |
| Daily av. to date | 1,525,000 | 1,628,000 |
| **ANTHRACITE** | | |
| Oct. 17 | 1,750,000 | 17,000 |
| Oct. 24 | 1,927,000 | 13,000 |
| Oct. 31 | 1,444,000 | 18,000 |
| Cal. yr. to date | (*c*) 75,654,000 | 61,741,000 |
| **COKE** | | |
| Oct. 24 (*a*) | 140,000 | 224,000 |
| Oct. 31 (*b*) | 150,000 | 261,000 |
| Cal. yr. to date | (*c*) 8,083,000 | 8,194,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Screenings Firmer in Middle West

There have been but few changes in the Midwest coal market during the past week. Illinois operators do not seem to have any trouble in getting sufficient orders for lump coal, but still have considerable difficulty in moving prepared coal in the smaller sizes. The screenings market is bringing much better prices than for several weeks. In the Indiana field the better grades are pretty well sold up, except the smaller prepared coals. No No. 4 Indiana screenings are available. Mines producing No. 5 Indiana coal still have considerable difficulty in moving prepared sizes, whereas there is a brisk demand for screenings, which are rather scarce. Western Kentucky prices have advanced to a new high level. Some companies have raised the price on lump to $2.50, whereas only a month ago it sold at $1.85.

West Virginia and eastern Kentucky prices have been advancing right along with hardly any coal available. Coals from eastern Kentucky and good West Virginia splint are now bringing $3.50 in this territory and west of here, and a number of dealers with little coal in their bins are willing to pay almost any price to get car numbers within forty-eight hours.

The few cars of New River and Pocahontas coal that can be had in Chicago at present are held by jobbers for a premium. Business is rather dull on these coals, except where the dealer is forced to pay the price in order to satisfy some of his trade.

Seasonable weather is evidence of the working time of southern Illinois mines and the movement of lump and egg. Most mines are several weeks behind on lump shipments, egg is about even, but all the nut sizes are slow with the exception of No. 2, which seems to be moving well. This represents the condition at the shaft mines in the Carterville field and also in the Harrisburg field. Mines are getting four and five days a week. Railroad tonnage is running light and car shortage is showing up on nearly all roads. The movement of loads from the mine is not what it should be, everything considered, and indicates serious trouble and delayed movement later when the weather gets bad. Strip mines seem to have a good market for everything and some of them are even crushing the smaller sizes. In the Duquoin field there is some improvement but no railroad tonnage. Prices in all these fields remain unchanged.

In the Mt. Olive district the improvement perhaps is greater than in any other field in the state. Mines are working practically full time and railroad tonnage is good. Domestic tonnage is unusually good with a market that seems to take care of all the steam sizes. There has been an increase in the price of this coal for shipment to the country from $2.75 to $3. St. Louis prices advanced from $2.50 to $2.75 on domestic sizes. In the Standard field there isn't any change in conditions. It is a hand-to-mouth game with a little more working time perhaps this week than heretofore, but prices are about at cost of production and nearly all mines have "no bills" of the smaller sizes

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Nov. 10 1924 | Oct. 26 1925 | Nov. 2 1925 | Nov. 9 1925† |
|---|---|---|---|---|---|
| Smokeless lump......... | Columbus.... | $4.35 | $4.85 | $4.85 | **$5.00@$5.50** |
| Smokeless mine run...... | Columbus.... | 2.05 | 2.50 | 2.35 | 2.25@ 2.50 |
| Smokeless screenings..... | Columbus.... | 1.35 | 2.05 | 2.05 | 2.00@ 2.15 |
| Smokeless lump......... | Chicago..... | 4.60 | 5.75 | 5.75 | **6.00@ 6.50** |
| Smokeless mine run...... | Chicago..... | 1.85 | 2.25 | 2.25 | **2.25@ 2.75** |
| Smokeless lump......... | Cincinnati... | 3.85 | 6.00 | 6.25 | *5.00@ 6.00* |
| Smokeless mine run...... | Cincinnati... | 1.90 | 2.50 | 2.35 | **2.50@ 2.60** |
| Smokeless screenings..... | Cincinnati... | 1.15 | 2.00 | 1.95 | **2.00** |
| *Smokeless mine run..... | Boston...... | 4.30 | 4.60 | 4.95 | *4.90@ 5.00* |
| Clearfield mine run...... | Boston...... | 1.95 | 1.90 | 2.05 | **1.85@ 2.35** |
| Cambria mine run....... | Boston...... | 2.40 | 2.25 | 2.35 | **2.10@ 2.75** |
| Somerset mine run....... | Boston...... | 2.15 | 2.00 | 2.15 | **1.90@ 2.50** |
| Pool 1 (Navy Standard).. | New York... | 2.75 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pool 1 (Navy Standard).. | Philadelphia.. | 2.70 | 2.65 | 2.65 | **2.80@ 3.10** |
| Pool 1 (Navy Standard).. | Baltimore.... | 2.30 | 2.15 | 2.15 | 2.10@ 2.20 |
| Pool 9 (Super. Low Vol.). | New York... | 2.10 | 2.20 | 2.20 | **2.15@ 2.35** |
| Pool 9 (Super. Low Vol.). | Philadelphia.. | 2.15 | 1.95 | 1.95 | **2.20@ 2.45** |
| Pool 9 (Super. Low Vol.). | Baltimore.... | 1.70 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pool 10 (H.Gr.Low Vol.).. | New York... | 1.85 | 2.00 | 1.95 | **1.85@ 2.15** |
| Pool 10 (H.Gr.Low Vol.).. | Philadelphia.. | 1.75 | 1.85 | 1.85 | **2.00@ 2.15** |
| Pool 10 (H.Gr.Low Vol.).. | Baltimore... | 1.55 | 1.80 | 1.80 | 1.80@ 1.85 |
| Pool 11 (Low Vol.)....... | New York. . | 1.60 | 1.80 | 1.80 | *1.60@ 1.75* |
| Pool 11 (Low Vol.)....... | Philadelphia. | 1.45 | 1.70 | 1.70 | **1.85@ 2.00** |
| Pool 11 (Low Vol.)....... | Baltimore... | 1.45 | 1.55 | 1.55 | 1.50@ 1.60 |

| High-Volatile, Eastern | Market Quoted | Nov. 10 1924 | Oct. 26 1925 | Nov. 2 1925 | Nov. 9 1925† |
|---|---|---|---|---|---|
| Pool 54-64 (Gas and St.).. | New York... | 1.50 | 1.55 | 1.55 | 1.50@ 1.65 |
| Pool 54-64 (Gas and St.).. | Philadelphia'. | 1.50 | 1.60 | 1.60 | **1.55@ 1.70** |
| Pool 54-64 (Gas and St.).. | Baltimore.... | 1.45 | 1.55 | 1.55 | 1.55@ 1.60 |
| Pittsburgh sc'd gas....... | Pittsburgh... | 2.40 | 2.75 | 2.85 | 2.75@ 3.00 |
| Pittsburgh gas mine run.. | Pittsburgh... | 2.10 | 2.30 | 2.35 | 2.25@ 2.50 |
| Pittsburgh mine run (St.). | Pittsburgh... | 1.85 | 2.15 | 2.20 | 2.15@ 2.25 |
| Pittsburgh slack (Gas).... | Pittsburgh... | 1.15 | 1.40 | 1.30 | 1.25@ 1.35 |
| Kanawha lump.......... | Columbus.... | 2.55 | 2.60 | 2.60 | 2.45@ 2.80 |
| Kanawha mine run....... | Columbus.... | 1.55 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings...... | Columbus.... | 1.00 | 1.30 | 1.30 | *1.15@ 1.25* |
| W. Va. lump........... | Cincinnati... | 2.60 | 2.75 | 2.75 | **3.00@ 3.50** |
| W. Va. gas mine run..... | Cincinnati... | 1.45 | 1.60 | 1.60 | **1.65@ 2.00** |
| W. Va. steam mine run... | Cincinnati... | 1.30 | 1.55 | 1.55 | **1.50@ 1.75** |
| W. Va. screenings........ | Cincinnati... | .95 | 1.15 | 1.25 | **1.25@ 1.50** |
| Hocking lump........... | Columbus.... | 2.55 | 2.70 | 2.70 | **2.50@ 3.00** |
| Hocking mine run........ | Columbus.... | 1.60 | 1.65 | 1.65 | 1.50@ 1.85 |
| Hocking screenings....... | Columbus.... | .75 | 1.30 | 1.30 | *1.15@ 1.25* |
| Pitts. No. 8 lump........ | Cleveland.... | 2.30 | 2.45 | 2.55 | 2.10@ 3.00 |
| Pitts. No. 8 mine run..... | Cleveland.... | 1.75 | 1.95 | 1.95 | *1.85@ 1.95* |
| Pitts. No. 8 screenings.... | Cleveland.... | 1.00 | 1.35 | 1.45 | *1.35@ 1.50* |

| Midwest | Market Quoted | Nov. 10 1924 | Oct. 26 1925 | Nov. 2 1925 | Nov. 9 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump....... | Chicago..... | $3.35 | $3.25 | $3.25 | $3.25 |
| Franklin, Ill. mine run.... | Chicago..... | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings.... | Chicago..... | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Central, Ill. lump........ | Chicago..... | 2.85 | 2.85 | 2.85 | 2.75@ 3.00 |
| Central, Ill. mine run..... | Chicago..... | 2.20 | 2.20 | 2.20 | 2.15@ 2.25 |
| Central, Ill. screenings..... | Chicago..... | 1.25 | 1.55 | 1.55 | 1.35@ 1.75 |
| Ind. 4th Vein lump...... | Chicago..... | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run... | Chicago..... | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings.. | Chicago..... | 1.45 | 1.60 | 1.60 | **1.75@ 1.90** |
| Ind. 5th Vein lump...... | Chicago..... | 2.85 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run... | Chicago..... | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings.. | Chicago..... | 1.10 | 1.40 | 1.40 | 1.35@ 1.50 |
| Mt. Olive lump.......... | St. Louis..... | 3.00 | 2.50 | 2.50 | **2.75@ 3.00** |
| Mt. Olive mine run...... | St. Louis..... | 2.35 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings..... | St. Louis..... | 1.10 | 1.75 | 1.75 | 1.75 |
| Standard lump.......... | St. Louis..... | 2.75 | 2.25 | 2.25 | 2.25 |
| Standard mine run....... | St. Louis..... | 1.95 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings...... | St. Louis..... | .60 | 1.15 | 1.15 | 1.15 |
| West Ky. block.......... | Louisville.... | 3.05 | 2.00 | 2.05 | **2.00@ 2.25** |
| West Ky. mine run...... | Louisville.... | 1.60 | 1.35 | 1.35 | 1.20@ 1.50 |
| West Ky. screenings...... | Louisville.... | .70 | 1.05 | .90 | *.65@ 1.00* |
| West Ky. block.......... | Chicago..... | 2.75 | 2.05 | 2.05 | **2.25@ 2.50** |
| West Ky. mine run...... | Chicago..... | 1.65 | 1.25 | 1.25 | 1.15@ 1.35 |

| South and Southwest | Market Quoted | Nov. 10 1924 | Oct. 26 1925 | Nov. 2 1925 | Nov. 9 1925† |
|---|---|---|---|---|---|
| Big Seam lump.......... | Birmingham.. | 3.10 | 2.25 | 2.25 | $2.00@ 2.50 |
| Big Seam mine run....... | Birmingham.. | 1.70 | 1.80 | 1.75 | 1.50@ 2.00 |
| Big Seam (washed)....... | Birmingham.. | 1.85 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block.......... | Chicago..... | 2.85 | 3.00 | 3.00 | **3.25@ 3.50** |
| S. E. Ky. mine run....... | Chicago..... | 1.60 | 1.95 | 1.95 | 1.85@ 2.10 |
| S. E. Ky. block.......... | Louisville.... | 3.25 | 2.75 | 3.10 | **3.25@ 3.75** |
| S. E. Ky. mine run....... | Louisville.... | 1.60 | 1.50 | 1.50 | **1.50@ 1.75** |
| S. E. Ky. screenings...... | Louisville.... | .90 | 1.25 | 1.20 | **1.25@ 1.50** |
| S. E. Ky. block.......... | Cincinnati... | 2.60 | 3.25 | 3.25 | **3.25@ 3.50** |
| S. E. Ky. mine run....... | Cincinnati... | 1.45 | 1.60 | 1.60 | **1.50@ 2.00** |
| S. E. Ky. screenings....... | Cincinnati... | 1.00 | 1.20 | 1.25 | **1.25@ 1.50** |
| Kansas lump............ | Kansas City.. | 5.00 | 4.60 | 4.85 | **5.00** |
| Kansas mine run......... | Kansas City.. | 3.35 | 3.00 | 3.10 | **3.25** |
| Kansas screenings........ | Kansas City.. | 2.00 | 2.30 | 2.30 | 2.25@ 2.35 |

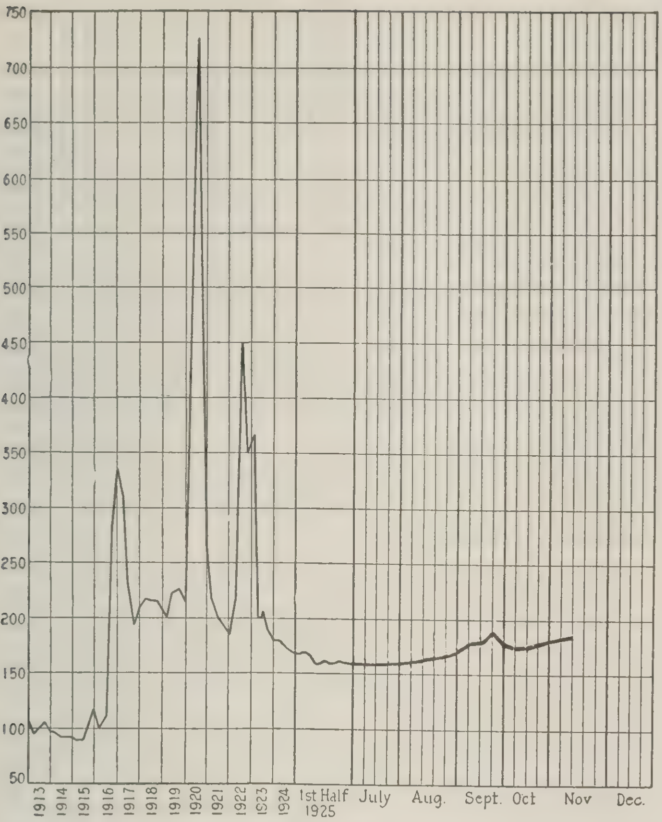
* Gross tons, f.o.b. vessel, Hampton Roads.

† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | November 10, 1924 | | November 2, 1925 | | November 9, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken............ | New York......... | $2.34 | ............ | $8.00@$9.25 | ............ | $8.20@$8.95 | ............ | $8.20@$8.95 |
| Broken. .......... | Philadelphia........ | 2.39 | ............ | 9.15 | ............ | ............ | ............ | ............ |
| Egg............... | New York......... | 2.34 | $8.75@$9.50 | 8.75@ 9.25 | ............ | 8.65@ 8.90 | ............ | 8.65@ 8.90 |
| Egg............... | Philadelphia........ | 2.39 | 9.45@ 9.75 | 8.80@ 9.25 | ............ | ............ | ............ | ............ |
| Egg............... | Chicago*.......... | 5.06 | 8.17@ 8.25 | 8.14@ 8.20 | $9.50@10.00 | 8.03@ 8.28 | $9.50@$10.00 | 8.03@ 8.25 |
| Stove............. | New York......... | 2.34 | 9.75@10.50 | 8.75@ 9.50 | ............ | 9.15@ 9.40 | ............ | 9.15@ 9.40 |
| Stove............. | Philadelphia........ | 2.39 | 10.10@10.75 | 9.15@ 9.50 | ............ | ............ | ............ | ............ |
| Stove............. | Chicago*.......... | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@11.00 | 8.48@ 8.80 | 10.00@11.00 | 8.48@ 8.80 |
| Chestnut.......... | New York......... | 2.34 | 9.75@10.00 | 8.75@ 9.25 | ............ | 8.65@ 8.95 | ............ | 8.65@ 8.95 |
| Chestnut.......... | Philadelphia........ | 2.39 | 9.75@10.50 | 9.15@ 9.25 | ............ | ............ | ............ | ............ |
| Chestnut.......... | Chicago*.......... | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@11.00 | 8.50@ 8.75 | 10.00@11.00 | 8.50@ 8.75 |
| Pea............... | New York......... | 2.22 | 5.00@ 5.50 | 5.50@ 6.00 | ............ | 5.00@ 6.25 | ............ | 5.00@ 6.25 |
| Pea............... | Philadelphia........ | 2.14 | 5.75@ 6.00 | 6.00 | ............ | 5.00@ 6.25 | ............ | ............ |
| Pea............... | Chicago*.......... | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 |
| Buckwheat No. 1.... | New York......... | 2.22 | 2.00@ 2.50 | 3.00@ 3.15 | ............ | 2.50@ 2.75 | ............ | 2.50@ 2.75 |
| Buckwheat No 1..... | Philadelphia........ | 2.14 | 2.50@ 3.00 | 3.00 | ............ | 2.50@ 3.00 | ............ | 2.50@ 3.00 |
| Rice.............. | New York......... | 2.22 | 1.75@ 2.25 | 2.00@ 2.25 | ............ | 2.25 | ............ | 2.25 |
| Rice.............. | Philadelphia........ | 2.14 | 2.00@ 2.25 | 2.25 | ............ | 2.25 | ............ | ............ |
| Barley............ | New York......... | 2.22 | 1.25@ 1.50 | 1.50 | ............ | 2.25 | ............ | 2.25 |
| Barley............ | Philadelphia........ | 2.14 | 1.50 | 1.50 | ............ | 1.50 | ............ | ............ |
| Birdseye.......... | New York......... | 2.22 | 1.35@ 1.60 | 1.60 | ............ | ............ | ............ | ............ |

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Nov. 9 | Nov. 2 | Oct. 26 | Nov. 10 |
| Index | 185 | 181 | 178 | 170 |
| Weighted average price | $2.24 | $2.19 | $2.15 | $2.06 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

on hand which they are unable to move. Railroad tonnage is reported light and buyers usually fix their own prices. Car shortage shows up slightly in this field.

Domestic movement of coal is fairly good to St. Louis, everything seeming to move from Carterville down to Mt. Olive and even Standard—on account of the weather. Apartment house storage is understood to be pretty well in and also school storage. There is an increased demand for coke noticeable locally, but anthracite and smokeless are slow. Public buying is in smaller quantities this year than heretofore. Country demand is fairly good for middle grade coals and the movement of west Kentucky in St. Louis proper is gradually increasing. Country dealers also are taking readily to the west Kentucky product. Country steam is quiet and local carload is fairly active while local wagonload steam is unusually good. Prices are unchanged.

There is a heavy movement of coke from the St. Louis market to as far east as Buffalo, Toronto and intermediate territory. The movement averages seventy-five cars a day from the St. Louis switching limits, some going to Chicago.

### Demand Taxes Kentucky Railroads

Cold weather, along with the Eastern situation and slow deliveries of fuel from the mines, has brought about keener demand and advancing prices in Kentucky. Domestic and steam call are both picking up. Mines are having car troubles in both eastern and western Kentucky. Some of the eastern Kentucky mines report that there is no actual shortage of empties, but that the roads can't move the heavy traffic. Some mines lost two or three days last week on account of traffic conditions.

The general market on best eastern Kentucky block is $3@$3.50 for the bulk of the movement, with better grades at $3.75@$4. Fancy specialty coals are being quoted as high as $4.50 and it is reported that the price is being paid. Lump and egg are around $2.50@$3; nut, $2.50@$2.75; mine-run, $1.50@$1.75, and screenings are higher, at $1.25 @$1.40.

In Western Kentucky 6-in. block is $2@$2.35; lump and egg, $1.90@$2.10; nut, $1.35@$1.50; mine-run, $1.20@$1.50, and screenings, 65c.@90c., the west Kentucky screenings market being lower due to large production and free offerings.

### Activity Unabated in Northwest

No letup is noticeable in shipments from Duluth and Superior docks. Buying by industrial companies has been even stronger during the last ten days, iron mining companies on the Minnesota ranges are buying more steam coal than in some time and retailers have been coming in with re-orders.

Demand for Pocahontas and other smokeless bituminous coals as substitutes for anthracite continue to be an outstanding feature. Dealers have fair supplies of Pocahontas. Its market is persistently stiffening, an advance of 50c. in prepared sizes having been announced this week, making the figure $9. Mine-run and screenings are unchanged at $5.50 and $4.25 respectively. While supplies of Pocahontas screenings are accumulating on the docks, the trade is generally sanguine that they will all be needed for special purposes before the season ends.

Anthracite on the docks will be practically exhausted within two months. An advance of 15c. on nut and 50c. on pea was announced this week, making the line-up as follows on docks: Egg, $13.20; stove, $13.60; nut, $13.60; pea, $11.50, and buckwheat, $6.50. Pea and buckwheat have both been in demand lately to mix with coke as an anthracite substitute. Domestic coke is unchanged at $8.50 and briquets are unchanged at $9.

Thirty cargoes via the lakes were unloaded at the docks and seventeen cargoes were reported en route. Bituminous stocks on the docks here total 3,400,000 tons, of which around 2,000,000 belong to the railroads.

Milwaukee dock managers report hard coal virtually out of the market and the better grades of soft coal looking up because of the enormous demand upon the mines. Consumers who can use soft coal are calling for that fuel, and those who cannot burn soft coal are turning to coke. The better grades of bituminous coal have advanced $1.50 in Milwaukee, with a prospect of still higher figures. The little anthracite in some hands is retailing at $18.55 for stove, $18 for chestnut, $16 for pea and $11.75 for buckwheat, with 75c. deducted when fuel is not carried to the bins. Pocahontas egg and lump sell for $14.50, range size for $9.50 and mine-run for $8, with 75c. added for carrying to bins. No hard coal has been received by cargo in Milwaukee since Sept. 15. The receipts for the season up to Nov. 6 total 3,161,701 tons—488,234 tons of anthracite and 2,673,467 tons of bituminous coal.

### Orders Keep Southwest Operators Hustling

While the Southwestern market this year is immediately responsive to changes in temperature, orders have piled up in such quantity during recent cold snaps that mines would be assured of full working time for at least two weeks if the demand should cease entirely. Operators are, for the most part, two weeks behind with deliveries of Kansas lump and from two days to a week on nut. Even screenings have been affected by the brisk demand. All surpluses have been cleaned up in the field and some operators are two or three days short. The result of the general activity has been more firmly to establish the price of $5 for Kansas shaft lump and to steady screenings quotations around $2.35, although some are to be had at $2.25. Kansas shovel lump is bringing $4.50@$4.75, with quotations for other shovel grades the same as those for shaft.

In Colorado there has been a splendid demand for domestic lump and nut and steam sizes of coal for the past week, the mines working full time and some of them on double shift. Some operators are booked up for the entire month of November. All mines are operating without any interruption by transportation and labor.

As a result of the increased demands prices were advanced 50c. per ton Nov. 1. Walsenburg-Canon City lump coal is $6; washed nut, $5; washed chestnut, $3; Trinidad 6-in. coking coal for domestic and steam uses, $4.25; 3-in., $4; nut, $3.50; Crested Butte high-grade anthracite Nos. 1 and 2 (furnace size), $7.25; Nos. 3 and 5 (baseburner size),

$7.75; Horace Nos. 1 and 2 (furnace size), $9; Nos. 3 and 5 (baseburner size), $9.

Working time in the Utah coal fields is improving as a result of the first signs of winter. Dealers report rush orders. The demand for coal for heating purposes is on a serious scale for the first time this season. There is plenty of coal in dealers' yards and the car situation is generally good, so there is not likely to be a coal shortage, regardless of the weather. Demand for slack is much better again. Nut and stove are moving less freely than other sizes, but no size could be said to be a drug on the market at this time. The demand for Utah coal outside of the state is said to be about normal for the season. The price situation is unchanged and there is an abundance of labor.

### Trade Generally Firm at Cincinnati

Car shortage in an aggravated form and a flood of buying orders did the expected to the high-volatile market at Cincinnati this week. The basis on block, 4-in. and 6-in. lump rose to $3.25 with the market closing strong. Taking two to three days a week in production away from the southeastern Kentucky market seems to have been the thing that started prices to run away. Cold weather also must be reckoned in.

Egg and 2-in kept pace, with $2.75 as the low and $3 asked for the better grades. Some specialized coals from the Elkhorn and Hazard districts went as high as $3.25@$3.50. Mine-run was a little slow in getting started, but by Saturday $2 asked was not infrequently heard for the better types, especially gas coals and malleables. Some stuff still could be had around $1.50@$1.65 for steam purposes, but this was getting scarce and was eagerly picked up. Screenings and slack were sought with the rise and sales at $1.40@$1.50 were reported, though the general spread was closer to $1.25@$1.50.

Movement to the lakes continues heavy, though the end of the season is approaching; 2,873 cars moved lakeward last week, a decrease of 251 cars. In all, 14,975 cars passed through the Cincinnati gateway.

In the smokeless market an effort is being made to get prices in better alignment. Inland dealers are raising a rumpus and it has been difficult to get them interested in $6 coal. They'd rather take high volatiles. Trading on a $5 basis is much better. The East is still taking $6 egg and nut, but sales are slackening some. In fact some companies made their price $5.50@$6 for later deliveries rather than touch any of the spot business at the top. Mine-run stiffened some, $2.50@$2.60 being the price named. Screenings were solid at $2.

Columbus is slowly digesting the price advances of Nov. 1 and consequently buying is not quite so active, although the market continues firm as to domestic sizes. Retail prices have been advanced in sympathy with higher prices at the mines. Some car shortage is reported. There is practically no free coal on the market as far as domestic sizes is concerned and thus no cheap cargoes to be picked up.

Steam business is still rather spotty and quiet. Buying by large users is for current needs mostly, although some show a tendency to stock up. Screenings are slightly weaker, owing to a larger production of lump and prepared grades. Considerable mine-run is now going into the lake trade and that has been one of the best features.

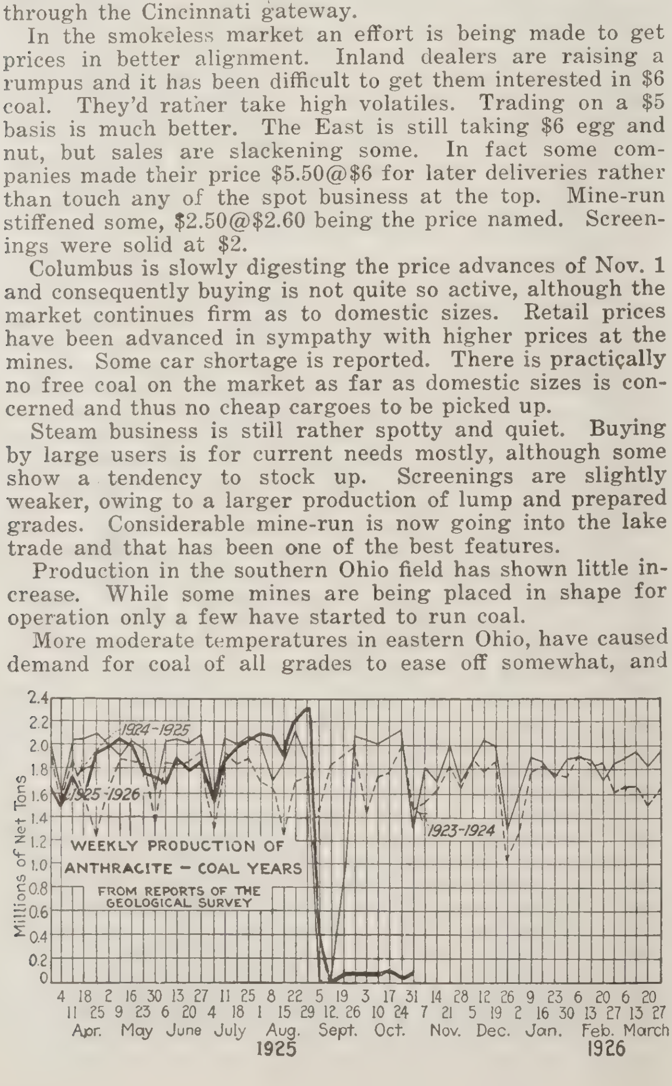
Production in the southern Ohio field has shown little increase. While some mines are being placed in shape for operation only a few have started to run coal.

More moderate temperatures in eastern Ohio, have caused demand for coal of all grades to ease off somewhat, and spot prices are softer by 5c. to 10c. per ton compared with a week ago.

With immediate needs of domestic consumers at least temporarily taken care of, retail orders at the mines are not so strong. However, local quotations on Pocahontas lump are still $6 per ton f.o.b. mines, due to the unusually heavy demand in the East. West Virginia and eastern Kentucky domestic lump is quoted at $3.25@$3.50 per ton, f.o.b. mines. As retailers have been unable to get quick deliveries on Southern grades, Ohio mines preparing coal for domestic use have had a heavier demand of late.

Steam orders are mostly for small lots as compared with previous seasons, as the larger consumers are not at all apprehensive as to their ability to continue to get coal as needed. The railroads have been taking full commitments on contracts and shipments to the lakes trade has been unusually heavy for the late season. The market is readily absorbing most of the coal offered.

Production in the eastern Ohio field during the week ended Oct. 24 was the largest of any week of the year—313,000 tons, or about 45 per cent of capacity. During the week ended Oct. 31 output was 309,000 tons, the second largest thus far this year.



### Eastern Demand Relaxes at Pittsburgh

While there is a fair run of industrial and railroad buying of coal and heavier buying of domestic coal in tributary territory the feature of the Pittsburgh district coal market for a while was the demand from the East. The Eastern call for egg suddenly slumped, however, and as sellers have lately been reserved, on account of advancing prices, there were promptly heavy offerings and the price broke sharply. It is now impossible to obtain more than $3.25 from Eastern buyers for shaker screen egg coal, the best prepared of all. The market had been $4.50@$5 and $5.25 was obtained on a few sales. The reaction is attributed to heavier offerings of West Virginia smokeless. Slack is weak but has not receded beyond the decline of a week ago.

The bituminous trade proper at Buffalo is as dull as ever. The regular trade does not want slack and it is more or less indifferent to anything else. Prices cannot be said to have gone off, for they probably will hold till the substitute fuel is out of the market, but there is enough smokeless and screened lump going into cellars to create an interest in the entire trade, especially as prices are a dollar or two up.

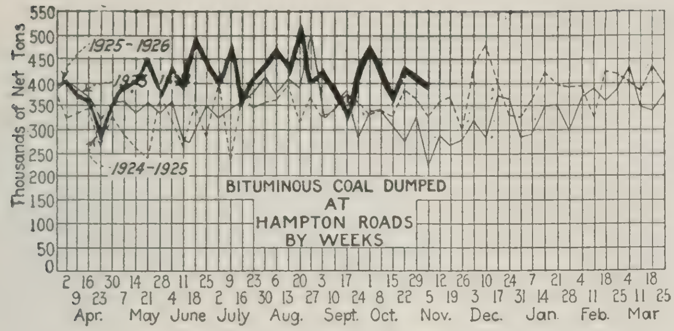
### New England Market Lacks Color

A colorless market has ruled in New England in the past week. For mine-run steam coal there has been only casual inquiry, and prices are now hardly as firm as when last reported. Larger accumulations are in evidence both at Hampton Roads piers and on rehandling wharves at this end. There is so much complaint of slack in cargoes that come forward that retail dealers have little comfort in relying on any considerable proportion of lumps to offer as substitutes for anthracite. As between Welsh anthracite, coke and screened bituminous dealers are feeling their way and making purchases of pea and buckwheat wherever possible.

High-grade smokeless coals f.o.b. vessels at Newport News and Norfolk are held at prices seesawing around $4.90@$5, with only light tonnages being placed on the spot market. Slack is again a drug on the market, and new low figures have been made quietly to move accumulations. The lucrative prices now being realized for lump, egg and nut have tended to increase the available supply of slack.

Quotations on cars Boston and Providence are within easy range of $6 per gross ton. Spasmodic efforts have been made to advance the figure to $6.50, but conditions now do not warrant any such level. At retail in Boston the delivered price of steam coal is now $8, while $12 is being asked for lump for domestic use.

The Pocahontas and New River interests are active in trying to place prepared sizes in this market, although for the present, owing to rate differentials, they are restricting their efforts to areas reached by the N. Y., N. H. & H. On Nov. 6 the smokeless operators held a conference in Boston with representatives of the New England Governors' committee and set on foot plans for systematic merchandising of screened bituminous. The trade itself, however, which in all these negotiations has been very little con-



sulted, continues to show a marked preference for Welsh anthracite, English ovoids and even Scotch coke. And even of these substitutes the dealers thus far have bought only sparingly.

All-rail from Pennsylvania there is any quantity of good coal that can be bought at $2.25@$2.50 per net ton, f.o.b. mines, but continuing low prices on Pocahontas and New River from tidewater points give the latter the preference.

## New York Trade Firm but Not Spectacular

Bituminous prices at New York are fairly steady, advancing only in spots. Failure to show a more buoyant tone is not due to lack of buying, which is brisk, but to the fact that supply has fully kept pace with requirements except for special grades of coal.

Domestic screened coal is holding firm at the prices prevailing for the past few weeks. The point seems to have been reached where buyers prefer mine-run rather than bid higher for the limited amount of prepared coal that is available.

Central Pennsylvania operators who are equipped to ship egg and stove sizes are selling them for $6.50@$8 a ton, the Broad Top coals commanding the maximum figure. Screened lump is bringing $4.50@$5.50. High-volatile egg and stove sizes command around $4.50@$5, with some producers quoting as high as $5.50.

There has been a decided improvement in the Philadelphia market, the improved demand for coal being due to the anthracite suspension. As yet the usual consumer of soft coal, however, seems a bit indifferent. Customers with contracts are taking their regular allotments. Prices generally have moved upward and probably will continue to do so, as the demand for coal from the former anthracite market shows no signs of abatement.

The soft-coal market at Baltimore is a rather mixed affair. Industrial demand is no more brisk than it has been for several weeks past and the price of run-of-mine coals continue on the same basis that has applied for at least three weeks. Prepared sizes, however, are in active demand at $5.50@$7.50 per ton as a result of the hard coal strike. There has been a pronounced slump in the export coal trade from Baltimore.

Cool, crisp weather is having a favorable effect on the domestic trade at Birmingham. Orders are coming in to retailers in sufficient numbers to keep them fairly busy, and more liberal shipments are being taken on contracts by dealers. Spot demand is good and the volume of business being booked is sufficient, with contract commitments, to move current output without any worth-while delay. Demand for the better grades is the more pronounced, and most of the business placed is for immediate shipment.

The market for commercial coal is very active and the demand for the better grades is sometimes in excess of the supply immediately available, and this condition is serving to lend more strength to the demand for medium and lower qualities. Reports indicate, however, that fuel users are not yet giving consideration to stocking. Movement of bunker coal during the past week or so has been much heavier than for some time past.

Quotations on steam and domestic fuel are stable, with an inclination toward higher levels for the better qualities of washed and mine-run product.

The coke market continues brisk with quotations $6@$6.50 for spot foundry grades, $4.25 and $4.50 for nut and egg sizes, respectively, and $4.25@$4.50 for gas coke.

Complaints of car shortage have been heard throughout the district, but the situation has not assumed a serious aspect as yet.

## Anthracite Users Less Keen on Substitutes

At New York the supply for some kinds of anthracite substitutes has caught up with the demand, at least for the present. This is particularly true of coke, where a slight price reaction has taken place. Screened bituminous is holding its own, but is no longer advancing. Buying seems to be turning more to mine-run, owing to coke and prepared coals having gone up too rapidly.

Most retail dealers have made initial purchases of one of these fuels, and because of fairly good sales have in many instances sent in repeat orders. This has occurred more in the metropolitan area than in the small towns, where substitutes do not sell as readily because most house owners have their winter fuel in their cellars and retail stocks of hard coals have been sufficient to take care of the hand-to-mouth buyers.

If the anthracite strike lasts much longer the public will have to take to substitutes to a greater extent, but just now there is a general tendency not to buy anything in that line until it is absolutely necessary.

No company coal of any size can be obtained by the average buyer. The companies still have some buckwheat in their stocking plants, but it is believed to be covered by contracts and orders. Speculative buckwheat is offered in New York harbor at $8 to $8.50 alongside, and a few cargoes of pea are said to be available at around $17.

The Philadelphia market is fast reaching the point where little anthracite of any size is to be had. A few company shippers continue to ship lightly of pea coal, but the report is that all stocks will surely be exhausted by Dec. 1. Retail yards are almost cleaned out of large sizes, a few retaining a small tonnage to meet special cases. Stocks of buckwheat held by the company producers are diminishing rapidly, all companies having reached the point where they are no longer open for additional orders for this size.

Dealers, having decided that there will not be enough coke or sized bituminous coal to go around for hard-coal substitutes, are ordering low-volatile bituminous.

There is practically no hard-coal situation in Baltimore other than a scarcity of anthracite in yards. Outside of a few having limited supplies, which they are releasing in one and two ton lots to customers they consider in the most need, dealers are advising customers to seek substitutes for hard coal.

At Buffalo the small sizes of anthracite are running short. Pea has about given out and buckwheat is anything but plentiful. Probably the member of the trade who makes the most money in the trade is the coke producer. All the available ovens are active and new ones are being got ready as fast as possible. The curb price of furnace coke is now about $15 a ton and some dealers are asking more.

## Slump Hits Connellsville Coke Market

Continued light demand from the East for Connellsville coke, both run of oven and broken, came suddenly to a climax with a fall in prices. Sales were made Saturday at $6.50@$7 for run of oven. Some say broken is hardly any better, others say $8@$9 is obtainable. The main influence seems to be congestion in the East, with several railroad embargoes on both coal and coke, there being 1,400 cars of coke at Perth Amboy and 1,000 at the Reading pier, as well as much coal.

Sudden changes are likely, from the character of the market. With a lull in buying coke soon started to accumulate. The operators can expect no storage favors from the railroads, particularly when loaded cars are blocked in the East, as demurrage charges would be clapped on instantly, so the coke has to be sold.

Foundry coke has not actually made a new market since the slump in furnace coke, but may be appraised at $8@$8.50.

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## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Oct. 24, 1925 | 1,121,459 | 189,006 |
| Previous week | 1,106,114 | 186,389 |
| Week ended Oct. 25, 1924 | 1,113,053 | 194,404 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Oct. 22, 1925 | 122,597 | 48,533 | ........ | ........ |
| Oct. 14, 1925 | 130,797 | 52,942 | ........ | ........ |
| Oct. 22, 1924 | 94,153 | 46,476 | ........ | ........ |

# Foreign Market And Export News

## British Coal Market Advances Gradually; Inquiry Developing

In the South Wales steam coal trade conditions do not show much further progress. Shipments are expanding, but lack of ready steamers has contributed to limit activity. Dry steam coals have improved to some extent by taking the surplus business that would normally have gone to the anthracite market. This is particularly the case in regard to sized coals of the dry class, which constitute an excellent substitute for anthracite for stove purposes.

New business in ordinary steam coals, especially in the case of Monmouthshires, has been developing slowly. Work in the district has been exceedingly irregular, and it has been decided to serve notices on the men employed at several additional collieries.

Improvement continues at Newcastle-on-Tyne, where the coal market position is strong. There have been heavy bookings of all classes of coal for shipment and supplies are now getting scarce, only comparatively small lots being obtainable. Inquiry for next month also is good, but the tendency for the moment is to hold off in view of the long loading turns. Inquiries are circulating, too, for delivery to the end of the year and to March, but though merchants are offering to sell freely ahead they are not disposed to discount present prices and forward transactions are understood to have been closed on these terms. A strong tone has developed in the coke trade. Gas coke is firm and higher.

Production by British collieries during the week ended Oct. 24, according to a special cable to *Coal Age*, totaled 4,820,000 gross tons, compared with 4,715,000 tons in the preceding week.

## Gains Counterbalance Losses At Hampton Roads

Activity at Hampton Roads last week was without feature, the market apparently holding its own, with increases in business in some angles offsetting slight depressions in others. Foreign business appeared to be holding its own, but coastwise trade was barely up to normal.

Domestic business was on the increase with the advent of cold weather and bunker trade was at a normal level. The tone of the market was fairly strong and the situation was described as steady. The production of coal in some southwest Virginia mines was reported as on the increase, in anticipation of better winter business.

At the request of a small group of coal shippers, who assert that information being released by the coal piers has given their competitors in this port, as well as coal shippers in other ports, too great an "inside track" on the coal market here, the piers have discontinued issuing the regular reports on the coal situation.

## French Industrial Coal Demand Equal to Supply

In the French coal market supply and demand for industrial coals are more or less equal, which, on the whole, is rather satisfactory. This is explained in part by increased activity in the metallurgical, textile and glass industries and by the protection given to French coals by the rise in sterling.

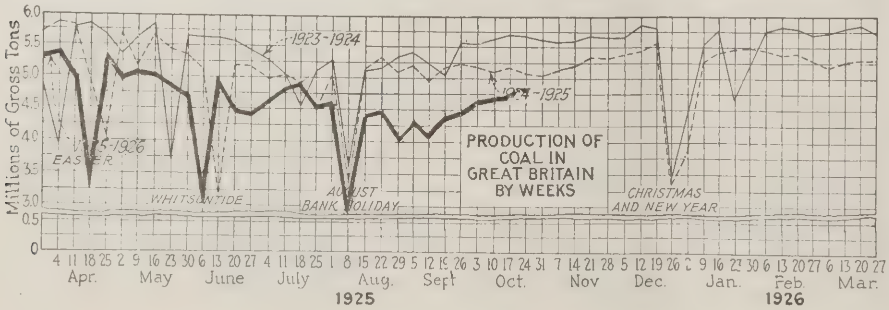
In domestic coals, merchants are grumbling about the delay in shipments—as much by French and Belgian producers as by British anthracite exporters. Considering the heavy weather, the demand has been rather weak during October.

Two additional shiploads of Russian anthracite are on their way to Rouen.

Receipts of indemnity fuels from the Ruhr during the first ten days of October included 110,200 tons of coal, 77,800 tons of coke and 9,400 of lignite briquets. These figures do not include free contracts imputed to the reparations account.

During the first twenty days of October the O. R. C. A. received from the Ruhr 145,571 tons of coke. The German government consented to a reduction of 1.50 m. in the official price of coke, which made the price 22.50 m. beginning Oct. 15.

Exports of French fuels in September included 480,144 metric tons of coal, 51,610 tons of coke and 10,690 tons of patent fuels, the totals for the first nine months of 1925 being, respectively, 3,265,955 metric tons of coal, 321,142 tons of coke and 92,411 tons of patent fuels. Imports in September were 1,636,322 metric tons of coal, 420,394 tons of coke and 147,994 tons of patent fuels, the respective totals for the first nine months of 1925 being 13,207,148 metric tons of coal, 3,827,584 tons of coke and 925,609 tons of patent fuels.



### U. S. Fuel Imports in September

(In Gross Tons)

| | 1924 | 1925 |
|---|---|---|
| Anthracite | 7,777 | 11,984 |
| Bituminous shale and lignite | 750 | 6,033 |
| Bituminous coal and slack | 14,492 | 41,229 |
| Imported from: | | |
| United Kingdom | ...... | 1,500 |
| Canada | 14,492 | 43,545 |
| Australia | 750 | .... |
| Other countries | ...... | 2,217 |
| Coke | 3,511 | 10,719 |

### Export Clearances, Week Ended Nov. 7, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Canada: | |
| Ital. Str. Color, for Three Rivers | 6,110 |
| Nor. Str. Frey, for Montreal | 3,971 |
| Ital. Str. San Pietro, for Montreal | 7,507 |
| Dan. Str. Paris, for Montreal | 4,187 |
| For West Africa: | |
| Ital. Str. Delia, for Dakar | 8,053 |
| For French West Indies: | |
| Nor. Str. Thomas Krag, for Fort de France | 4,885 |
| For Italy: | |
| Ital. Str. Aster, for Port Ferrajo | 8,834 |
| Ital. Str. Monginevro, for Naples | 3,526 |
| For Cuba: | |
| Br. Str. Pentraeth, for Havana | 3,930 |
| Br. Str. Glenpark, for Sagua la Grande | 1,979 |
| Nor. Str. Gefion, for Havana | 2,958 |
| For Chile: | |
| Br. Str. Ellaston, for Tocopilla | 975 |
| For Porto Rico: | |
| Amer. Schr. Charles H. MacDowell, for Manauba | 1,905 |

FROM BALTIMORE

| | |
|---|---|
| For Cuba: | |
| Am. Schr. T. N. Barnsdall, for Hamacao | 1,500 |
| Am. Schr. Major Wheeler, for Guanica (coke) | 330 |

### Hampton Roads Coal Dumpings*

| N. & W. Piers, Lamberts Pt.: | Oct. 29 | Nov. 5 |
|---|---|---|
| Tons dumped for week | 131,603 | 100,502 |
| Virginian Piers, Sewalls Pt.: | | |
| Tons dumped for week | 84,312 | 97,583 |
| C. & O. Piers, Newport News: | | |
| Tons dumped for week | 146,472 | 157,382 |

* Data on cars on hand, tons on hand and tonnage waiting withheld due to shippers' protest.

### Pier and Bunker Prices, Gross Tons

PIERS

| | Oct. 31 | Nov. 7* |
|---|---|---|
| Pool 1, New York | $5.50@$5.75 | **$5.75@$6.00** |
| Pool 9, New York | 5.00@5.25 | *5.00@5.20* |
| Pool 10, New York | 4.75@5.00 | *4.65@4.85* |
| Pool 11, New York | 4.50@4.70 | 4.55@4.65 |
| Pool 9, Philadelphia | 4.85@5.05 | **5.05@5.30** |
| Pool 10, Philadelphia | 4.55@4.75 | **4.89@5.10** |
| Pool 11, Philadelphia | 4.35@4.55 | **4.50@4.75** |
| Pool 1, Hamp. Roads | 5.00@5.25 | *4.85@5.00* |
| Pool 2, Hamp. Roads | 4.75@5.00 | *4.60@4.70* |
| Pools 5-6-7, Hamp. Rds. | 4.60@4.75 | *4.50* |

BUNKERS

| | Oct. 31 | Nov. 7* |
|---|---|---|
| Pool 1, New York | $5.75@$6.00 | **$6.00@$6.25** |
| Pool 9, New York | 5.25@5.50 | *5.25@5.45* |
| Pool 10, New York | 5.00@5.25 | *4.90@5.10* |
| Pool 11, New York | 4.75@4.95 | 4.80@4.90 |
| Pool 9, Philadelphia | 5.05@5.25 | **5.30@5.55** |
| Pool 10, Philadelphia | 4.75@4.85 | **5.10@5.35** |
| Pool 11, Philadelphia | 4.60@4.75 | **4.75@5.00** |
| Pool 1, Hamp. Roads | 5.00@5.25 | *5.00* |
| Pool 2, Hamp. Roads | 4.75@5.00 | *4.70* |
| Pools 5-6-7, Hamp. Rds. | 4.60@4.75 | *4.50* |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Oct. 31 | Nov. 7* |
|---|---|---|
| Admiralty, large | 23s.@23s.9d. | *23s.@23s.6d.* |
| Steam smalls | 10s.3d. | **10s.6d.** |
| Newcastle: | | |
| Best steams | 15s.6d. | **15s.9d.** |
| Best gas | 16s.6d. | **16s.3d.@18s.9d.** |
| Best bunkers | 14s.6d.@15s.6d. | **15s.@16s.6d.** |

*Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

The stockholders of the DeBardeleben Coal Corporation have approved a new financing plan adopted by the board of directors of the corporation providing for the issuance of $1,500,000 in bonds, which it is understood is to provide for refinancing and also betterments and improvements to be made in the future. The corporation is now enjoying a splendid business, all of its large and well-equipped mines operating on a full-time basis. Henry T. DeBardeleben is president of the company. The general offices are at Birmingham.

Joseph A. Norman has withdrawn from the firm of Adams, Rowe & Norman, wholesale coal and coke sales agency, with which he has been associated since its organization in 1919. Mr. Norman is well known in the trade, having been connected with the operating firm of Bonnyman-Norman Coal Co. for a number of years prior to the organization of the firm from which he is now withdrawing and is thoroughly acquainted with both the selling and operating phases of the industry. Mr. Norman has not announced his plans for the future.

The St. Louis & San Francisco R.R. has placed an order with the Fairfield car shops of the Tennessee Coal, Iron & Railroad Co. for 500 gondola cars, which are to be delivered during the early part of next year. The Frisco is one of the largest coal-carrying lines in the district and mines on its lines are now operating practically full time.

A number of idle Alabama mines are preparing to resume operation at an early date. The Alabama By-Products Corporation has reopened its No. 15 drift opening, near Dora, and it is understood that the Sloss-Sheffield Steel & Iron Co. is cleaning up its Ivy mine, which has been idle for about three months, and will resume mining there as early as practicable. The new Crockard Mine No. 5, being developed on a large scale by the Woodward Iron Co., is expected to begin production in a small way during the first quarter of 1926. This is a shaft opening and will provide facilities for the removal of several hundred thousand tons of Pratt coal in a virgin field.

The Alabama By-Products Corporation is modernizing its mines at Flat Creek and Praco, these operations being electrified and mining machines being installed at the latter point. Wegra mines also have been electrified fully and a new electric hoist has been installed at this operation recently. It also is understood that a large coal bin will be constructed there. A new washery has been built at Blossburg and also one at Mineral Springs.

## ARKANSAS

With 28 men in its employ the New Coronado Coal Co., the only coal mining concern operating at Huntington, is running full time six days a week. The 1924 scale of wages is being paid. The management expects to continue operations throughout the winter.

H. D. Covius, M. H. Covius and Sturius Covius, all from La Salle, Ind., and V. Rube and E. T. Barnes have been inspecting the Dixie Girl Mine, which is situated between Buffalo and Rush, with a view to buying it.

## COLORADO

A shortage of approximately three hundred miners exists in the Fremont, Las Animas and Huerfano County coal fields, according to an estimate by E. H. Weitzel, general manager of the Colorado Fuel & Iron Co., at Pueblo. Unofficial report is to the effect that a similar condition exists at the mines of the Victor-American company. Diversion of labor to the beet fields and the sugar factories is believed by officials to be largely responsible.

The statement of the Colorado Fuel & Iron Co. for the quarter ended Sept. 30 shows gross receipts of $6,141,769, compared with $7,492,540 in the corresponding quarter of 1924. Operating expenses of $5,442,089, compared with $6,840,267 in the 1924 quarter. Income above fixed charges was $70,847, against $17,413 the year before, which left a deficit of $186,334, against $239,768 after $257,181 had been deducted for depreciation.

## ILLINOIS

The Jeffery mine, Herrin, operated by Pratt Brothers, established a new hoisting record Oct. 12, when 2,966 tons of coal was hoisted in eight hours without any prior preparations or accumulations of coal to speed up the day's work. The mine hoisted 1,085 pit cars. One year ago the Jeffery mine set a record of 2,866 tons in eight hours by hoisting 1,055 pit cars.

Secretary James Mason of the Belleville subdistrict of the Illinois United Mine Workers has received a check for $6,067.28 from Receiver J. Kapp of Chicago, who was named by the federal court in St. Louis as receiver of the Missouri-Illinois Coal Co. and People's Coal Co., both of which went into bankruptcy in September, 1923. The check is for wages of 194 miners employed by the mining companies.

Rice Miller, Hillsboro, has been elected president of the Illinois Coal Operators Association.

Mine No. 7 of the Consolidated Coal Co., at Herrin, resumed full time operations late in October. This mine had been running at half capacity for several months.

Charles L. Dering, of Chicago, formerly president of the American Wholesale Coal Association, was made an honorary member of the Chicago Association of Commerce by unanimous recommendation of the executive committee at a meeting of the board of directors on Oct. 15. He retired from active business during the past year.

The Weaver mine of the Old Ben Coal Corporation, near Herrin, has resumed operation. Five hundred men had been idle since it closed down in February.

## KANSAS

The question of moving headquarters of District 14, United Mine Workers, from Pittsburgh will be submitted by referendum to the locals of the district some time in November. Arma has volunteered to boost its offer of $10,000 toward the erection of a building for the district offices to $15,000, and already is said to have received pledges of more than $9,000 of the amount. Frontenac's offer is to remodel an existing building there and permit the district officers to occupy it without rent.

Drill tests near Cherokee to locate a vein of coal adapted to shovel operation are being made. Two or three shovels are expected to be employed in the development of the vein when its bounds are determined. The vein is from 18 to 26 in. thick and is from 16 to 22 ft. from the surface. The Western Coal & Mining Co. is among those interested in the tests.

Employees of the Home Riverside Mining Co., who have been idle since May, were notified last week that unless a new wage agreement is reached within sixty days the mine would be closed permanently and the property abandoned. The company employees have been receiving a wage of $7.50 a day. The company wishes to reduce this to $5, declaring the mine product cannot be sold in competition with other coals if the higher rate is paid. Should the mine not be reopened, such action will mark the end of the coal industry in Leavenworth, where at one time four mines were in operation employing twelve hundred miners.

## KENTUCKY

The O'Neal brothers, (J. T. and Emmett O'Neal), interested in the Emmett O'Neal Coal Co., Louisville, were much in the limelight over the past few days. Judge J. T. O'Neal with forty-eight hours' notice stepped in and ran on the Democratic ticket for Mayor of Louisville, when W. T. Baker, the regular candidate stepped out of the picture, having withdrawn when publicity was given to his former connection with the Ku Klux Klan. His brother Emmett O'Neal was running for sheriff on the same ticket. In spite of the sudden change in candidates, the O'Neal brothers were defeated by less than 3,000 votes, and by a machine which has been in control of local politics for ten years or more. The boys are quite popular, former athletes, and well connected socially. They made a much better race than had been generally predicted.

The Old Hickory Mining Co. expects to rebuild its old mine at Hite installing new mine cars, fans, electric substations, and electric machinery.

Parker & Tillinghurst, Cincinnati engineers, are reported to be drawing plans for the construction of a $100,000 plant for the Process Fuel Co. at Sixth and Davis Sts., Louisville. Emmett O'Neal Coal Co., Emmett O'Neal, Robert C. Logan, W. O. Alben, O. Marting, Dayton, Ohio, John G. Hettinger, of the Kentucky Fluorspar Co., and W. G. Eaton, of Cincinnati, are interested in the concern.

The Kentucky Public Utilities Co., Louisville, one of the Insull Companies, through vice-president L. B. Herrington, has announced the purchase of the Paducah Electric Co., including light and power, street railway and water gas plant holdings. The Kentucky company controls many miles of high-tension transmission lines in both eastern and western Kentucky, supplies current to many towns and coal plants. It recently purchased the 5,000-hp. power plant of the W. G. Duncan Coal Co., at Greenville, which it had previously had under lease, and also has the St. Bernard Mining Co.'s 5,000-hp. steam plant under lease.

Patrick E. Crowley, of New York, president of the New York Central Lines, and a group of company officials paid a visit to Louisville last week in connection with plans for the construction of a new Ohio River bridge at Louisville. The present bridge, completed in 1893, is too light to handle heavy coal trains and big engines, causing some traffic that should go through Louisville to be routed through Cincinnati.

It is reported that the Carr's Fork Coal Co., at Carr's Fork, in eastern Kentucky is planning to increase production capacity to forty cars from twenty-five. A new store building, sixty new miners' homes, additional mine openings, enlargement of the tipple, and other improvements are planned. It also is reported that the Hardy Burlingham Mining Co., in the Hazard field, is installing equipment for larger production, and is completing 100 new miners' homes.

**A Dispensary at a Southern Mine**

This particular dispensary is located at the Edgewater Mine of the Tennessee Coal, Iron & R.R. Co., in Alabama. Like most of the other mine buildings at this plant it is of neat brick construction. More and more, as time goes on, employers are coming to realize that it is good business to care well for the physical needs of their employees.

The holdings of the New Bell Jellico Coal Co. were sold at the Pineville Court House door Nov. 2 for $35,800. The total indebtedness of the company will reach about $339,000 and in addition to this there was sold about $350,000 worth of capital stock in the concern. The property was bought at the sale by R. E. Adams, Louisville, Miss Golden Day, Natural Bridge, and J. H. Adams, of Louisville, who held a mortgage on the property. The New Bell Jellico Coal Co. was organized about fifteen years ago. W. Mac Johnson, formerly of Lexington, but now reported a resident of Florida, operated the mine until it was placed in the hands of receivers a short time ago.

E. W. and Bert Dozier, of Madisonville, have bought 752 acres of coal rights near Madisonville at a reported price of $190,000 and will develop it with five slope mines. Development is to begin at once. The mines will be on the Madisonville line of the Illinois Central R.R. Daily output of each mine will be from ten to twenty cars daily. Following the deal the Dozier brothers announced that they had formed the Kentucky Royalty Co. with $20,000 capital stock, the organization being under the Kentucky laws.

K. U. Maguire, of the Harlan Coal Co., Louisville, has been elected vice-president of the new Morris Plan Industrial Bank, Louisville, of which he was one of the incorporators and developers. The bank is now getting ready to operate.

## MARYLAND

Mines in the vicinity of Midland are increasing their output and new men are being taken on daily. The Eagen-Loar Coal Co. has started to ship coal after making extensive improvements. Carpenters are building new mine cars to increase the tonnage.

## MINNESOTA

The ordinance for licensing retail fuel dealers has finally passed the Minneapolis City Council. It provides for a $50 annual license fee. There was some opposition on the ground that it would put small dealers out of business, but it was supported by the majority in the hope that it would assure responsibility of those in the business.

## MISSOURI

The Old Ben Coal Corporation of Delaware, with a capital of $22,000,000, has asked permission to do business in St. Louis with a capital of $463,760. The company will do a general mining business. The incorporators are Vice-President Gordon Buchanan, and Secretary A. H. Flanigan.

## NORTH DAKOTA

The North Dakota lignite mines shipped 83,397 tons between Sept. 12 and Oct. 3, as against 62,834 tons for the same period of 1924. But the interstate shipments were only 3,841 tons against 10,424 tons for the same time of last year.

The coal tipple and power plant of the Knife River Coal Mining Co., Beulah, was destroyed by fire in October, entailing a loss of about $100,000.

## OHIO

The Columbus Retail Coal Merchants' Credit Association, composed of representatives from 38 retail coal concerns in Columbus, has been formed for the purpose of gathering and distributing credit information among its members. The organization was effected after several preliminary meetings when R. H. Bell, of the Bell Coal Co., was chosen president.

After being idle for about eight months, Mine No. 1 of the Ohio Collieries Co., located at Jacksonville, has resumed operations, giving employment to almost 200 miners. A portion of the output is taken in a large railroad contract.

Announcement has been made that the Beaumont Mine, located near Chauncey, will soon resume operations, employing about 150 men. There is considerable activity in the mines in and around Chauncey and about 1,000 men are working rather steadily.

Officials of the Pittsburgh Coal Co. announce that wages paid at the mines operating under the 1917 wage scale in the Pomeroy Bend field for the month of October totaled more than $66,000. There are three mines in that field operating on practically full time.

The M. A. Hanna Co. reports net income of $223,237 for the September quarter, against a deficit of $101,880 reported in the same period last year. For the first nine months of 1925 the company reported a deficit of $292,290.

Dumpings at the Toledo docks of the Hocking Valley Ry. for the two weeks ending Nov. 4 totaled 8,577 cars, or 496,744 tons, which is considerably in excess of the records for the same period of 1924 when 7,020 cars having a tonnage of 389,395 were dumped. Up to Nov. 4 the docks handled 103,276 cars, or 7,429,776 tons, as compared with 108,575 cars and 5,945,869 tons during the same period in 1924.

Dumpings of the New York Central Docks at Toledo for the two weeks ending Nov. 4 were 3,388 cars, or 167,487 tons, as compared with 333 cars and 16,269 tons for the corresponding period in 1924. For the season up to Nov. 4 the dumpings were 47,646 cars, or 2,347,678 tons, as compared with 1,701 cars and 83,715 tons for the same period last season.

## OKLAHOMA

A windy shot was responsible for a blast which on Oct. 30 snuffed out the lives of Victor Morgan, of McAlester, and John Hunter, of Brewer, shotfirers of mine No. 4, at Brewer, the property of the Southern Fuel Co. The bodies of the miners were badly mangled, as the explosion had thrown them against the sides of the entry with enough force to break many bones.

## PENNSYLVANIA

A coal washery owned by Allison & Eddy, of New York, and located about two miles south of Tamaqua, was destroyed by fire of undetermined origin early on the morning of Oct. 28, causing a loss of $20,000. When in operation the output of the plant was disposed of to surrounding localities.

Miners in the employ of the Buffalo & Susquehanna Coal & Coke Co. in their No. 2 shaft, at Du Bois, went on strike on Oct. 23. The strike arose over a controversy relative to evictions. This company was evicting miners living in company houses at Sagamore, where the mines are being operated on the 1917 scale. The B. & S. company has made no announcement concerning its future policy with the miners.

The Benjamin washery at Eynon, know as the Rhonda, was completely destroyed by fire at 8 p.m. Oct. 28, entailing a loss of about $25,000. The washery was built by Frank P. Benjamin, of Scranton, on the site of the old Raymond breaker, which was destroyed by fire several years ago. It had not been in operation for several months.

Harry F. Sinclair, of New York, filed a petition in federal court in Pittsburgh asking removal of W. M. Wilshire and C. G. McGregor, temporary receivers of the Carnegie Coal Co., appointed by the court recently. Sinclair alleges that fraudulent transactions involving $5,000,000 in first and second mortgage bonds took place in connection with the merger of the coal company with several other coal concerns, and further says that the receivers are friendly to the president and treasurer of the company, and so would not institute legal action to regain the $5,000,000 mortgage bonds which are alleged to be unlawfully held. Sinclair's immediate interest is based on a note for $125,000 on which he was co-indorser with John A. Bell and the Carnegie Coal Co. A rule was made returnable by the judge November 12.

**A Section of the Coal-Company-Owned Town of Omar, Logan County, W. Va.**

This is one of the model mining towns of the state. It was founded by the Main Island Creek Coal Co., which was taken over by the Hutchinson Island Creek Coal Corp., which in turn was consolidated with the West Virginia Coal & Coke Co. The mines at Omar are involved in a $250,000 lawsuit which the Coal & Crane estate brought against the original operators, charging improper mining methods.

The twelfth annual banquet of mine officials and miners in the Pittsburgh district, sponsored by John L. Pratt, state mine inspector, was held in Pittsburgh, Nov. 7. W. H. Pratt, former state legislator, was toastmaster. A. C. Fieldner, superintendent Pittsburgh station, U. S. Bureau of Mines; J. E. Struble, mine inspector, H. C. Frick Coke Co., and George F. Ossler, vice-president and general manager of the Pittsburgh Terminal Coal Co., spoke.

The Red Ash Coal Co., of Wilkes-Barre, one of the oldest in the anthracite field, has filed papers in the Luzerne County Court asking that it be dissolved. There will be a hearing on the petition on Nov. 23. The operations of the company, which was incorporated in 1874, have been located for the most part in Wilkes-Barre township. The firm's coal, on the mountainside of Wilkes-Barre, is being consumed by a mine fire that has been raging for several years. The company has spent thousands of dollars in an effort to conquer the flames, but little progress has been made.

The Evans Coal Mining Co. of Fairmont, W. Va., incorporated at $25,000 recently, has leased Rosedale mine No. 2 at Poland, Greene County, which contains 700 acres of Sewickley coal land, 38 miners' houses and a large wooden tipple equipped to turn out prepared sizes. The output will be increased from 15 to 20 cars within a short time, it is announced.

The Hillman Coal & Coke Co. has bought 20 all-steel barges for the river coal trade from the Jones & Laughlin Steel Corporation. The purchase involves 3,000 tons of steel and is considered a big purchase in the industry.

The giant electric pump at the bottom of the slope in the Reliance mine, at Mount Carmel, has been undergoing extensive repairs since the anthracite suspension went into effect. Thirty men have been employed on the job. This pump, one of the largest in the coal fields, has been in steady use for several years.

The Pittsburgh Coal Co. has purchased from Katherine V. H. Wylie, three tracts of land in Elizabeth Township, Allegheny County, for $36,800.

## TENNESSEE

Howell J. Davis, of Knoxville, a coal operator, has become acting City Manager of the city, to serve during the absence of Louis Brownlow, City Manager, who has gone to Baltimore to undergo an operation. Mr. Davis acted as City Manager two years ago, immediately after the present form of government was adopted. He will serve as a dollar a year man while looking after the municipal government and handle his coal business as well.

### UTAH

"Burning of coal in large cities is nothing less than an economic folly and a social crime," said Col. H. D. Savage, vice-president of the Combustion Engineering Corp., New York City, in a talk before a meeting of Utah engineers in Salt Lake City last week. The speaker said that processes for the treating of coal had advanced to a state where gases that go off when raw coal is burned may be saved. In this way the value of each ton of coal is doubled whilst at the same time the city in which it is used is saved much trouble and expense from smoke. The speaker advocated "low-temperature distillation."

### VIRGINIA

Dudley H. R. Wigg, of the General Coal Co., Norfolk, has taken an extended leave of absence on account of illness and is under treatment at Catawba Sanitarium.

### WASHINGTON

The newest and biggest mine of the Pacific Coast Coal Co., on the Cedar River highway, five miles southeast of Renton, was opened late in October. The mine is expected to yield 2,000 tons of coal daily when it is placed in full operation. This will make it the largest mine in the state. Two tunnels were driven into Cedar Mountain during the past two years. One, from above the highway, goes straight into the mountain for about a half mile. The other comes slanting down from the top of the mountain and meets the main tunnel in the middle. From this meeting place a tunnel leads into the mountain, along the Jones seam. It is from this tunnel that the main operations will be conducted.

### WEST VIRGINIA

In addition to resuming operations at its Coalton mine on Oct. 15, the West Virginia Coal & Coke Co., through E. L. Michie, general manager of its West Virginia division, announces that preparations are being made to put all the coke ovens of the company in blast, including those at Harding, as well as at Coalton, and that as soon as working forces can be built up to the requisite strength the production of the company in northern West Virginia will be on a larger scale than at any time in recent years. All mines of the company except those at Junior and Mabie are now in operation. The Harding mine has been on a part-time basis but it is now proposed to operate it every day in the week.

The following West Virginia coal companies have surrendered their charters and discontinued business: C. G. Hartin Coal Co., Mullens Smokeless Coal Co., Laurel Coke Co., Bengal Co., Goodin & Barney Coal Co.

The New England Fuel & Transportation Co. recently put into blast a battery of 60 coke ovens at Federal No. 1 mine, at Grant Town.

A circuit court jury at Huntington on Oct. 28 found a verdict for $122,500 in the suit of Charles W. H. Crane, of Cincinnati, against A. J. Dalton and J. A. Kelly, growing out of a Wyoming County land deal. Two previous hearings in the circuit court had resulted in hung juries. The sum is approximately one-half the amount asked by the plaintiff, who claimed he was due $5 an acre under terms of an agreement under which title to between 49,000 and 50,000 acres of land was acquired, and upon which he held an option from trustees of the Cole and Crane estate.

Operations were suspended indefinitely at No. 1 and No. 2 mines of the Galloway Coal Co., at Galloway, twelve miles west of Grafton on Oct. 31, according to an announcement by F. B. Findley, superintendent. About 500 men were thrown out of work. The mines have operated for several years under the union scale, filling contracts for railroad fuel and for lake delivery, but officials of the company state that the contracts have expired and that the company can no longer afford to operate at the prices now prevailing. The mines have a capacity of about 90 cars a day.

The Alma Thacker Coal Co. mine, located near Matewan, resumed work Nov. 2, after having been closed down for about eighteen months. One hundred and fifty men are finding employment in the mine. It has a capacity of 800 tons of coal per day. Williamson coal men have leased the mine and equipment from the Columbus owners. Every mine in the Williamson district is now working at capacity.

V. S. Veazey, of Fayetteville, has filed a voluntary petition in bankruptcy in the federal court for the southern district of West Virginia. Mr. Veazey has been engaged in operating mines at Glen Jean, in Fayette County, as well as at Robson. Only recently the Glen Jean mine was sold at public sale, but the Robson property is still retained by Mr. Veazey. Liabilities are listed at over $100,000 and assets, including the Robson leasehold are approximately $85,000.

### WYOMING

The Rock Springs store of the Union Pacific Coal Co. was destroyed by fire Oct. 31, the loss being close to $100,000. The exact cause of the fire has not been determined. Practically all of the important records of the store were saved. The company operated a complete department store with a stock of between $60,000 and $75.000. On the following Monday morning a temporary store was opened in an old school building near the scene of the fire.

The second October payroll in the Rock Springs district is said to have been the largest in the past four years. It is reported that the miners' payroll from the four Union Pacific mines in Rock Springs alone amounted to more than $77,000.

## Traffic

### More New B. R. & P. Coke Rates Are Approved

The New York Public Service Commission has approved new rates on the Buffalo, Rochester & Pittsburgh R.R. on coke and coke breeze from Buffalo to Lincoln Park and Rochester, $1.39 (including connecting lines switching charge not exceeding 38c. per ton, not heretofore included in the $1.39 rate); to Beaver, Riceville and West Valley, $1.23, reduction 3c.; to Ashford, $1.39, increase 13c.; effective Nov. 29.

### Allows Emergency Rates on Coke

Establishment of lower rates on coke and coke breeze from the Birmingham (Ala.) district to southeastern Michigan destinations east of the Grand Rapids & Indiana division of the Pennsylvania System and south of the line of the Pere Marquette R.R. has been permitted by the Interstate Commerce Commission over the protest of Illinois, Indiana and Wisconsin byproduct coke interests, who opposed granting the Alabama & Great Southern and Louisville & Nashville railroads permission to make the reductions effective on 10 days' notice. The new rates are 50 and 75c. per ton higher than the rates from Chattanooga, Tenn., to the same destinations. The petitioning carriers pled the emergency created by the anthracite strike as justification for the proposal to make the rates effective on less than statutory notice. The existence of such an emergency was denied by the opponents, who stated that coke plants at Indianapolis, Terre-Haute, Ind., and Granite City, Ill., "are now moving large quantities of coke into Michigan."

## Obituary

**Robert Ivell**, 81, retired coal operator, died recently near Harrisville, Pa. He was employed when young in English coal mines. In 1881 he went to Pennsylvania and operated mines in Cherry and Venango townships of Butler county, retiring 20 years ago. He leaves his widow and seven children.

**Ashley E. Woolridge**, one of Clearfield County's best known citizens and most successful coal operators, died at his home in Woodland, Pa., Oct. 29, aged 68 years. His parents were among the early settlers of Clearfield County. He served two terms as county commissioner of Clearfield County and during the past ten years was among the best known coal operators in the Clearfield district, having started coal development many years ago. He is survived by three daughters and three sons.

**Fred H. Harwood,** 62, a prominent Chicago coal dealer, died at his home in Lankershim, Calif., Oct. 23. He was a former president of the New Kentucky Coal Co. and for a number of years was traffic manager of the Illinois Coal Traffic Bureau in Chicago. From 1904 to 1909 he was coal traffic manager of the Illinois Central R.R., having been twenty-two years in the service of that company.

**William F. Aldrich**, who came to Alabama in 1874, and together with his brother, Trueman H. Aldrich, founded the mining town of Aldrich, in Shelby County, which is now the center of extensive coal-mining operations, died at Birmingham Oct. 30. Mr. Aldrich moved to Birmingham in 1912, since which time he had been engaged in handling mineral properties. He at one time represented the Fourth Alabama District in Congress.

## Coming Meetings

**American Institute of Electrical Engineers.** Annual meeting of Lehigh Valley section at the Schuylkill Country Club, Pottsville, Pa., Nov. 13, at 6:30 p.m. Chairman, W. H. Lesser, Frackville, Pa.

**Harlan County Coal Operators' Association.** Annual meeting, Nov. 18, at Harlan, Ky. Secretary, E. R. Clayton, Harlan, Ky.

**West Virginia Coal Mining Institute.** Fall meeting, Nov. 24 and 25 at the Hotel Morgan, Morgantown, W. Va. Secretary, R. E. Sherwood, Charleston, W. Va.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering.** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

**American Mining Congress.** Twenty-eighth annual convention, Dec. 9-11, Washington, D. C. Secretary, J. F. Callbreath, Munsey Bldg., Washington, D. C.

## Recent Patents

**Dragline Bucket;** 1,547,758. Sidney G. Jones, Minneapolis, Minn. July 28, 1925. Filed Dec. 22, 1923; serial No. 682,242.

**Tool for Miners' Lamps;** 1,547,829. John R. Shoffner, Dora, Pa. July 28, 1925. Filed July 10, 1924; serial No. 725,231.

**Latch for Mine-Car Doors;** 1,547,878. Nelson C. Kostenbauder, Aristes, Pa. July 28, 1925. Filed Aug. 18, 1924; serial No. 732,725.

**Mine-Car Safety Device;** 1,547,990. Robert Winters and Charles M. Samuels, Pittsburgh, Pa. July 28, 1925. Filed Oct. 24, 1924; serial No. 745,619.

**Apparatus for Filtering and Softening Water;** 1,548,160. Martin F. Newman, Oakmont, Pa., assignor to Wm. B. Scaife & Sons Co., Oakmont, Pa., Aug. 4, 1925. Filed April 20, 1922; serial No. 555,756.

**Feeder for Pulverized Material;** 1,548,324. G. H. Kaemmerling, Allentown, Pa., assignor to the Fuller-Lehigh Co., Fullerton, Pa. Aug. 4, 1925. Filed June 1, 1921; serial No. 474,103.

**Process of and Apparatus for Concentrating or Cleaning Coal;** 1,548,446. Emil Deister, Fort Wayne, Ind. Aug. 4, 1925. Filed May 3, 1922; serial No. 558,220.

**Manufacturing Pure Anthracene and Pure Carbazol;** 1,548,920. Leopold Weil, Hamburg, Germany. Aug. 11, 1925. Filed Dec. 26, 1923; serial No. 682,793.

**Rope Haulage System for Collieries;** 1,549,447. Frank M. Castleman, Rotherham, England, assignor to the Union Switch & Signal Co., Swissvale, Pa. Aug. 11, 1925. Filed Oct. 9, 1922; serial No. 593,240.

## Industrial Notes

The Cleveland office of the **Sullivan Machinery Co.,** hitherto at Room 701, Rockefeller Building, has been moved to Room 1506 in the same building in order to secure needed additional space. R. T. Stone is manager. The office in Sydney, New South Wales, of which R. D. Willets is manager, has been moved from Australasia Chambers, 3 Martin Place, where it had been for 15 years, to Kembla Building, Margaret Street.

C. G. Wennerstrom, formerly of **Allbright-Noll Co.** of Chicago, has recently joined the engineering force of the **Foote Bros. Gear & Machine Co.** of Chicago. Mr. Wennerstrom has an extensive engineering and sales experience, including about seven years with the Davis-Watkins Dairy Manufacturing Co., associated with Mr. Davis, who is now president of the Foote Bros. Gear & Machine Co.

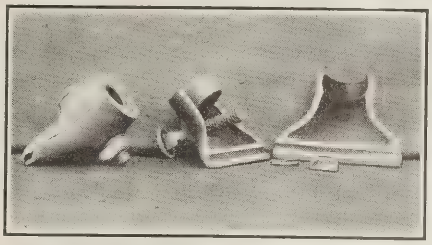
The Russian Soviet Commission visiting this country to study coal mining methods and to purchase American machinery for Russian mines, ordered six type 5 BU and one type 6 BU Joy Loaders from the **Joy Machine Co.,** of Franklin, Pa. These machines are now being shipped and should be in service in seven Soviet mines within ninety days.

# New Equipment

## Clamp with Only Two Castings Is Easy to Install

Buddy Clamp is the name given to a new trolley clamp recently placed on the market by the Electric Railway Equipment Co., of Cincinnati, Ohio. The clamp is claimed to be quite simple and rugged, although it does not incorporate a self-aligning feature.

The device is made of two castings bolted together. One of these castings is tapped for the usual size insulator stud and matches up with the other casting by a modified ball and socket joint. The whole unit can be installed easily and requires no special wrench. The bolt used to clamp the two sections together is a sherardized carriage bolt. The square section under the head fits into one half section of the clamp, so that when the nut is applied the bolt does not turn.



**Simple Clamp Is Easy to Install**

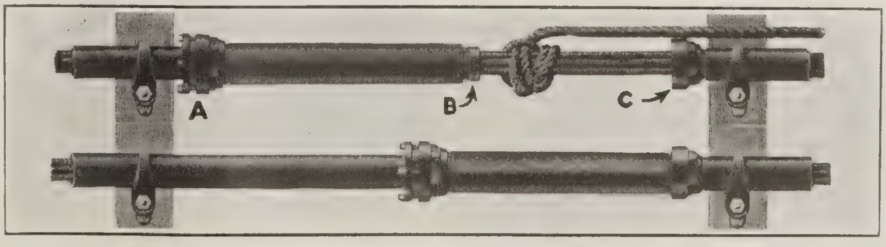
Only two castings make up the clamping and attachment parts of this little device. A carriage bolt holds the two parts together and tightens the clamp on the trolley wire.

## Fitting Makes It Easy To Pull Wires Into Pipe

It usually is difficult to pull wires into long sections of conduit even though the pipe be of ample size to accommodate the wires. Unless junction boxes are installed this work always has been difficult. To reduce both the cost and space required for pull boxes, the V. V. Fittings Co., Philadelphia, Pa., has placed on the market what is known as a "Straight Line Pull and Splice Fitting," shown in the accompanying illustration. This fitting consists of three parts: A stuffing box and gland with packing *A*, a bushing *B*, and an end connector *C*. For the connection between the stuffing box and end connector a length of conduit is used, having a diameter large enough to go over the conduit that the wires are pulled into. For example, if the main conduit is 1¼ in. in diameter, a piece 1½ in. in diameter will be used for the sliding sleeve between the fittings.

In applying this fitting, the stuffing box and gland *A* are screwed on to the end of the sleeve and they are pushed on over the conduit out of the way. Then the bushing *B* is put on the end of the main conduit in front of the sleeve and the end connector *C* is placed on the end of the conduit on the opposite side of the pull opening.

After the wires have been pulled in, the sleeve is moved up over them and screwed into the end connector and the stuffing-box gland tightened so as to make a watertight connection, as shown in the lower figure. In addition to using the fitting as a pull box, it may also be used as a junction box in which the wires are spliced. The use of this fitting not only provides greater convenience in pulling in the wire than do pull boxes, but it also occupies much less space. The fittings are made of cast iron, black or galvanized finished in standard conduit sizes from 1 to 6 in.



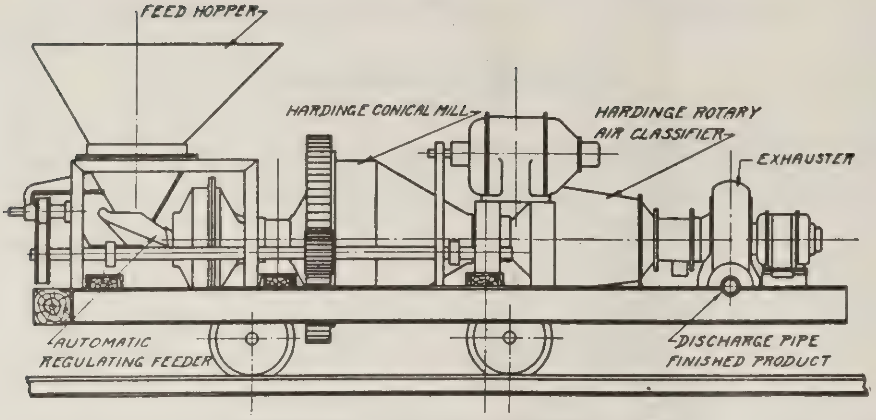
**Wires May Be Pulled at Various Positions**

A section or piece of sufficient size to slip over the conduit is supplied with fittings so that an opening can be provided for pulling the wires.

## Combined Grinder and Duster Saves Time and Money

In order to facilitate so far as possible the rock dusting of mines, the Hardinge Co., of York, Pa., has recently placed on the market the combined pulverizing and dusting unit shown in the accompanying illustration. This machine both grinds the inert dust and distributes it within the workings. It consists of a feed hopper, automatic regulating feeder, a Hardinge conical mill, a rotary air classifier and exhauster, and a discharge pipe by which the finished dust is distributed.

This combined pulverizing and dusting unit is a decided departure from most other types of machines at present employed. It possesses certain well defined advantages, however, that commend it for use in many places in both large- and small-scale operations. Rock, crushed but unground, is supplied to the machine in any convenient manner and placed within the feed hopper. An automatic feeder regulates the flow of this material through the pulverizer which is of the conical ball-mill type.


FEED HOPPER
HARDINGE CONICAL MILL
HARDINGE ROTARY AIR CLASSIFIER
EXHAUSTER
AUTOMATIC REGULATING FEEDER
DISCHARGE PIPE FINISHED PRODUCT

**Arrangement of One-Car Pulverizing Unit**

The feed hopper, automatic feeder, conical ball-mill, rotary classifier and the exhauster are all mounted on one mine car truck. As an alternate arrangement giving slightly greater capacity the hopper and feeding device may be placed on a separate truck. A dust-collector may also be employed if it is desired to spread the dust by hand in places that are inaccessible to the machine or its discharge hose, or to use it in another mine.

From the mill the product is withdrawn and the coarse material separated from the fine by means of the rotating classifier. From this latter piece of equipment, the dust is blown through a nozzle and directed toward the mine surfaces that are to be dusted. The suction of the fan beyond the rotating classifier draws the air into the mill, partly through the feeder but mainly through a central pipe which is kept open. This air in the central pipe conveys the oversize back to the mill in the same way as is accomplished in stationary units of this type.

This portable unit occupies but little more space than an ordinary dusting car. Since the operation of mill and classifier is extremely simple, skilled workmen are not necessary for its manipulation and the machine requires little more attention than need be paid to an ordinary blower. It is far easier to regulate the feed of granular material to the machine than the feed of dust to an ordinary rock dusting car, because any slight degree of moisture in such dust has a tendency to cause packing. An even feed is vital if dusting is to be done effectively or economically.

### Saves Much Expense

Since with this device both pulverizing and dusting are accomplished simultaneously, a considerable saving is made both in first cost and operating charges. The expense entailed for a surface plant is eliminated and all work of dusting is done by one crew underground in place of two, as is necessary if a separate grinding unit is installed on the surface.

In case dust is desired in bulk, the portable unit may be supplied with a small dust collector similar to that used with a surface plant. This is mounted on a stand and can be moved with the car when hand dusting in inaccessible places is desired, or it may be used for filling trough barriers or sacks.

The portable unit may be supplied either with a nozzle attached direct to the blower outlet, or with a flexible hose so that the operator may reach places more or less inaccessible up to 75 to 100 ft. distant from the car. Furthermore outfits of this kind may be built in one- or two-car units. The two-car unit holds more rock, and has greater capacity. The pulverized product from any of these machines will run approximately 60 per cent through a 200-mesh screen, or finer if desired. A finer grinding is to be preferred as it reduces waste and is more effective in the case of an explosion. The finer the grinding, however, the lower will be the capacity, other conditions remaining the same.

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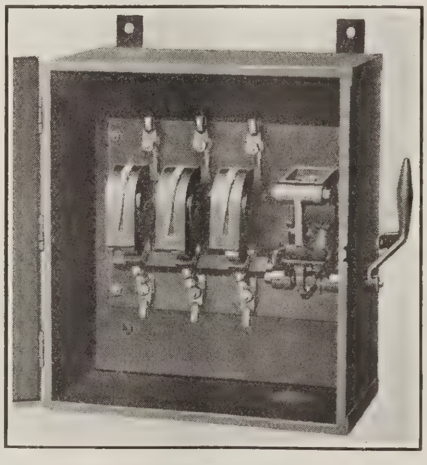
## Manually Operated Switch Opens Quickly

A manually operated contactor recently placed on the market by the General Electric Co. and listed as CR-1049 is a new motor-circuit switch for easily disconnecting a motor and its control equipment from the line under practically all conditions except a dead short circuit. It consists of contact elements mounted on insulated shafts and connected through a snap-action mechanism to the operating handle on the outside of a sheet-steel inclosing case.

Both case and handle can be locked in the open position, thus preventing unauthorized persons from closing the device. No provision is made for locking the handle in the closed position. The contactor will open under load with full safety to the operator. Silver contact tips are used on all sizes with the exception of the 50-ampere switch thus reducing contact resistance. The new contactor is being made in four sizes ranging from 50 amp. to 300 amp.



**Opens Heavily Loaded Lines**

This quick-break switch is fitted with contactors. A snap-action type trip controlled from the outside of the inclosing cabinet provides safe operation.

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## Trade Literature

**Properties of Steel Filler Rods for Gas and Electric Welding.** Chicago Steel & Wire Co., Chicago, Ill. Pp. 28; 4x9 in. The contents of this booklet represent findings of the research department of this company and should prove interesting to those interested in fusion welding. Copy sent on request.

The Delta-Star Electric Co., Chicago, Ill., has issued a bulletin on **High Tension Bus Supports,** containing 48 pp. and 119 illustrations, giving detailed dimensions of supports up to and including 120 kv. Copy sent on request.

Dings Magnetic Separator Co., Milwaukee, Wis., has issued a folder describing and illustrating the uses of its **Separator** in coal mining and other industries.

The Cecil R. Lambert Co., Detroit, Mich., has issued an interesting brochure on **Conveyor Applications.** Copy sent on request.

**Aerial Tramways.** A. Leschen & Sons Rope Co., St. Louis, Mo. Catalog No. T-25. Pp. 51; 6x9 in.; illustrated. This interesting catalog is divided into four sections. Section I gives general information concerning the adaptability, operation and fundamental features of the Leschen aerial tramways; sections II and III cover detailed descriptions of wire-rope tramways, and section IV includes the design and manufacture of Leschen aerial tramways.

Electrical Engineering Service, New York City, has issued a folder describing and illustrating its **Combination Ammeter, Voltmeter and Ohmmeter.** Copy sent on request.

**Underwriters' Laboratories Report on Simplex Track Jacks.** (Safety Appliance No. 286.) Templeton, Kenly & Co., Ltd., Chicago, Ill. Pp. 58; 6x9 in.; illustrated. Covers tests and tabulations on man-power and safety for track jacks.

**Lufkin Tools.** The Lufkin Rule Co., Saginaw, Mich. Catalog No. 4. Pp. 95; 4½x6½ in.; illustrated. Describes the small tools manufactured by this company, giving weights and prices.

**Marion Type "EB" Soot Blower. Marion Machine Foundry & Supply Co., Marion, Ind. Bulletin No. 220. Four-page folder describing and illustrating this new blower for water-tube boilers. The blower is similar to this company's former planet soot blower, except that it now has a valve-in-head independently operated.**

Republic Flow Meters Co., Chicago, Ill., has issued a four-page folder describing and illustrating its new **Electrical Level and Pressure Indicator and Recorder.**

The Marion Steam Shovel Co., Marion, Ohio, rceently issued Bulletin 316 on its new **Marion Model 125,** steam and electric, illustrating and describing the new shovel.

**Capacitors.** General Electric Co., Schenectady, N. Y. Bulletin GEA-77. Pp. 24; 8x10 in.; illustrated. Describes the value of this device in power factor correction on electric generating and distribution systems and for direct installation at motor terminals on low voltage circuits.

The Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has issued the following literature: Leaflet L-20253, describing its manually and electrically operated oil circuit breakers, types D, F-1, F-2 and F-3; leaflet L-20138, describing its new type SC steel clad distribution transformers for single phase service on small isolated outside substations feeding from high tension lines; circular 1737, bearing the title Adequate Lightning Protection, describing its new Autovalve lightning arresters; L. 20044-B, which is a revised publication on LD static condensers and covers the subject of losses due to low power factor, their correction and the economic application of static condensers.

**The Hardinge Rotor Spray** for gas scrubbing, air conditioning, absorption, concentration, mixing, aeration, heating and cooling. Hardinge Co., York, Pa. Bulletin No. 29. Pp. 12; 8 x 10½ in.; illustrated.

# COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
E. J. MEHREN, *Vice-President*

Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

R. DAWSON HALL
*Engineering Editor*

Volume 28 NEW YORK, NOVEMBER 19, 1925 Number 21

## West Virginia Takes the Plunge

MERCHANDISING HISTORY was written when members of the Smokeless Coal Operators' Association of West Virginia decided to support their contemplated invasion of the New England domestic market with a combustion-engineering service. Heretofore the the average low-volatile producer has been as backward in marketing methods and appreciation of public contacts as was the anthracite industry during its long somnolence. Now, to widen their markets, the smokeless operators plan a service similar to that inaugurated by anthracite when it awoke to the menace of dwindling demand. They, too, propose to teach the consumer how to burn their coal efficiently and to smooth away the sharp angles of complaint.

The advantages of such a service are too obvious to call for comment. These advantages, however, cannot be fully realized unless and until certain less patent, but none the less controlling, drawbacks have been overcome. In New England, the smokeless producer is faced with the job of establishing consumer acceptance and of breaking down retailer resistance. Tradition has bound both householder and retail distributor to anthracite. They may abuse and damn hard coal, its quality, its preparation and its price, but it is still their favorite and favored fuel—and neither the fervor of the New England Governors' Fuel Committee nor the missionary zeal of Mr. Hultman can change that situation over night.

The retail distributor will handle other fuels during the present emergency as a public duty, but there will be little enthusiasm for the task. He will be ready—and willing—to forget their existence as soon as anthracite production is again in full tide. One thing only will chill this desire to ignore other fuels after the strike has ended. That one thing will be a real, an insistent demand upon the part of his customers for more of the fuel the emergency forced upon them. The New England retailer loveth anthracite much, but he loveth his customers more.

It is, of course, the work of the smokeless coal bureaus to create and to fire such a consumer demand. Anthracite has been burned so long in New England that proper handling in the domestic heating plant has become instinctive. These bureaus must teach the consumer a new combustion technique. That in itself is no easy task where habits have been ingrained by generations. If the New England character is as fixed in its mold as common report states, it will take far more than the modest sum which the association has provided for this campaign.

But the work is still further handicapped at the start by the price situation. The consumer, deprived—without consultation or consideration—of his accustomed anthracite, is in a resentful mood. It will add nothing to the kindliness of the reception or to the fairness of the trial he gives another fuel if the price charged approximates what he normally pays for hard coal. In his mind, it will be adding insult to injury. Therefore, if West Virginia desires to make a permanent conquest of New England, mine prices on prepared sizes must come down or the energies of the campaign must be concentrated upon mine-run.

We are considering here long-time merchandising, not hit-and-run speculative selling. If the latter be the goal, the proposal indorsed at Boston is an expensive and meaningless gesture. The producer may be able to justify a $6 or $7 price on lump, but New England will remain unconvinced. He cannot justify the spread between $6 lump and $2.25 mine-run—especially in view of the eagerness with which he now is willing to book orders for the latter size at $2.50. He may be able to justify all his prices, but he is not helping his cause in New England. To appear before the public in the guise of a profiteer—even if the disguise is false—is too big a handicap for any sound merchandising campaign to carry.

## Checking Plans for Safety

ONE COAL COMPANY puts the words "Safety, the first consideration" on all its maps and plans as a continual reminder of the importance of safety. It would be well if, in recognition of this obligation, large manufacturers had a safety man who would check all important drawings, if not all drawings, for safety, and if smaller companies were to require a signature after the words "Inspected for Safety" even if the same engineer who signed a general approval were the man appointed to affix his name as vouching within reasonable limits for the safety of the device. Unfortunately, rarely can a device be made wholly foolproof.

## More Electric Power

MOST OF THE EXPANSION in the coal market will come from increased use of electric power, and the coal operator should co-operate with the electric utility industry in promoting increased power consumption.

In the West the soil is made to give good results by judicious irrigation. Unfortunately irrigation may be extremely injudicious. The strength of the soil may be leached away and fields may be insufficiently drained. But with proper management arid land may be greatly benefited by irrigation. Farms on which the rain but rarely falls, when irrigated properly, seldom fail to produce a bumper crop.

On the other hand, in the East there is no irrigation and the crops are uncertain. The lack of rain may appreciably retard plant development and the farmer never knows what he will be able to produce. With some means of furrow or of subsurface irrigation or, if vegetables are planted with some provision for spraying from pipes, it would be possible to get a good crop every year. The only variable remaining would be the sunshine.

The U. S. Department of Agriculture as long ago as 1917 had issued three bulletins on this subject, one on the surface irrigation of Eastern farms, one on irrigation in Florida and one on spray irrigation. Says Milo B. Williams in the last of these brochures:

> Within the past ten years the spray irrigation method has been adopted over a wide area in the United States especially in the Atlantic Coast States from Massachusetts to Florida. Many spray irrigation plants have been installed in the North Central States while scattered installations can be found in practically all Southern and Western states.

The Department says that it has received many letters asking for information regarding irrigation in Eastern localities. It appears that the pump and pipe manufacturers, and the central station could make profitable use of this irrigation movement. It should be called to their attention. In that advance the coal industry would profit.

## Eye as Victim or as Culprit

WHICH ARE THE MORE important, eye accidents or accidents from faulty eyes?

At a recent executive meeting of the American Society of Safety Engineers, which is the engineering section of the National Safety Council, a member of the executive board said he had seen only one workman in either the construction or the machine industry who wore spectacles to correct his eyesight. Yet in that executive board as then assembled—and twelve were present—all but two wore glasses of one type or another.

He could not believe that the average workman had any better eyes than the men in that executive board and if they had not they were exposing themselves to many hazards. The Society mentioned is preparing to make a research into the "Influence of Faulty Vision on Accidents." It seems that the miner also must often fall a victim to faulty vision. Working in the dark, with the insufficient light of a single lamp, his condition must be perilous if his vision is defective. It is quite likely that accidents to the eye are not nearly so frequent or so dangerous as accidents caused by defective vision.

## Only One Size for Coal

SOME TIME IN THE FUTURE coal will be prepared at the mine in only one size—slack—unless, indeed, it is pulverized before shipment for use in powdered-coal furnaces. The coal industry should hasten that day. Operators should everywhere be studying the possibility of a greater use of fine sizes whether as slack or as dust.

When that time comes coal will be handled at the face with less care than today, pneumatic transportation may be adopted and coal may even be taken to market hydraulically through pipes. Coal will be coal then, no matter what is its size. No one will have to consider in that day whether he can dispose of the rest of his product, if he puts his output over any given screen. It is probable that all the coal will be crushed at the mine because some of the consumers, especially those who use it for heating, may not be equipped for crushing their fuel. The power plants at that time may be all at the mines so that only the coal needed for heating will be "shipped' by pipe or car, and perhaps not even that will have to be transported for it may be converted into gas before shipment.

To make these developments possible much remains to be accomplished. At present coal should be transported to the local power stations wherever energy is needed far from a natural fuel supply. Probably it will be necessary to take coal to gas houses near where the gas is to be used unless the load is uniform the year round, which is not the case, of course, where gas is used for house heating as it is in a degree in all cities. The demand for gas for cooking is less seasonal, and where so used the possibility of piping it with profit is increased.

Certain it is that a much larger use of small coal can be made, and if the market for it improves it will be possible to raise the price to such a figure that it will be profitable to mine coal to supply the slack market alone. When that time comes for the high-volatile region one of its greatest difficulties will be solved. Fortunately, the low-volatile mines have been able to operate at all times on a run-of-mine basis.

However, he would be foolish indeed who would let the interest in the future market so influence him as to neglect preparation. So long as present equipment is used for burning coal, careful sizing will pay. No one will do well to let a distant ideal, to which we shall for years only approximate, interfere with a prudent effort to give the present market the service it demands.

## Steam Better than Water

AS A RESULT of power-house economies and the skill shown by steam-station designers, hydro-electric development seems likely to be kept in check. Where, as at Niagara Falls and on the Pacific Coast there are abundant opportunities for the manufacture of hydro-electric power and no coal, there can be no conflict between water and steam as a source of power. But in other places the outcome will favor the use of steam.

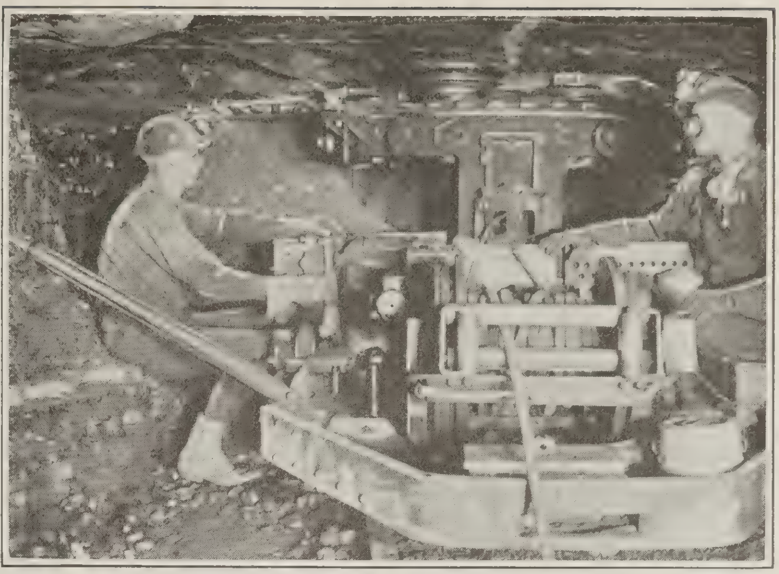
It is usually the case that hydro-electric power is generated just where no one would think of using it, in mountain fastnesses where no one lives and where there are few farms. Coal, however, many years ago surrounded itself with a large and industrious population. "White coal," or water power, might eventually do the same, but that takes time.

Droughts recently have interfered with the operation of hydro-electric systems and have made it necessary to add to the number and size of the steam auxiliaries, thus adding to the cost of water power. Steam-station engineering has developed to such a point that stations costing $125 per kilowatt of capacity have been able to produce one kilowatt-hour for six mills.

Opportunities exist for further improvement of steam plants. They are low in overall efficiency whereas hydro-electric power borders on a maximum. So, after all, the savings in the economy of steam at central station plants is not going to be altogether a disadvantage. It is going to prevent hydro-electric power from making further development. The fact that the best sites have been exploited and the jealousy with which the public watches all hydro-electric developments, especially where they detract from scenery of great natural beauty, are other reasons for feeling assured that steam power will always be a strong competitor to water.

# Turret-Type Cutters Improve Coal Mining in Kentucky

## Three in One Mine Save Labor Protect Weak Roof and Keep Coal Cleaner — Another Makes the Amburgy Seam Marketable



**By Alphonse F. Brosky**
Assistant Editor of *Coal Age*,
Pittsburgh, Pa.

THE FAR-REACHING utility of coal-cutting machines that can operate in the top, bottom or middle of a seam is well demonstrated in two eastern Kentucky mines. Machines of this turret type that can cut across a face from a track position greatly reduce the time and labor factors of mining. Cutting at the top they protect a weak roof from the shattering effect of explosive. Cutting at any level they help to remove slate bands from a seam, thus not only reducing ash content of coal shipped but preventing the waste incident to operating a machine in coal itself.

The first two benefits were the ones mainly sought by the Consolidated Fuel Co. when it installed three turret machines in its Elsie No. 2 mine on Smoot Creek in Letcher County. The third was the principal consideration at the adjacent mine of the Stafford Coal Co. In both mines the arc cutters have "earned their keep" and in neither have the machines been given an opportunity to reach their full capacity. Expansion of operations will do that later.

The Consolidated Fuel Co., by using its three machines for cutting above the coal in a soft roof slate, has largely solved the problem of separating this material which otherwise comes down and mixes with the coal. In this mine, halfway between Blackey and Whitesburg, the Hazard No. 4 seam, 56 in. thick, is worked. The thickness of the cover varies from 600 to 800 ft. Rooms are driven 15 ft. wide and 200 ft. long on 50-ft. centers. Entries are mined 10 ft. wide.

The region of this seam lies roughly between Hazard and Whitesburg. The thickness of the seam is greatest near Whitesburg. In the immediate vicinity of Hazard the seam is 3 to 3½ ft. thick, having a bottom of hard smooth slate which is called "jack rock." In the Elsie No. 2 mine and throughout the vicinity, where the coal is thicker, the jack rock, 4 to 6 in. thick, is underlaid by 12 to 14 in. of bottom coal which is absent where the seam is thinner.

The top above the seam is not uniform in the Elsie No. 2 mine. This creates varying mining conditions. In wide areas the coal is overlaid by a band of soft slate, the maximum thickness of which is 6 in. Because of it the turret machines were installed. In other parts of the mine the top is of a smooth harder slate, which is taken down after the coal is mined. The slate in some places is rough without regular cleavage and contains kettle bottoms. In places these shales attain thicknesses of 6 to 8 ft., being capped by a deposit of sandstone. Elsewhere the shales disappear leaving in their place the sandstone which occasions little worry to the management. Sometimes a draw slate is found between the sandstone and the coal. This multiplicity of roof conditions partly led to the adoption of the arc cutting machine. Mainly, however, the decision was dictated by the need of keeping the coal free of shattered particles from the soft slate top.

Throughout most of the region there lies, immediately above the 6-in. layer of soft slate, a 4-in. layer of hard slate which must be taken down. The latter does not contribute a higher ash content to the coal because a span of this material stays in place at least until after a cut under it is loaded. An illustration typical of this condition appears in the accompanying

CUTTING MACHINES which operate from a position on the mine track are gaining favor. This is chiefly due to the saving in time and labor in making ready to cut and also to move which these machines effect, accounting for their greater productivity. A machine which cuts a horizontal kerf at some level above the floor automatically falls into this class for it must be built heavily enough to hold against a thrust above its center of gravity and consequently must be supported by rails. In the future machines of this type are bound to be used more and more to cut out bone and ash, thereby widening the markets of some of our coals. They may redeem "lost" mines.

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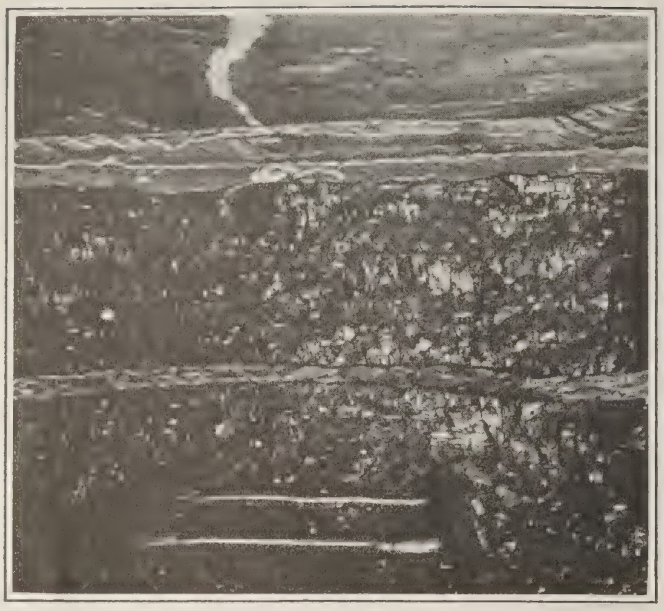
By the use of cutters such as the one shown in the headpiece the Consolidated Fuel Co. has turned into a favorable condition what before caused it considerable difficulty in drives for cleaner coal. This machine is shown cutting out a soft roof slate which always had come down and mixed with undercut coal. And, of course, a fair quantity of lump coal is added to the recovery by cutting in the slate. This place, which is 10 ft. wide, was cut in four minutes.



**A Typical Condition in Elsie No. 2 Mine**

About 14 in. from the floor is seen the 4-in. band of "jack rock" which is lifted out of the cut after the top bench is loaded and before the bottom bench is mined. Usually the top bench is shot and the bottom bench dug. A soft slate is directly above the coal. Harder slate is above the soft, which is taken down after the cut is loaded and above that the rather solid roof slate.

halftone showing a room face. As this hard band sometimes forms the top of the seam the cutting machine helps to prevent the shattering of this band of hard slate and upper strata during the shooting.

Little need be said about the actual operation of cutting because with these details the reader is familiar. The machine cuts in the soft slate wherever this material forms the top and in the coal where sandstone or hard slate forms the roof. It works at approximately the same rate in either material easily cutting 25 to 35 places, 10 and 15 ft. wide in a day. The output of the Elsie No. 2 mine is now about 800 tons. All of this coal is cut by the three machines. However, as they do not work under the same conditions the output of each varies. The crews do not work a full 8-hr. shift. If they did the three machines should be able to average 1,000 tons a day without difficulty.

The occurrence of the jack rock in the seam and its effect on shooting are other factors which may have influenced the adoption of this type machine. If the coal were undercut the shots would bring down the jack rock with the top and bottom benches, a condition to be avoided for obvious reasons. Furthermore, the jack rock by virtue of its comparative resistance and location in the seam is likely to reduce the effectiveness of the shots.

As it is now, a 7-ft. cut is made by an 8-ft. cutterbar. Two 1½-in. rib shot holes 7½ ft. deep are charged with either one and a half or two sticks of permissible explosive, bringing down the top bench of coal which is loaded first. The shooting of the upper bench breaks the jack rock making it easy to load, and springs the bottom bench sufficiently to produce large lump coal. Top cutting simplifies what otherwise would be a difficult condition for shooting.

The Stafford Coal Co., opening up its mine near Elsie No. 2 mine operates in the Amburgy seam which is below the Hazard No. 4 seam. It is using a low type arc-cutting machine for a different purpose. It is said this company is the only producer in Letcher County mining the Amburgy seam. Aside from a 3- to 5-in. bone parting which divides the seam into a 16-in. top bench and a 27-in. bottom bench, the seam is low in ash. The roof is generally sound and self-supporting.

This band of bone strictly is not a parting because it is more or less burnt to the upper and lower benches and, therefore, cannot be separated satisfactorily. This coal seam is fairly persistent as to thickness and has a good roof but little effort has been made in the past to mine it. The fact that wants are known to occur in the seam may be partly responsible for this but the main reason is the bone band within the seam.

### Other Methods Failed

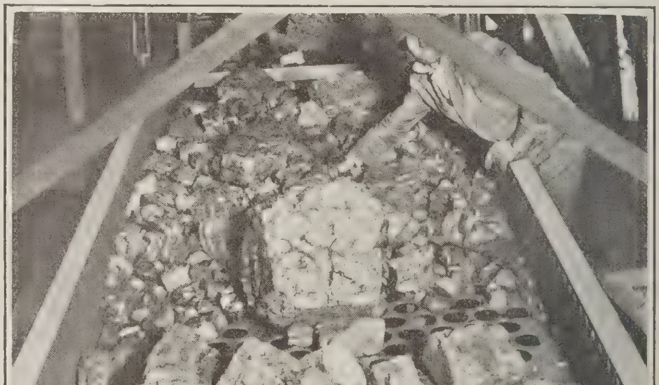
In the several attempts made to work this seam both pick mining and undercutting methods were tried. In neither case could enough of the bone be removed by hand to provide a low-ash coal. The Stafford Coal Co. reopened a mine abandoned by a predecessor, with the intention of cutting out the highly objectionable band of bone. And this is precisely what the company is now doing with the aid of the machines.

Rooms are driven 16 ft. wide and 200 ft. deep on 50-ft. centers. Room pillars are recovered immediately upon completion of rooms by open-end cuts on the backs of the pillars, the machine retreating toward the entry. In the pillar work as well as in rooms the machine (alternating-current drive) is used. Twenty-five-pound rails are laid on steel ties in rooms and pillar sections for the machine.

After the bone is cut out, requiring about 5 min. for a place 16 ft. wide, the upper bench springs sufficiently to require no shooting. Large lumps (splint coal) are dislodged from the upper bench by pick mining. Occasionally a pop shot is needed to loosen the coal in this bench. Three sticks of permissible explosive in two shots are sufficient to produce good lump coal.

As this mine is in the early stages of its development it has not been possible to determine how much work this machine will do in a full shift under the conditions described. It is believed that the machine should cut at least 25 rooms in one shift.

It is commonly thought that machines which cut a kerf above the floor add to the danger from coal dust ignition. This of course holds where the machine is

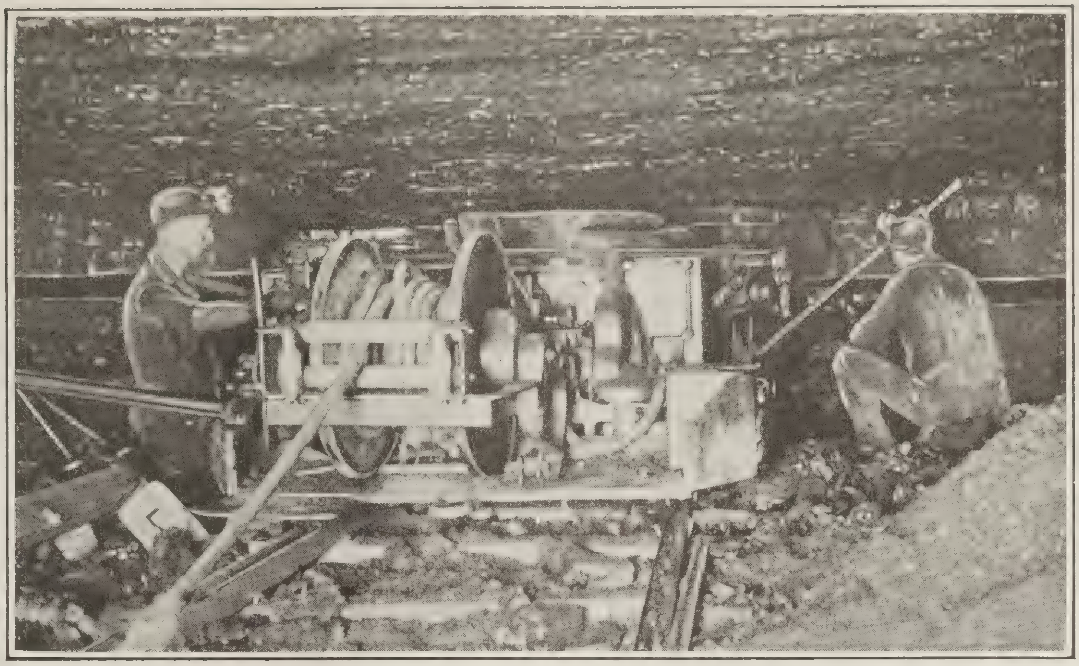


**Shaker Screen at Elsie No. 2 Mine**

The Consolidated Fuel Co. believes in good preparation and, therefore, has installed that equipment which will bring this about. This coal comes from the Hazard No. 4 seam.

**Cutting Out Bone**

This machine, and it alone, makes the Amburgy seam in this mine marketable. About 16 in. from the floor is a 3- to 5-in. band of bone which can be separated from the coal satisfactorily by no other means than cutting. Attempts have been made to mine the seam by pick and by undercutting but both schemes failed because the bone adheres tenaciously to the coal. The large-diameter cable indicates that alternating current is used for cutting.



cutting a kerf in coal. It applies in lesser degree where the machine cuts in bone, and not at all where the cutting is in slate. In the latter case, cutting really serves as a measure of safety because of the slate bug dust produced. Sprinkling the cut with water taken from a pipe line or from a storage tank by an arrangement such as that described in *Coal Age*, May 14, p. 711, will prevent a dangerous quantity of dust from floating in the air. Respirators may be worn by the crew for protection against the shale dust coming from the kerf, as in the Elsie No. 2 mine where respirators are used by the crews. Electrically the top cutters are as safe as the undercutters, it being possible, of course, to procure permissible equipment in either machine.

## Canada Has Much Semi-Anthracite in Alberta Reserve Beds

The Dominion Fuel Board has issued a report by James McEvoy, of the Canadian Geological Survey, on the coal areas of the Smoky River and Sheep River district in Alberta, of which Mr. McEvoy made a close examination. These coal areas are interesting but not commercially available yet. He states that there is no anthracite in these areas. In one locality on Smoky River there is coal the analysis of which shows a fuel ratio just within the semi-anthracite class, but physically it has no anthracitic properties. A large area on Smoky River and Sheep River contains semi-bituminous coal, or as it is usually called in the West, "high grade" bituminous. Considered as a new source of coal supply the principal fact is the occurrence of a large tonnage of high grade bituminous coal, one notable 14-ft. seam grading in places by analysis as semi-anthracite.

This seam will give a superior steam coal, but it is not notably better than the other high grade bituminous coals already developed in Alberta in the qualities which domestic users require. None of these coals will satisfy the domestic consumer who wants fuel to take the place of anthracite as they all have a ragged fracture which makes fine dust when handled and they will cause a deposit of soot in flues and chimneys. While Mr. McEvoy regards these areas as a valuable asset in the future, he considers that there is no need for their development on a commercial scale for many years to come.

**Blue Diamond Mine, One of the Largest Producers in the Hazard Field**

At the left is the coal loading tipple and aerial refuse conveyor of the Blue Diamond Coal Co., Blue Diamond, Ky. This mine loads 2,500 tons per day. Flight conveyors retard the coal on its movement down the hillsides from the mine openings on each side of the hollow. On the right is shown the repair shop and substation on the "Old Side" of the Blue Diamond mine, which is one of the leading producers in the Hazard Field. This shop, supervised by Harry Kivett, chief electrician, does repair work for the mines of the Sapphire and Liberty Coal companies which are under the same management as the Blue Diamond.

# Illinois' Hope Lies in Mechanical Loading and Cleaning, Speakers Tell Institute

**By Frank F. Tirre**
St. Louis, Mo.

ILLINOIS' HOPE of regaining its position in the the coal industry in spite of non-union competition lies in reducing its production costs by mechanical loading. To accomplish this it will be necessary for union opposition to be softened and for coal cleaning methods to be adopted generally, speakers insisted at the thirteenth meeting of the Illinois Mining Institute Nov. 6 and 7 at West Frankfort, in the heart of the southern Illinois coal field. The two-days' meeting gave opportunity for much good fellowship at the Franklin County Country Club, a technical session, visits at various mines, a dinner in honor of A. D. Lewis, the newly appointed director of the Illinois Department of Mines and Minerals, and an election of officers in which E. G. Lewis of Royalton, Ill., was chosen president for the coming year.

Under the guidance of "Jack" Rodenbush, mine superintendent for the Chicago, Wilmington & Franklin Coal Co., the visitors were taken down into Orient No. 2 mine, the present holder of the world's tonnage record, 11,325 tons in 8 hr., made on Nov. 4. On the day of the visit 6,000 tons were produced up to the noon hour without confusion or interruptions of any sort. Other visitors made a general inspection of the district, including strip mines, and many accompanied John E. Jones, rock dusting authority, on his safety inspection tour through Old Ben Coal Corporation mines. The fact that this was the "thirteenth" meeting of the Institute was no "hoodoo" as the gathering was a large and interesting one.

### Elect E. G. Lewis President

Harvey E. Smith, retiring president, in his opening remarks spoke sadly of the recent death of Martin Bolt, former secretary-treasury of the Institute and director of the Illinois Department of Mines and Minerals. After some routine matters were disposed of the constitution was changed to provide for twelve members of the board of directors instead of five, and after the report of D. D. Wilcox, chairman of the nominating committee, had been read the following officers were elected: President, E. G. Lewis, Royalton, Ill.; first vice-president, Wm. Kidd, Peoria, Ill.; second vice-president, Dr. L. E. Young, St. Louis, Mo.; secretary-treasurer, Frank F. Tirre, St. Louis, Mo. The executive board consists of the following: Thomas Back, Jas. S. Anderson, J. A. Garcia, J. A. Jefferis, John E. Jones, F. F. Jorgensen, S. T. Jenkins, A. D. Lewis, Geo. McFadden, A. C. Callen, John Rodenbush and Ed. Coulehan.

The subject of machine loading was introduced with John A. Garcia in charge of the discussion. Mr. Garcia pointed out that the selection of the machine with which to load coal was not all that was necessary. The idea must be sold to the whole organization in a mining company.

"Many coal operators have persisted in the old method of doing this work as we used to do it 50 years ago," said Mr. Garcia, "Mechanization of coal mines is at our door. Are we going to open the door or are we going to let this opportunity, which does not knock more than once, pass on? We are confronted with competition from other states whose favorable mining rates are enabling them to take our markets. This has put our industry in Illinois in a most deplorable state and in my judgment the crisis can be met only with mechanization of our mines. This southern Illinois field with its thick seam and good coal is well equipped to meet competition."

### Useless to Look for Reduction

It was pointed out by a number of speakers that it is useless to expect a reduction in the present Illinois mining rate. A complete new order of producing coal must be made if the state is to maintain itself. Many changes will be noted during the next five years, especially in the cleaning of mechanically loaded coal. This is an item of cost ranging from 3c. to 10c. per ton. It seems prohibitive until one realizes that by mechanization five times this amount can be saved. Mechanical loading will increase the quantity of impurities 1½ per cent to 3 per cent, and in some instances it may be necessary to wash the coal. A washing method was mentioned which cleans by stratification at a cost estimated at 6c. per ton as against a cost of 25c. per ton on a jig washer. With this washer there is no loss of water. It is reused.

Most southern Illinois coal smaller than 3-in. must be washed, speakers declared. Larger coal, machine loaded, can be picked as clean as if it were loaded by hand. Machine production averaged 264 tons per shift per loading machine in one mine on room work only, making a saving of 50c. per ton. Several speakers agreed that proper coal cleaning should not absorb more than 20 per cent of a loading machine's savings.

It was suggested by a prominent engineer that in the installation of mechanical methods of producing coal, only a part of the mine be equipped with loaders at first. A careful record could be kept of the earnings and these earnings applied to the further purchase of machine loaders until hand loading was completely displaced.

### Machines Quickly Repay Investors

Machine loading reduces the number of men in a mine and cuts down by 60 per cent the number of working places required under hand-loading. Concentration of the working force such as this reduces the length of entry to be kept up, and the investment for rails, wire, and supplies. It was estimated that in a period of three years a mine can be fully equipped with machine loaders bought with the earnings of those first installed.

In some instances a machine cuts and loads the coal. Where this is done, shooting during the day with men in the mine is necessary. This is now considered by some to be in violation of the law. The Institute urges a speedy solution of this question.

In Illinois a joint commission of miners and operators has been appointed to work out a scale of wages for men operating loading machines. The Institute is appealing for an immediate report from this commission because further installation of loading machines in Illinois is blocked by order of the United Mine Workers, District 12, until a scale is provided.

Dr. F. C. Honnold, of the Honnold Coal Bureau in Chicago, acted as toastmaster at a dinner in honor of the new director of the Illinois Department of Mines and Minerals, A. D. Lewis, a brother of John L. Lewis, International President of the United Mine Workers.

The first speaker was T. C. Powell, president of the Chicago & Eastern Illinois Ry., who spoke about the part played by the railroads in the production of coal in this country. He congratulated the southern Illinois field upon the opportunity it has before it as the greatest coal-producing center in the world, and deplored the present competition it has to meet—a competition that is causing many of the large producers to remain idle when they ought to be in operation.

"In looking over figures," said Mr. Powell, "I find that we have 70 mines on the line of the C. & E. I. Out of the 70 operations, 37 are definitely closed. These 37 have a rated capacity of 1,036 cars per day.

### CITES RECORD FOR OCTOBER

"Our actual experience during October was, however, that of 33 mines in condition to operate, the fluctuation from day to day has been extreme in that only twelve mines were working on Oct. 12, and on only one day were as many as 28 mines in operation. The average for the month was about 20 mines. Instead of turning out 1,330 cars of coal per day, the volume fluctuated between 300 and 400 cars with the maximum never reached.

"Even the reduced quantity of coal that has been loaded has not all been sold. We have on hand today unbilled something like 400 cars of coal. Each railroad interested in the development of its coal mines must make a heavy investment in coal cars and as long as those cars are idle or stand under load unbilled, and all during the period that they are moving back to the mines for loading, interest charges on the cars continue to accrue. A coal car which costs $2,500 and will hold 70 tons of coal, must make at least 40 trips under load before the cost of the car has been made, to say nothing of the cost of transportation, maintenance and interest charges in the meantime. It is to the interest of the coal companies as well as the railroads to move these cars quickly between the mines and the consignee. The more quickly the cars are released by the consignee the more certain the mines will be of getting sufficient equipment for additional business.

### POINTS TO FAILURE OF WATERWAYS

"There has been some talk of waterways, especially in this part of the state. If any means can be found to cheapen the transportation of coal by water ways, I would say 'Amen' as I believe that the public is entitled to all such improvements that are feasible. But before our government or state is called upon to make so vast an expenditure as has been proposed, I would want you to look well into the situation, gathering information as to the experience of the C. & O. canal into Washington. I believe it has been a failure. In New York the Erie canal was constructed between 1905 and 1924 and a sum of $260,000,000 expended, and it is still unfinished. The people of New York State pay an average of $4.40 for every ton handled by this canal, and the only commodities handled are a little bit of gravel, sand, oil and grain. These two examples should make tax payers consider."

Harvey E. Smith, past-president of the Institute made a graceful address complimentary to Mr. Lewis, the new state director of mines and banquet guest of honor. He also extolled the virtues of the Institute.

### SHOWS CROSS-SECTION OF MINING INTERESTS

"Membership in the Illinois Mining Institute is open to those either engaged in or interested in mining," said he, "and its roll of members shows a true cross-section of the mining interests of the state. Included in its members and present at this meeting are the owners and officers of coal properties, general managers and general superintendents, pit bosses and assistants, mine examiners and top bosses, electricians and mechanics, consulting engineers, state mine inspectors, rescue men, representatives of the United States Bureau of Mines, mining engineers and geologists, college professors, railroad men, officials of the United Mine Workers, coal salesmen, salesmen selling equipment and supplies necessary to the operation of the mines, electrical engineers representing the public utilities which supply the mines with power, and, last but decidedly not least, the miners—the men who really produce the coal and who are the foundation upon which the whole structure of coal production rests.

"This Institute has in these lean years of the coal business even a greater field for service than was presented in the more prosperous years. We mining men of Illinois, even though the outlook for the immediate future is dark indeed, will not admit that the coal production of this state is to fall permanently from the record of nearly 90,000,000 tons a year to less than half that figure. We are favored in this state with coal deposits which in extent and in favorable mining conditions are second to none. With these natural riches at our command we will not admit that we are not able to devise means and methods by which this coal may be extracted so as to compete with coals from other states. The best brains of the industry have been working on this problem without as yet finding a solution, but the problem must and will be solved.

### CO-OPERATION WILL HELP SOLVE PROBLEMS

"The solution, however, will only come through the thorough co-operation of all the various interests connected with the industry. In arranging this meeting in the heart of the coal producing center of the state, affording this opportunity for the free interchange of ideas, it was with the hope that some constructive thought might be brought to light which would assist in clearing the industry's troubles which so vitally affect us all."

Dr. Honnold next called upon H. C. Miller of the Bureau of Mines, who assured the new state director of the hearty co-operation of that governmental bureau. Dr. L. E. Young spoke in behalf of the operators of the state, extending his most hearty good wishes and pledging the support of Illinois mine owners. State Senator F. C. Sneed, welcomed Mr. Lewis on behalf of the United Mine Workers, District 12, after which the honor guest made fitting reply, thus bringing the Institute's semi-annual meeting to a close.

# Miners' Union Maintains Doubtful Hold on Far West and Mountain States

**By Sydney A. Hale**
Special Contributor, *Coal Age*,
New York City

THE LABOR SITUATION in the bituminous coal producing states west and north of the area covered by the operations in the Southwestern Interstate Field on the whole has shown less change in recent years than any other part of the country outside of the strongly unionized districts of Illinois, Indiana, Iowa, Michigan, Kansas and Missouri. To this generalization, however, three striking exceptions must be made. Colorado has been in more or less turmoil for over two decades. A large part of the operations in Washington—the only important producing state on the Pacific slope—has broken away from the union and North Dakota has established an open-shop basis. In the other states in the Rocky Mountain and Pacific divisions, the balance of power between union and non-union fields struck several years ago remains unchanged.

The United Mine Workers established itself in the Northwest in the early years of the present century. Montana and Wyoming were organized in 1904, Washington came into the fold in 1905; full recognition was extended to the union in 1908. In general, the effect of that recognition has been the same as in the older organized territories farther east. Basic day rates, of course, have been controlled by the advances granted in the Central Competitive Field. These advances, it will be recalled, raised the level of the base inside day rates from $2.84 under the 1912-14 contract to $7.50 under the Jacksonville agreement. Pick-mining rates in Montana and Wyoming were increased a total of 42 to 43.5c. per ton during the same period. These advances were more than met in the non-union and open-shop mines of Colorado and Utah, where the net increases for typical groups of operations ranged from 40 to 52c. per ton.

Individual variations both in basic rates and in increases, however, were much greater at the unorganized mines. A study of wage rates, made by the United States Coal Commission, showed increases ranging from 8 to 64c. per ton at 32 mines in Colorado and 16 to 48c. per ton at nine mines in Utah. In the majority of cases, the hourly rate for typical inside labor, such as brakemen, drivers and trackmen, was slightly lower in Colorado in the spring of 1912 than it was in the Central Competitive Field. In that major group the base rate was 35.5c. per hour. A few mines paid a higher hourly rate in Colorado at that time, going as high as 40c. but in most cases the rate was between 31 and 31.5c. Rates were advanced generally in 1912 and 1913 and cut at many operations in Colorado in the second half of 1915. Advances were common in 1916 and 1917, the second half of 1919 and in 1920. Reductions were made in the second half of 1921 and in the first half of 1922, but rates were restored during the second half of 1922 so that Jan. 1 1923 found the general average a few cents per hour above the base rates in the Central Competitive Field.

This summary and the detailed figures presented in Table VI illustrate sharply the effect of organization upon the adjacent non-union states in the Mountain division. Although changes have been more frequent in the unorganized states of Colorado and Utah, it hardly can be denied that the proximity of the strongly organized union fields of Montana and Wyoming has had a stabilizing influence upon non-union rates—particularly in times of prosperity. Wartime and post-wartime increases in the organized fields have been matched by increases in the open-shop regions, but the actual changes in cents per ton or per day have not always been the same. The non-union districts, however, have been in a position to take advantage of depressed conditions with wage reductions.

This was notably true of Colorado in the first half of 1922, when the pick-mining rates were reduced to a 1917 basis. The 1920 rates, however, were promptly restored the last half of the year. At the present time, the controlling rates are substantially less than the 1920 bases. In other words, it appears to be the fixed policy in that state to give the non-union workers the benefit of any wage victory won by the United Mine Workers.

### Table VI—Changes in Pick-Mining Rates in Mountain States

(Rates in Cents per Ton)

| | 1912 | | 1915 | 1916 | | 1917 | | 1919 | 1920 | 1922 | | Net Increase 1922 over 1912 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan.-June | July-Dec. | July-Dec. | Jan.-June | July-Dec. | Jan.-June* | July-Dec. | July-Dec. | Jan.-June | Jan.-June | July-Dec. | |
| Colorado | | | | | | | | | | | | |
| Thick-seam, 132 in. | 45.0 | 45.0 | 45.0 | 45.0 | 45.0 | 55.0 | 80.0 | 80.0 | 94.0 | 74.0 | 94.0 | 49.0 |
| 42 in. seam........ | 85.0 | 90.0 | 80.0 | 80.0 | 83.0 | 93.0 | 109.0 | 124.0 | 133.0 | 109.0 | 133.0 | 48.0 |
| Trinidad.......... | 50.0 | 55.0 | 55.0 | 55.0 | 58.0 | 68.0 | 78.0 | 89.0 | 102.0 | 78.0 | 102.0 | 52.0 |
| Montana | | | | | | | | | | | | |
| Red Lodge, Carbon County......... | 65.0 | 65.0 | 65.0 | 67.5 | 67.5 | 72.5 | 84.5 | 96.0 | 108.5 | 108.5 | 108.5 | 43.5 |
| Bear Creek, Carbon County......... | 78.0 | 78.0 | 78.0 | 80.5 | 80.5 | 87.5 | 97.5 | 108.5 | 121.5 | 121.5 | 121.5 | 43.5 |
| Musselshell County | 73.0 | 73.0 | 73.0 | 75.5 | 75.5 | 82.5 | 92.5 | 103.5 | 116.5 | 116.5 | 116.5 | 43.5 |
| Utah | | | | | | | | | | | | |
| Thick-seam, 113-156 in. | 50.0 | 50.0 | 50.0 | 50.0 | 50.0 | 60.0 | 75.0 | 85.5 | 94.0 | 94.0 | 94.0 | 44.0 |
| 72-108 in. seam..... | 63.0 | 63.0 | 63.0 | 63.0 | 63.0 | 69.0 | 79.0 | 90.0 | 103.0 | 103.0 | 103.0 | 40.0 |
| 66-130 in. seam.... | 46.0 | 46.0 | 46.0 | 46.0 | 46.0 | 55.0 | 70.0 | 80.0 | 94.0 | 94.0 | 94.0 | 48.0 |
| Wyoming | | | | | | | | | | | | |
| Sweetwater........ | 58.0 | 58.0 | 58.0 | 61.0 | 61.0 | 67.0 | 77.0 | 88.0 | 101.0 | 101.0 | 101.0 | 43.0 |
| Frontier, Lincoln and Carbon | 54.0 | 54.0 | 54.0 | 56.0 | 56.0 | 62.0 | 72.0 | 82.0 | 96.0 | 96.0 | 96.0 | 42.0 |

*Advances in Montana and Wyoming took place in April, October and November, 1917 and in November, 1919.

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Fifth of a series of articles describing the changes in the labor status of the different bituminous coal producing districts of the United States in recent years. Preceding articles appeared in *Coal Age*, Sept. 25, Oct. 1, 8 and 29. Another article will appear in an early issue.

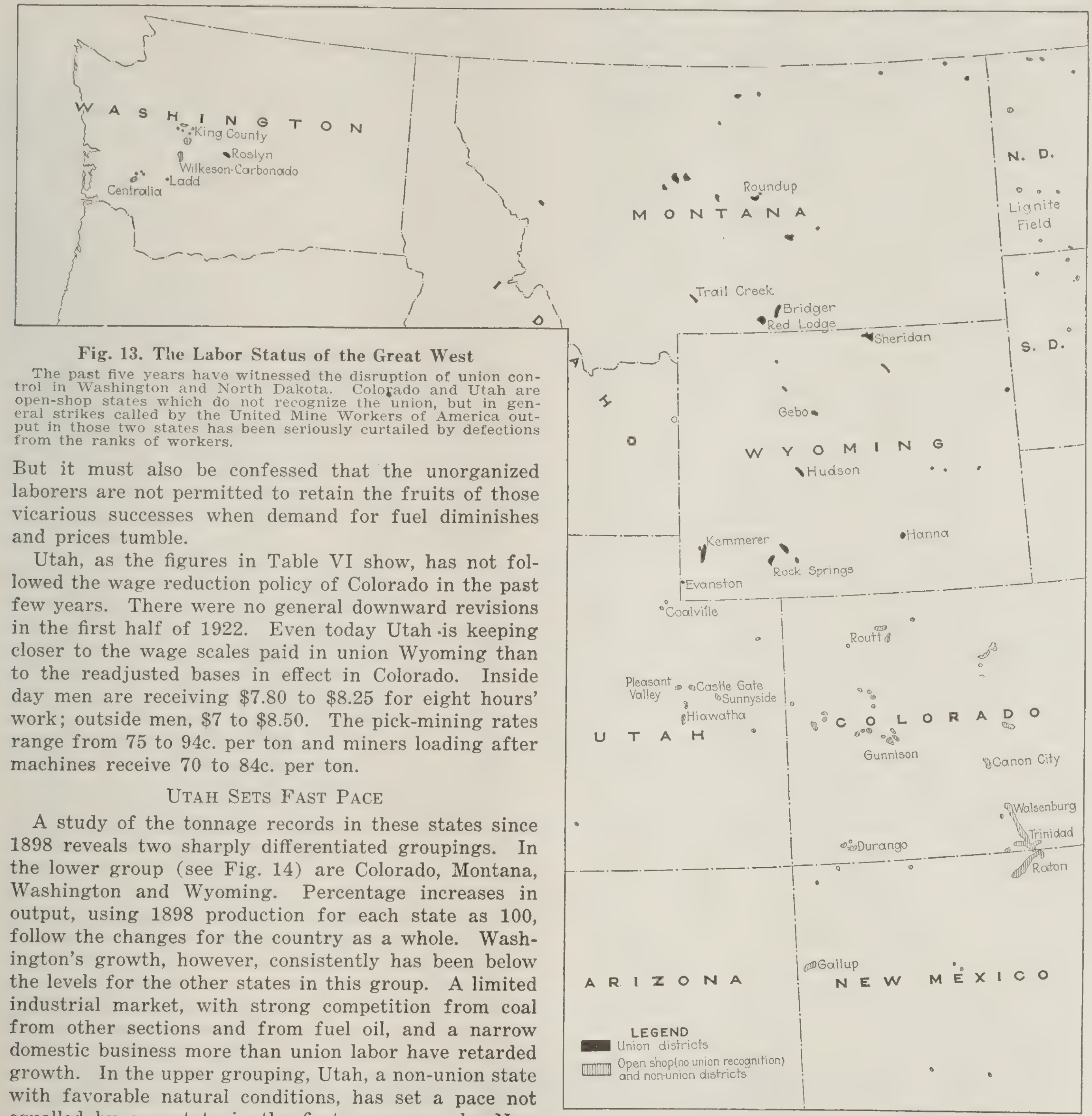

**Fig. 13. The Labor Status of the Great West**

The past five years have witnessed the disruption of union control in Washington and North Dakota. Colorado and Utah are open-shop states which do not recognize the union, but in general strikes called by the United Mine Workers of America output in those two states has been seriously curtailed by defections from the ranks of workers.

But it must also be confessed that the unorganized laborers are not permitted to retain the fruits of those vicarious successes when demand for fuel diminishes and prices tumble.

Utah, as the figures in Table VI show, has not followed the wage reduction policy of Colorado in the past few years. There were no general downward revisions in the first half of 1922. Even today Utah is keeping closer to the wage scales paid in union Wyoming than to the readjusted bases in effect in Colorado. Inside day men are receiving $7.80 to $8.25 for eight hours' work; outside men, $7 to $8.50. The pick-mining rates range from 75 to 94c. per ton and miners loading after machines receive 70 to 84c. per ton.

### UTAH SETS FAST PACE

A study of the tonnage records in these states since 1898 reveals two sharply differentiated groupings. In the lower group (see Fig. 14) are Colorado, Montana, Washington and Wyoming. Percentage increases in output, using 1898 production for each state as 100, follow the changes for the country as a whole. Washington's growth, however, consistently has been below the levels for the other states in this group. A limited industrial market, with strong competition from coal from other sections and from fuel oil, and a narrow domestic business more than union labor have retarded growth. In the upper grouping, Utah, a non-union state with favorable natural conditions, has set a pace not equalled by any state in the first group nor by New Mexico. On a flat tonnage basis, however, Utah output is still far below that of Colorado and lags considerably behind that of Wyoming. North Dakota, not shown, has registered a still greater percentage gain, but the actual tonnage raised is relatively small.

The labor situation in Colorado has been more in the limelight, but to Washington belongs the distinction of making the first clean-cut, and successful, break with the union since the war. On March 1, 1921, a committee representing 90 per cent of the commercial (non-railroad) tonnage of the state announced that it was no longer possible to continue to pay the 1920 wage scale and proposed an average reduction of 23 per cent, to be effective two weeks later. If the district officials of the United Mine Workers, with whom the operators had been in fruitless negotiation for two months, would not assent to the plan, the mines would close down.

The miners rejected the reduction and the middle of March saw all but one company on the west side of the Cascades idle and one large company and several smaller ones on the east side down. The railroad mines in the Rosyln-Cle Elum field, however, continued to operate without reduction in wages; most of the mines in that section shipping coal commercially also continued to work. To the charge that the action of the operators closed down constituted a lockout in violation of existing agreements, the producers accused retorted that they had put the 1920 rates in effect following the decision of the United States Bituminous Coal Commission in the Central Competitive Field, but had refused to enter into any written contract guaranteeing the maintenance of those wages. Without the reduction sought, declared the operators, it would be impossible to meet the competition of Vancouver Island and Utah coal and of fuel oil.

The final severance of union relations did not come until midsummer. In the interim operators had consented to the appointment of a quasi-govermental commission to investigate the situation and later had stated their willingness to accept a wage scale recommended by an official of the state labor department as the result of that investigation. The union, however, after several weeks' delay, refused to consider the proposed scale or any other suggestion involving a reduction in wages. Thereupon the operators issued notice that they would no longer recognize the union and stated that they would reopen their mines at the scale suggested by the neutral member of the investigating commission. This scale called for a rate of $5.25 to $6 to inside underground labor and $4.50 to common labor above ground. Open-shop operation was formally commenced Aug. 22, but it was several weeks later before the producers were able to augment the state's production to a material degree, and union opposition did not completely disappear until the middle of 1923.

### Two Counties Remain Union

Throughout this quiet struggle Kittitas and Thurston counties have remained steadfastly union. Production in those two counties is dominated by railroad-controlled coal companies, and such operations, generally speaking, have been particularly susceptible to union advances and most unwilling to invite a shutdown or serious curtailment of output by questioning union authority. There are only three operating companies in Thurston County: one, railroad controlled, produced 174,403 tons out of the 194,702 tons mined in that county in 1922 and 252,032 tons out of 268,202 tons in 1923. In Kittitas County, 866,183 tons out of a total of 1,053,584 tons in 1922 and 1,119,102 tons out of 1,358,359 tons in 1923 were produced by a railroad coal company—one of the six operators in that county.

The record of non-union and union production for the state as a whole during the past three years has been as follows:

| | Union Mines Net Tons | Non-Union Mines Net Tons |
|---|---|---|
| 1922 | 1,248,246 | 1,352,722 |
| 1923 | 1,626,561 | 1,319,446 |
| 1924 | 1,339,490 | 1,315,425 |

Approximately 2,045 men are employed in the union and 2,261 workers in the non-union mines.

Kittitas and Thurston counties still recognize the union, but the losses the United Mine Workers has suffered in the rest of the state have left their mark on the union wage scales. Up to May 1, 1923, the union maintained its "no backward step" policy in Washington as uncompromisingly as it had in other parts of its realm. But, after a month's suspension and two months' squabbling, district union officials did agree to a reduction in day rates—not to the level of non-union rates, it is true, but substantially less than had been paid. A comparison of the rates carried in the three scales is shown in Table VII.

Organized labor in the coal fields of Colorado has had a checkered career. For over 40 years it has struggled to establish itself in that state, only to go down in defeat when it pressed for recognition. There were strikes in 1883, 1893, 1903 and 1913 to establish union power. Strong-arm methods against the union were resorted to in some of these struggles. Organizers and members of the national executive board, said the convention of the United Mine Workers in 1905, "were murderously assaulted in broad daylight while traveling on passenger trains; other organizers were held up and beaten on the public streets, while still others were threatened that, if they did not depart from Colorado, their lives would be in danger." And in 1914 there was Ludlow!

Out of this bitter and bloody industrial warfare came the law creating the Colorado Industrial Commission and the establishment of the Rockefeller Industrial Representation Plan at the mines of the Colorado Fuel & Iron Co., the largest operator in the state. The Industrial Commission law, passed in the spring of 1915, "requires that no change in wages or hours shall be made without 30 days' notice to the commission. If a strike or lockout results from the change, or the

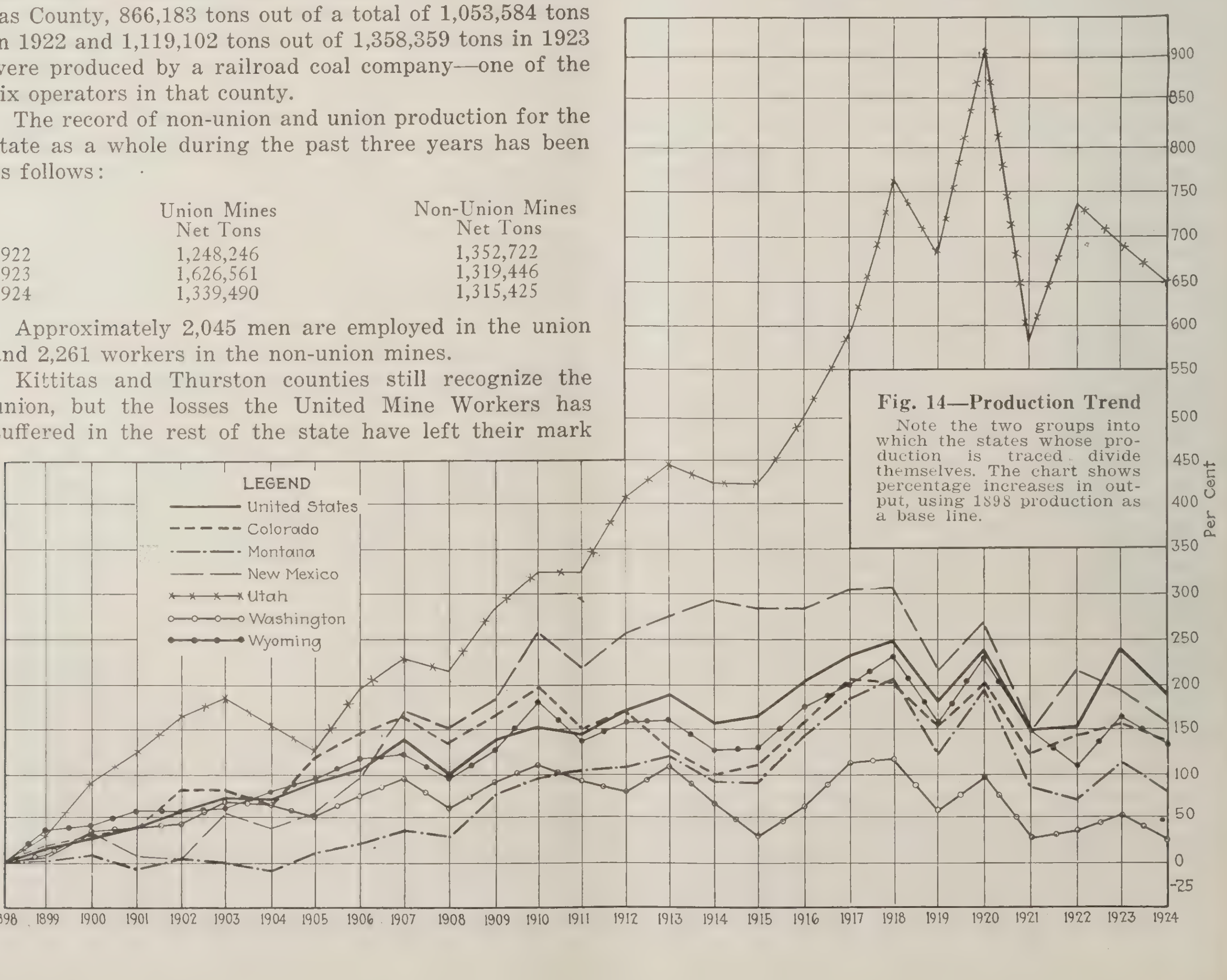

**Fig. 14—Production Trend**

Note the two groups into which the states whose production is traced divide themselves. The chart shows percentage increases in output, using 1898 production as a base line.

### Table VII—Day Wage Scales in Washington

| Inside Labor | Union Mines Prior to April 1, 1923 | Union Mines Effective May 1, 1923 | Non-union Mines 1923 |
|---|---|---|---|
| Miners, timbermen, tracklayers | $8.25 | $7.50 | $6.00 |
| Shot-lighters | 8.25 | 7.50 | ..... |
| Timbermen's helpers, tracklayers' helpers, hoist-men on development work, cagers' helpers, pumpmen, inside day labor not otherwise specified | 7.55 | 6.00 | 5.25 |
| Motormen, rope-riders, cagers | 7.75 | 6.25 | 5.50 |
| Drivers | 7.75 | 6.25 | 5.25 |
| Parting boys | 4.82<br>5.32 | 3.50<br>4.00 | .....<br>..... |
| Greasers | 4.77 | 3.50 | ..... |
| Trappers | 4.52 | 3.25 | 3.25 |
| Hoist boys on development work | 5.42 | 4.25 | ..... |
| Locomotive engineers | 7.75 | ..... | 5.50 |
| **Outside Labor** | | | |
| Engineers | 8.00 | 6.50 | 6.00 |
| Firemen, washermen (first class) | 7.40 | 5.90 | 5.25 |
| Cagers, development engineers | 7.50 | 6.00 | 5.25 |
| Cagers' helpers | 7.10 | 5.50 | 5.00 |
| Dumpers | 7.10 | 5.60 | 5.00 |
| Teamsters, blacksmiths' helpers | 7.25 | 5.50 | 5.00 |
| Couplers | 4.52 | 3.25 | 3.25 |
| Greasers | 4.37 | 3.25 | 3.25 |
| Blacksmiths (first class) | 8.05 | 7.00 | 6.00 |
| Blacksmiths (second class) | 7.75 | 6.25 | 5.50 |
| Carpenters (first class) | 8.05 | 7.00 | 5.75 |
| Carpenters (second class), bunker machinery tenders | 7.55 | 6.00 | 5.25 |
| Car repairers, choppers | 7.25 | 5.75 | 5.00 |
| Screen men, moving picking table men | 6.75 | 5.00 | 4.50 |
| Screen boys, moving picking table boys | 4.72 | 3.50 | 3.50 |
| Outside labor not otherwise specified | 7.00 | 5.00 | 4.50 |
| Machinists (first class) | 8.05 | 6.75 | 6.00 |
| Machinists (second class) | 7.75 | 6.00 | 5.50 |
| Lamp men (first class) | 7.55 | 5.75 | 5.25 |
| Lamp men (second class) | 7.00 | 5.25 | 4.75 |
| Washermen (second class) | 7.20 | 5.70 | 5.00 |
| Jig and table tenders | 7.00 | 5.50 | 4.75 |

proposal of it, the commission has power to order that former conditions be restored until an investigation can be made and a decision rendered."

This is not the place to describe and study the workings of the Industrial Commission law or of the Rockefeller plan. That latter was designed to effect a permanent peace in the relations between the coal company and its workers without yielding to the United Mine Workers "by developing some organization in the mining camps which will assure to the employees the opportunity for collective bargaining, for easy and constant conferences with reference to any matter or grievance which may come up and any other advantages which may be derived from membership in the union." The plan, which did not recognize the United Mine Workers, but which did not prohibit proselyting for individual members by union agents, is mentioned because its adoption led to an unexpected result—a union contract and recognition by the Victor-American Fuel Co. and 16 other Colorado operators.

In justifying its action, the Victor-American company asserted that the Colorado Fuel & Iron Co., by adopting the Rockefeller plan, had "opened the door to the unrestricted activities of the organizers of the United Mine Workers of America" and declared that self-protection under war conditions (the contract was signed in March, 1917) made the action taken by the Victor-American and its associates necessary. The agreement expired March 31, 1920, and was not renewed. The insurgent operators were willing to be guided by wage rates in competing union fields, but declined to continue recognition of the labor organization. Possibly the general strikes in 1919 and 1922 and the failure of the 1917 agreement to stampede the Colorado Fuel & Iron Co. and other operators not parties to the 1917 contract into recognition of the United Mine Workers soured the signatories.

Since the expiration of that agreement and the unsuccessful strike of the miners in the northern lignite fields to force recognition, union organization activities have been conducted more or less under cover. Yet it should not be forgotten that more than 50 per cent of the productive capacity of the state was hit by the 1922 strike. Recently the union has become more open in its efforts to strengthen its organization and to swell its membership. In this campaign it is placing great stress on the manner in which Colorado operators have departed from the Jacksonville scale.

The disintegration of union power in North Dakota was completed last year, when the last two mines which had been giving it recognition abandoned the cause of the United Mine Workers. At the present time there is no well-defined wage scale in effect in that state. Rates range from 65c. to $1 for room work and 75c. to $1.25 for entry work. The significance of North Dakota lies not in the tonnage being raised, although the output during recent periods of scarcity has been increased ten- and fifteenfold over the 1898 base. This growth means that the state is becoming more and more self-sustaining in its coal supply, thereby blocking the expansion Montana and Wyoming might expect from cultivating North Dakota markets.

In the Far West, as in the Southwest and in the Central Competitive Field, the changes in labor status which have taken place since the war all have been unfavorable to the United Mine Workers of America.

**Scenes at the Black Star Coal Co., Inc., at Alva, Ky.**

The illustration above shows the tipple of the Black Star Coal Co., Inc., at the company's mine in the Harlan Field, at Alva, Ky. On the right is a storage-battery locomotive bringing up a loaded trip to the tipple. The headlights shine through the bumper.

# Beating Anthracite Is Difficult in Winnipeg

**By George R. Pratt**
Alberta Government Fuel Engineer,
Winnipeg, Man.

FOR SEVERAL YEARS a consistent effort has been made to enable the producers of various coals in Alberta, Can., to gain and hold for their product the extensive market in and around Winnipeg in Manitoba which has been enjoyed for so long by Pennsylvania anthracite and other American coals. This campaign has progressed through many stages with varying degrees of success. There have been many obstacles to surmount, some of which have been overcome so that today the outlook is hopeful.

Winnipeg is situated far inland and, in consequence, has a long and continuous winter, without break, and a dry atmosphere. Until 1918 practically all domestic heating was confined to the use of United States anthracite.

What happened to change this? First a shortage occurred, due to a strike of anthracite miners. This was followed by a lowering of quality, a price boost considerably above its value, and a suggestion from the United States that Canada was not entitled to all the anthracite she desired because she had so much coal of her own.

It required all of these adverse conditions to convince the Alberta coal producers at the time that there was a market for their coals in Winnipeg, and this was realized by them so suddenly that they immediately began to ship coals of all descriptions, regardless of the particular use of each coal or of its adaptability to the market. At the end of the season it was found that the phophesied disasters, from the use of Alberta coal, had not materialized.

However, new difficulties arose. Many citizens were satisfied that they did not want to be bothered with Alberta coals. The reasons given were: They were too dirty to put in the house; there was too much trouble in firing; the coals were too sooty and smoky; some coals burned too quickly and the fire went out, others burned too slow and gave no heat; some coals clinkered too much, others made too much dusty ash; a particular furnace was not suitable, other furnaces were too large or too small. Some of these objections were excuses, others were valid reasons from the standpoint of the consumer. Much of the trouble arose from the opinion that the use of Alberta coal was only a temporary measure. Also, the old coal dealers had established connections with producers in the United States and it meant loss of business to introduce Alberta coals when they stood no better chance of selling these coals than had a new coal dealer.

Opposed to the viewpoint of the majority was a minority of citizens who had had satisfactory experience in using Alberta coals in the ordinary furnace equipment, and as a result were prepared to continue its use. From these conflicting experiences there arose the realization that there was a permanent market for Alberta coals *if* the public could be educated in their proper use—to buy for service instead of at a price.

### WAY OF SUBSTITUTER IS HARD

IN VARIOUS parts of the United States efforts are now being made to substitute something for anthracite in the esteem—and coal bins—of householders. The effort is not new. In Manitoba and Alberta the campaign to substitute Canadian coal for Pennsylvania hard coal and for some other kinds of American coal has been going on for five years. The obstacles which must be overcome by the substituters are many. Mr. Pratt in this article describes some of them. After all, it is a tough job to wean the people of a whole geographical division away from *any* fuel to which they have become accustomed.

During the following season some new friends of Alberta coals were made, and some were lost. The losses were mostly due to the lack of standardizing the fuels, and also to the fact that *all* coals were offered as Alberta coals. Considering the wide range of varieties offered, few customers could guess right every time in their selection. That season, one of the larger Winnipeg dealers maintained a demonstration showing how the different fuels should be burned in various equipments and by that means made hundreds of friends for Alberta coal. The results obtained by this firm convinced the Alberta government that the education of the consumer was essential for the building of a permanent market.

The first effort was the establishment of practical demonstrations to instruct the coal user how to get the best service from the fuel. This was accomplished by setting up several domestic furnaces and operating them in the office in Winnipeg. It was discovered that most of the visitors to our demonstrations were friendly to Alberta coal, and it was the others, who did not come, that we had to get in touch with.

To reach these people newspaper advertising was started, and we published stories of general interest about coal, under the title of "Coal Truths." We had depended upon holding these new customers, until they had become used to the coal, by appealing to their patriotism and by enlarging upon the national profit in using only Canadian coals. In this we were disappointed and found that it required considerable logic to persuade a person, on sentimental grounds, to use a coal which he considered was costing him more than it should.

This experience convinced us that simply teaching people how to use Alberta coal would not hold a permanent market for it and that our main efforts should be directed toward preaching and proving economy by its use. We, therefore, continued our experiments in order to establish standard instructions for the economical

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This article is from a paper read by Mr. Pratt at the annual western meeting of the Canadian Institute of Mining and Metallurgy, Winnipeg, Man., Nov. 4, 1925.

burning of Alberta coal, and these instructions were published in book form in 1923.

While these methods have met with some success there is a feeling that it is the duty of the Dominion Government to adopt means whereby the sale of Canadian coal may be increased, and that measures to this end should be incorporated in a national policy of solving Canada's fuel problem.

Unfortunately, intensive competition from mines, importers, wholesalers and retailers had developed a condition that resulted in the establishment of over 200 registered coal dealers in the city of Winnipeg. Profitable business for Alberta coal was therefore difficult because a large percentage of coal was distributed by men who were not competent to give the necessary information about burning the fuel—so essential for retaining a market.

### Originally Sold as Soft Coal

All Alberta coals, when first entering the Winnipeg market, were sold as Alberta soft coal. Because of the confusion that this made the steam-coal mines sold coal under names that each had established for its particular product and domestic coals were again sub-divided and each coal was named after the district in which it was produced (there are now 35 districts in Alberta producing domestic coals).

It was quickly apparent that the grouping of several different coals under one district name was not satisfactory from the market point of view. Mines that had developed to the point of producing a good quality of fuel, by using proper equipment and skill in mining and preparation, were in competition with other mines, in the same district, that possessed little or no equipment and which were operated with little regard for the quality of the coal produced.

The best class of coal producer set the price according to his cost of production; the other man took advantage of this price when the market was in favor of the seller, but undercut the price when it was a buyer's market. As far as the buyer knew, or was concerned, both men were selling the same kind of coal. The variability in standards and price increased the difficulty of establishing a reliable market because the consumer could not be quaranteed value for his money at all times, nor had he means of protecting himself.

### Extend Mines Responsibility

While it may be desirable, from a market point of view, to limit the varieties of coal entering Winnipeg to the best in quality, according to price, it was not possible to do so without restraint of free trading. Therefore, it was decided that the next best thing to do would be to make the mine extend its responsibility, to value received by the consumer, and to establish trade marks by which its coal could be recognized.

This proposal was made to the Alberta government, and to the coal producers in Alberta, and resulted in the compulsory registration of every mine in Alberta and the adoption of trade names, under which all coal was required to be sold. A law to this effect was passed by the Alberta government during 1923 to operate for one year, but has since been made permanent.

The city of Winnipeg finally passed a by-law which defined a coal dealer and required coal delivery tickets to show the grade name of the mine and the district in which it was situated. This had the effect of establishing some evidence as to the kind of coal delivered, but as much coal is purchased from perusal of newspaper advertising, and irresponsible dealers continued to advertise "best coal" using district names and other generalities, it did not have the entire effect desired. The by-law was subsequently changed to include the advertising of trade names, but as it was not enforced, the disadvantage continued.

Included in the Winnipeg by-law was a provision which required the dealer to state the minimum calorific value of each coal he proposed to sell, and if any of his coals were below this minimum he was liable to prosecution. In theory this seemed a very desirable feature, but it actually worked to the disadvantage of all; the consumer, the regular dealer, and the coal producer.

As there are no official standards set for the calorific value of various coals it was left to each dealer to establish a value—which he had to live up to. The regular dealer set the value according to his experience with the coal which he had been handling, usually on coals fairly well established and of high quality. The irresponsible dealer set his calorific value sufficiently low so that it would permit him to sell the lowest grade of coal obtainable. It also permitted substitution.

On making representation to the Winnipeg authorities I was assured that the city would accept analyses made by the Alberta government. There being no suitable standards available a temporary list of coals was made and instructions were given to a testing laboratory to take 250 samples of coals, as received in Winnipeg, and to establish the desired standards. However, instead of improving the situation new problems arose which caused me to withdraw the temporary list of analyses.

### Prosecuted Several Dealers

Several dealers were prosecuted by the license department on the complaint that their coals did not meet the calorific standard that had been set. Two of these had an independent chemist to take samples of the loads. These samples showed the coal to be well above the established standards. The court dismissed the case.

The method of sampling adopted by the license inspector was the result of visual inspection. If he considered the coal to be below the standard he selected a small sample which he handed in for analysis. Those who understand the rudiments of sampling will appreciate that a person making a selection in such manner can pick just whatever he desires for the purpose in mind.

As it was made evident that the calorific value was all that the inspector looked for we withdrew our analyses. We had assumed that the calorific value would be used in conjunction with other characteristics in making a determination of quality.

The by-law is now under review with a view to its reconstruction so that it may operate as was originally intended.

In developing the market much advertising has been done, most of which has been of an educational nature; but if advertising has any value in obtaining markets for a product it also assists your competitor in taking your business away. Winnipeg is probably the most competitive coal market on the continent and it is essential that the Alberta producers should feel responsible for the economical handling of their coals if they wish to retain their hold on the domestic trade there.

# News Of the Industry

## Proposals for Emergency Rates Threaten Free-for-All Scramble For Eastern Domestic Coal Trade

Coal producing interests of West Virginia, eastern Kentucky, Maryland and Virginia clamored before the Interstate Commerce Commission last week for more favorable rate bases and routes into New England and the Middle Atlantic states. The low-volatile fields of the first named state, given an all-rail basis on lump, egg and nut sizes under the order of the Commission, suggested to Commissioner Campbell and Examiner Koch, before whom hearings were held in the rooms of the Merchants' Association, New York City, Nov. 12-14, that the rates should be extended to mine-run and slack during the present emergency and that other routes should be opened up if the bituminous fields were to take up the deficit in domestic supplies created by the anthracite strike.

At the tag-end of the sessions the Pittsburgh No. 8 field of Ohio came forward with an offer to shoulder some of the burdens of the East if the Commission would establish emergency rates from the mines in that district. The Virginia anthracite interests, who also desire to participate in this business, found the waiting for a chance to be heard too tiresome; when called upon to present their case, it was discovered that their spokesman had departed.

### Pennsylvania Makes Protest

Central and western Pennsylvania registered vigorous dissent to the proposals of West Virginia. Pennsylvania witnesses questioned the existence of the emergency pictured by the Commission and other witnesses. If the picture be true, they argued, authorization of long-haul movements would result in dilution of transportation facilities which would defeat the purpose for which new rates and routes were established. In this position they were strongly supported by counsel for the Pennsylvania and the Baltimore & Ohio railroads. Southern originating lines expressed a readiness to co-operate in any emergency measure adopted, although the Virginian thought that the recent decision requiring joint rates from the Winding Gulf field to the West was sufficient drain upon its equipment. The railroads will be given an opportunity to present their side of the case when the hearings are resumed at Washington, D. C., this morning.

For a time the New York hearings threatened to develop into a free-for-all scramble for a chance "to save New England" from freezing. Some of the enthusiasm went out, however, when Commissioner Johnston B. Campbell, after listening to railroad protests and conferring with his associates, announced:

"This hearing was brought about primarily to consider temporary rates and routes. Of course, the question of permanent rates and routes is before us, but I think I am safe in saying that we will confine our orders as the result of these particular hearings to the establishment of temporary rates and routes. Then, of course, the case can be kept open" for more leisurely consideration of future rates. The Commissioner intimated that the rates to be ordered following the New York and Washington hearings would carry a definite time limit.

Witnesses for the New England Governors' Fuel Committee and the industrial interests of the Northeast made the opening pleas for the establishment of rates on all sizes of low-volatile coal and for movement via all recognized gateways. The basis fixed in the Commission's order to destinations on lines other than the New Haven was criticized. Although it developed that the chairman and vice-chairman of the New England committee—John Hays Hammond and Eugene Hultman—were opposed to all-rail rates on mine-run as uneconomic, the committee's representative at the hearing favored their permanent establishment and also wanted the high-volatile fields opened up to his section of the country.

### New York Wants Same Advantages

New York's position, as outlined by the chairman of the state coal commission, was simply that the Empire State wanted to enjoy the same rate advantages that the Interstate Commerce Commission saw fit to extend to other parts of the East. Contrary to the hostility toward anthracite voiced by some of the New England witnesses, New York had no desire for a permanent divorce from hard coal. The state had launched a campaign to teach consumers how to burn soft coal solely as an emergency measure. Newark, N. J., asserted that over 1,100 families

### *Take Your Choice*

Testifying before Interstate Commerce Commissioner Campbell at New York last week, Thomas F. Farrell, vice-president of the Pocahontas Fuel Co., estimated that the anthracite strike was creating a shortage of 12,500,000 tons per month which the bituminous industry must meet in the near future. Domestic anthracite consumption during the six months of the heavy coal-burning season averages 10,000,000 tons per month, or 60,000,000 tons, against which were supplies of 30,000,000 tons. Consumption of steam sizes approximates 2,500,000 tons monthly.

By the middle of next month, therefore, the stocks of anthracite will be exhausted, forcing the consumer back upon other fuels at the rate of 10,000,000 tons of domestic coal and 2,500,000 tons of steam coal each month. To meet this situation will require the best efforts of the bituminous industry and the railroads via all routes and roads.

The bituminous industry, retorted Charles O'Neill, secretary of the Central Pennsylvania Coal Producers Association, is overmanned to the extent of 200,000 workers. Its capacity is 200,000,000 to 400,000,000 tons annually in excess of normal demands. Hundreds of mines are now idle. Central Pennsylvania alone can ship 1,250,000 tons of prepared coal monthly. How then, he asked, can it be said that the suspension of anthracite mining with an annual output of 90,000,000 tons, creates an emergency?

The only danger in the situation, as Mr. O'Neill sees it, is that the commission, by opening up all-rail routes from the more distant fields, will encourage such a wasteful use of transportation facilities in uneconomic criss-crossing and long hauls that a tremendous car shortage will develop. In other words, to establish the rates suggested in the Commission's orders will tend to create the very emergency the Commission is seeking to avoid.

## Pittsburgh Coal Co. Resumes At Mansfield Mine

The Pittsburgh Coal Co. has opened the fifth 1917 scale mine in the Pittsburgh district. Just a few days after Montour No. 10 was started, Nov. 9, at Library, Pa., the company got the Mansfield mine, in Scott Township, near Carnegie, which is only a few miles from Pittsburgh, started on the 1917 wage scale.

The Mansfield mine ships over the Pennsylvania, but the first coal from the mine will be supplied to the town of Carnegie for domestic purposes, the Mansfield grade being the best domestic coal produced in the Pittsburgh district.

It is expected to bring the total force at Mansfield mine to 350 men, and to bring the daily production up to about 1,400 tons daily.

Eight deputy sheriffs were posted at the mine, but no disorder was expected as there has been no trouble at any of the other four mines started by the company at the lower wage scale. Lance Linsley is superintendent. Harry M. White, division manager at Midland mine, is in charge also at Mansfield.

### *Report of Coal Stocks Ready by Christmas*

Plans for a survey of coal stocks by the U. S. Bureau of Mines, as announced in *Coal Age* last week, have been changed, and a survey as of Nov. 1 will be taken. The machinery is already in motion and the data will be available, according to general speculation, shortly before Christmas.

Mansfield mine was one of the last pits of the company to be closed down because of the depression resulting from inability to compete with Southern fields. It was shut down April 30, 1925.

The total number of employees in the five mines of the company in the Pittsburgh district is now 905.

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Westbound shipments of bituminous coal through the "Soo" canals in October, 1925, totaled 1,873,482 net tons. No cargoes of hard coal passed through during the month.

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in that city were unable to buy anthracite because supplies were exhausted and asked the co-operation of the bituminous industry in meeting the situation. The chairman of the fuel committee of the National Association of Purchasing Agents cautioned the Commission against ignoring the requirements of the rest of the country in its zeal to provide for the necessities of New England and the Middle Atlantic states.

Apparently mindful of the refusal of the Commission in its original decision to establish joint rates from the splint fields because "we have no requests by the public authorities or by the representatives of consumers in support thereof," Kanawha and related fields marshalled their battalions to meet this objection. Retail and wholesale agents told how they had demonstrated its virtues and sold splint coal in Framingham, Worcester, Holyoke, Northampton, Brockton, Providence, Fall River, Boston, Gloucester, Albany, Schenectady and Watervliet. Trial orders, they said, had led to repeat orders.

#### High-Volatile Has Innings

Exhibits were introduced to show that 73.5 per cent of the mine capacity of the Kanawha district—which has shipped approximately 400 cars to the Northeast in the past 60 days—has screening facilities and could furnish 25,000, to 50,000 tons to New England every month without robbing other sections. Logan, with the close of navigation, could offer 175,000 tons of prepared coal monthly; the Kenova-Thacker field, 60,000 to 75,000 tons. The northeastern and Big Sandy fields in Kentucky also wanted to share in the business.

Whether rates on mine-run would help to keep down prices on prepared sizes was a bone of contention, but every district pled for the same advantages that might be accorded others. As a rate basis eastbound, traffic experts suggested the differential adjustment over New River rates from the Kanawha field to Washington and tidewater, with possibly diminishing differentials as distance increased.

Operators in the Clinch Valley division of the Norfolk & Western attacked the failure of the carriers to include their mines in the rates effective Oct. 15. It was admitted that this disruption of a long established rate relationship was long contemplated by the Commission's order and it was indicated that an adjustment would be made. Similar assurances were forthcoming from the N. & W. following the recital of the complaints of Baltimore retailers on the Western Maryland that the new rates had not been published via their line, leaving their rates 75c. a ton higher than those applicable via Baltimore & Ohio and Pennsylvania R.R. deliveries. Another maladjustment of the same character, it was testified, exists at Philadelphia on Philadelphia & Reading deliveries.

Aside from the Baltimore testimony and that offered on behalf of the splint producers, the retail trade was without representation at the hearing. But the retail distributors were assailed a number of times by different witnesses. Every time complaint was made of high prices to the consumer, producers insisted that the responsibility was not theirs. The spokesman for the New England Governors' Fuel Committee declared that if proper co-operation was not forthcoming from the retailers, industries would purchase mine-run, screen out the lump and sell the large coal direct to their employees. Another witness intimated that the willingness of some retailers to handle high-volatile coal was due to their hope that the householders would be so troubled with smoke that they would flock back to anthracite when the strike was over.

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## Engineers Hold Meeting in Anthracite Region; Inspect Modern Mining Equipment

Mining, mechanical and electrical engineers of the whole anthracite field attended the meeting of the Lehigh Valley Section of the American Institute of Electrical Engineers held at Pottsville, Pa., Nov. 13. Papers were read by men representing mining, public utility and manufacturing companies.

J. H. Pierce, assistant to the president of the Buck Run Coal Co., presented a paper dealing with the question of the use and generation of power. In his paper he stressed the business aspects of engineering work in the mining field and the necessity for lower power costs.

A thorough digest of the "giant power" report dealing with its engineering and financial phases was made by Farley Osgood, past president of the American Institute of Electrical Engineers. In comparing the estimates and plans proposed in the "giant" survey with present-day developments and practices of public utilities, Mr. Osgood showed wide differences and claimed that experiences have shown that power plant costs used in the survey were much too low.

H. D. James, who is in charge of the control department of the Westinghouse Electric & Manufacturing Co., spoke on control equipment. In his address he touched upon the details of the 1,200-hp. electro-pneumatic control equipment recently installed by the Lehigh Coal & Navigation Co. at its Lansford colliery. He also spoke about other new developments of control equipment suitable for meeting the exacting conditions necessitated by automatically operated pumps, hoists, elevators and special motor applications.

#### Inspect "Giant" Breaker

On Nov. 14, the day following the technical session, many of the engineers journeyed to Lansford, where they inspected the new breaker and equipment of the Lehigh Coal & Navigation Co. One of the first places visited by the engineers was the main hoist house where they saw a large magnetic hoist control panel and the electro-pneumatic control apparatus.

After viewing the hoisting, compressor and power distribution systems the engineers were conducted through the breaker. Here they saw the layout of a structure designed to handle 10,000 tons of product per day.

As the coal goes through the breaker it is sized, cleaned and prepared by equipment completely driven by electric motors. Many novel features in the design of the breaker to prevent rapid deterioration and degradation were thoroughly inspected. Much interest was shown in the methods by which coal is prepared because the product of the mines in this region is much different from that in the northern anthracite field. However, much valuable information was gathered by most of the engineers because the breaker structure is modern in every detail and points the way toward future progress.

## Union Gains Little Ground In Upper West Virginia; Outlaw Strike Is Stopped

Non-union coal production in the twelve and one-half counties in northern West Virginia, which are breaking from the union's control, continued heavy last week. In the first four days of the week 7,254 cars of coal was produced compared to 6,859 cars in the corresponding period of the week before. The union mines showed a slight increase. In the first four days they produced 1,064 cars compared to 1,027 cars in the first four days of the previous week. As usual, the union charged non-union operators with deliberately falsifying the record of non-union production.

Union tonnage on the Monongahela Ry. continues the heaviest in the region. The union output on Scotts Run is heavier than the open-shop tonnage, which indicates that the last stronghold of the union in northern West Virginia is there. The union tonnage reached 258 cars on Nov. 12, the heaviest daily union tonnage on the Monongahela Ry. since Oct. 29, when a similar number of cars was loaded.

On the average there were 216 non-union mines at work daily in northern West Virginia in the first four days of last week as against 14 union plants.

An illegal strike occurred at mine No. 2 of the Cleveland & Morgantown Coal Co. (the Pursglove interests, of Cleveland, Ohio), one of the largest union mines on Scotts Run Nov. 10, but the men were all back in the pits the next day. The trouble, according to statement credited to Samuel Pursglove, president of the company, was that miners wanted transportation into the plant, which he says never was provided and is contrary to the state laws. From other sources it was reported that the strike resulted from a company effort to have the men push cars uphill in the mine.

### Encourages Miners

As a means of bolstering up a lost cause, Van A. Bittner, chief international representative of the United Mine Workers in northern West Virginia, returned from a week's visit to Washington, D. C., and gave out a statement designed to hold out a ray of hope to the striking union miners.

"After conferring with our representatives in the various fields I may say that the situation in northern West Virginia is becoming more encouraging every day," said Bittner. "Approximately 500 union miners have been put to work in the Scotts Run field during the past week, and with other union operations resuming, about 250 more union miners will be employed in the next few days," he declared.

The large mine of the Consolidation Coal Co., No. 63, at Monongah, ran its first coal Nov. 10, and officials of the company say that more than 100 men are at work at the plant. This is striking into the very heart of the union's stronghold, and generally is regarded as one of the most difficult mines to work on a non-union basis in the region. It is reported that the union miners have leased a lot near the pit mouth and are picketing from there.

© Wide World Photos.

**Rev. John J. Curran**

Father Curran, who is the pastor of St. Mary's Roman Catholic Church, Wilkes-Barre, Pa., is sharing the stage with Governor Pinchot in the effort to bring the anthracite miners and operators together and settle the hard-coal strike. He has discussed the situation recently with the Governor and with President Lewis and Vice-President Murray of the miners' union and when Governor Pinchot conferred last week with Mr. Lewis and Major Inglis, Father Curran said it was "the beginning of the end." He would not explain, however, on what he based his optimistic view.

When 45 union pickets appeared before Judge Winfield Scott Meredith in Marion County Circuit Court in Fairmont Nov. 9, he did not pronounce sentence on them on charges of contempt of court growing out of picketing at the Monongah entrance to New England mine of the company at Watson but deferred action for 30 days.

Announcement has been made that the Consolidation Coal Co. has selected John S. Forinash, of Grafton, to act as its commissioner in settling disputes between the coal company and the employees now working non-union. Forinash formerly was president of Sub-district No. 3, District No. 17, United Mine Workers, but was dropped from the miners' force when the international union took over the autonomy of District No. 17.

The tipple at Whiteman mine of the Clarksburg Big Vein Coal Co., three miles west of Clarksburg, was burned down on the night of Nov. 11, causing a loss of several thousand dollars.

## Kansas Also Rock Dusts

Five mines in the Kansas field now are rock dusting, Ernest Shaw, deputy state mine inspector, announced Nov. 11. Mr. Shaw for three years has been endeavoring to persuade operators in the Kansas field to use rock dust. Those mines which now are employing it are Hamilton Coal & Mercantile Co. No. 9, Wilbert & Schreeb, Krueger Coal Co., Mackie J. and Clemens Coal Co. No. 17. Four of the five mines are dusting by hand. In the Hamilton mine, however, an electrically operated duster devised by Mr. Shaw and W. R. Hamilton and L. D. Kelley of the Hamilton company is being used with satisfactory results.

## Pittsburgh Terminal Gets Big Output at Union Wages

In October the Pittsburgh Terminal Coal Corporation had the largest output in its history for a one-month period, producing 405,273 tons from seven mines, three of which are old and full of pillar-pulling operations. The average daily output during the 26 working days (including Columbus Day) was 15,000 tons. Four of its largest mines produced 332,402 tons in the month.

The peak output for one day from the seven mines during the period was 15,800 tons, showing that the record was achieved by a consistently uniform daily output from all the mines. Although its mines are in western Pennsylvania, in the Pittsburgh seam, and are operating under the Jacksonville agreement, the company has been producing consistently for some time, chiefly by reason of the many economies it has been practicing through modernization.

## Kentucky Mine Owners Favor Rescue Autos; Rash Resigns

Members of the Kentucky Mine Owners Association, meeting in Louisville, Ky., Nov. 11, discussed movements for the establishment of mine-rescue stations in various sections of the coal fields. A number of operators think large motor trucks should be used in mine rescue work instead of railroad cars. The association believes it is doing some good with its series of advertisements to acquaint the public with the importance of the coal industry and to combat the movement for a tonnage tax. Other matters discussed were welfare work at mines, workmen's compensation laws, educational work, hospital service and matters pertaining to operation of mine camps. Action was postponed until spring on the resignation of President Frank D. Rash, who wants to quit because he is no longer an active coal man.

## West Virginia Mining Institute Announces Full Program

The program of the West Virginia Mining Institute for its semi-annual meeting, in Morgantown, W. Va., Nov. 24 and 25, follows: "Recent Developments in Shooting Coal," by J. E. Tiffany, explosives engineer, U. S. Bureau of Mines, Pittsburgh, Pa.; "Smokeless Coals of West Virginia," by David B. Reger, of the West Virginia Geological Survey; "Preparation of Commercial Coals," by Thomas Fraser, assistant professor, mining engineering department of West Virginia University; "General Use of Gunite in Coal Mining," by B. C. Collier, president, Cement Gun Co., Allentown, Pa.; "Some Observations of New Methods of Mining," by J. J. Rutledge, chief engineer, Bureau of Mines, Baltimore, Md.; "Flameproof Motor as a Safety Measure," by Frank Haas, consulting engineer, Consolidation Coal Co., Fairmont, W. Va. An inspection trip will be made to the Nemacolin mine of the Buckeye Coal Co., at Nemacolin, Pa.

# Printing of Coal Commission Report Assures Action by Congress; Coolidge To Keep Hands Off Anthracite Strike

**By Paul Wooton**
Washington Correspondent of *Coal Age*

Buried alive, like a Hindoo fakir, in a state of suspended animation, the report of the Harding Coal Commission has arisen and will walk into Congress at the very moment it is most likely to receive consideration.

The importance of the document to the industry lies almost wholly in the political situation which happens to exist as it emerges from the Government Printing Office. It seems likely that the anthracite strike will last long enough to cause widespread inconvenience. Every day that passes makes it more certain that:

(1) Coal will come in for a great deal of popular discussion this winter;

(2) The administration will not intervene in the strike;

(3) Regulatory legislation will be considered by Congress.

Had the Coal Commission's report been printed before it would have been overlooked and forgotten. Those volumes that had escaped the waste basket would have been festooned with cobwebs alongside that imposing array of major prophets "First Frelinghuysen," "Second Frelinghuysen," "Third Frelinghuysen," "First Calder," "Second Calder," "First LaFollette," "Second LaFollette" and "Third LaFollette," to say nothing of works of the minor prophets and epistle writers in the House of Representatives.

As authors, Mr. Hammond and the other members of his commission are in luck. The delay in its printing has insured it an amount of attention infinitely greater than would have been the case had it been issued in final form at the time it was completed.

### Can Sidestep Blame

The issuance of the report at this time also is fortunate for the administration as it furnishes an additional reason for referring to Congress those who are clamoring for relief. The administration is in an enviable position in that it can point to the Commission's recommendations without coming in for blame for those that are distasteful. Mr. Coolidge is not the father of the Commission. He acts more like its bachelor uncle. He is holding the baby gingerly and uncomfortably on his knee. He will be more than glad to hand it over to Congress without venturing an opinion as to whether it is a girl or a boy and certainly without offering to adopt it.

Then, too, it must be admitted that the report clothed in the decency of print will command more respect than it did when it appeared in the shoddy of mimeograph. As it emerges from the federal print shop it is composed of four volumes of text and an appendix of statistical tables and charts. It is annotated and thoroughly indexed.

The report presents a finished appearance and is certain to create the impression in Congress that the Commission took its task very seriously and sought the facts patiently, accurately and exhaustively. The very ponderousness of the volumes is an argument against any further investigation before action by Congress. When coal comes before Congress for discussion those who seek to avert legislation will employ the usual tactics and demand that the question be given more study. Those who favor legislation now will be in a position to say: "If this Commission, composed of distinguished men, backed by a great array of expert talent, with ample funds and a year's time could not get the facts, who could get them?"

The Commission's recommendations for legislation also are being printed separately and will be available for much wider distribution than the report itself. These recommendations form a separate pamphlet of twenty-three pages.

### Would Counteract Sentiment

Since many thousands of that pamphlet will be circulated there is a feeling among those who oppose any legislation that something definite and positive should done to counteract the sentiment which the document is likely to arouse. They admit that the recommendations for legislation possess a certain simplicity and plausibility and outline a public policy that is certain to appeal to the public. They feel that it is not enough for the industry just to wave aside the whole Commission program as dangerous doctrine. The feeling is that the industry must throw off its purely negative attitude and must be specific as to the errors it finds in the report and to what it objects. There is a decided conviction on the part of some within the industry that those in the business should work out a program of their own to meet definitely the criticism of the Commission and the demand of the public for the facts.

The recommendation of the Commission for fact finding and a uniform system of accounting already has many supporters. Outside the coal trade itself the recommendation that the reports be compulsory, as are those of the railroads, will not frighten. The Commission recommends that the Interstate Commerce Commission act as federal fuel distributor in periods of shortage, with such powers, in addition to those of the Transportation Act, as may be necessary. This will appeal to a considerable portion of the public as the least that should be done in emergencies. There will be some public support even for the proposal to license companies engaged in interstate commerce.

In one respect at least there is no reason to believe that Congress is ready to go further than the Commission. The Commission did not recommend compulsory arbitration of trade disputes. Instead it would authorize the President to make a compulsory investigation when the two parties are unable to agree on the renewal of a wage agreement. There can be no doubting that there is a group in Congress ready to advocate a compulsory tribunal on the ground that coal is affected with public interest.

## *Coal Mines Pay Heavily to Compensation Fund*

An actuarial survey of the present reserve of the workmen's compensation fund of West Virginia having been authorized by the Legislature, Governor Gore has appointed Emil E. Watson, of Columbus, Ohio, to perform the work. Ten thousand dollars was appropriated for the survey, but Mr. Watson has contracted to do the work for $3,500. According to Walter H. Cunningham, secretary of the West Virginia Coal Association, total premium receipts of the commission for the fiscal year ending June 30, 1924, were $3,469,000, of which the coal industry paid $2,386,000. Premiums were paid into the fund on a total payroll of $305,000,000, of which $162,000,000 represented coal companies.

"While the number of fatal accidents is larger in the coal industry than in any other in the state, due largely to the magnitude of coal operations," says Mr. Cunningham, "the 1924 report shows that of 29,000 non-fatal accidents, only 12,000 occurred in the coal industry, against 17,000 in other industries."

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## Americans Acquire Control Of German Mines

W. A. Harriman & Co., of New York City, and the Anaconda Copper Mining Co., of Montana, have jointly taken over the German-Polish holdings of the Georg von Giesche Heirs, Inc., a firm that is said to have been in financial straits. The holdings include zinc mines, smelters and coal mines. The importance of the coal mines to this industry was such that in 1815, owing to the low price of zinc and the high price of coal, the zinc works were moved from Scharley to Georgschütte so as to be near the coal mines at Michalkowitz. These latter mines the new interests will direct though not own.

Soon after the passing of control to the Harriman company took place it was announced that steps were being taken to test the legality of the contract. The Prussian State Attorney General has dug up for this purpose an old law whereby an attempt will be made to show that the arrangement with the Americans is detrimental to the welfare of the people and the nation and therefore illegal. At the same time the Prussian State Mining Corporation has taken measures to enforce its contract, which it asserts was concluded with the Giesche firm before negotiations with the Americans were concluded.

## Moshannon Mine Men Devote Sessions to Troublous Questions

A broad field of interest was covered by the questions and discussions at the Moshannon Coal Mining Institute's fifth annual meeting, Nov. 14, at Philipsburg, Pa., eighty-five persons being present. At the afternoon session Thomas Mather presided.

The advantages and hazards of mechanical loaders and conveyors were discussed. Joseph Knapper recalled that when mechanical undercutters were introduced the same fears were entertained as are expressed today with regard to machinery for loading. He thought and trusted that the present apprehensions, where entertained, would prove unjustified. It was suggested that the loading of coal into unbroken trips instead of into separate cars would do much to prevent accidents both from coupling and from runaways. Locomotives also would not be running all over the mine. Another speaker showed that where machine loading had been introduced the accident rate had been lowered, but questioned what could be judged from that fact as in every case cited the roof conditions were favorable.

Discussing whether it is "advisable to conduct the intake air the full length of the split or to have it enter the split at several different points" it was said that, suppose sixty men were working in a split consisting of three gassy entries, the air supply would have to be 12,000 cu.ft. per min. Would it be better to put 4,000 cu.ft. into the first entry, containing only twenty men; 8,000 in the second, containing another twenty, and 12,000 in the third, in which twenty others worked?

### Regulators Prevent Power Saving

Mr. Knapper said it would be necessary to use regulators in the first and second entries to get this distribution, and consequently there would be no power saving and at the same time the current of air in the first entry would be insufficient probably to sweep out the noxious gases.

Someone wanted to know why if enough air was available for three splits and the air thus split would sweep out the noxious gases, three wholly separate splits were not used and power saved, but apparently the idea was to keep the overcosts down to the lowest possible number. It was pointed out that if the first entry gave out too much gas for 4,000 cu.ft. of air to dilute, it might be possible to go on working if 12,000 cu.ft. were carried through all three entries, provided the other two entries gave little gas. The chances were that by passing the 12,000 cu.ft. through all three entries the air would be less likely at any time to be overcharged with gas than it would be if lesser quantities of air were taken through two out of three entries.

Another question was, "What effect does a heavy short-circuit on a direct-current line have on the alternating-current demand meter? None at all, said the electrical engineer of Hale Coal Co., provided a circuit breaker operates to close the circuit. He admitted that a heavy ground—that is, a short that would not throw out the circuit breaker—might have a marked effect on the demand meter, provided it continued for sufficient time—say 15 minutes—which is apparently the time on which the demand rate is fixed in the Moshannon region.

Discussing the effect of different kinds of explosives on the quality of coal, a powder manufacturer's representative declared that the time was past when the powder salesmen would contend that as much large coal could be obtained by the use of permissibles as by the use of black blasting powder. However, the size could be improved in the use of both if care were taken. It was suggested that men leaving mines where black blasting powder was in use should be carefully instructed when entering mines where permissibles were used. In this way this work might be made more effective. F. T. Powers, state inspector at Frostburg, Md., said that experiments made by himself and Dr. J. J. Rutledge, the chief engineer of the State of Maryland, with pasteboard tubes as a means of air spacing between the permissible and the tamping had proved quite successful, increasing the percentage of lump and decreasing the need for using as much explosive. Fortunately the Maryland laws did not require tamping clear from the explosive to the mouth of the hole, and air spacing was being used of length graduated to the length of the drilling. No shots thus tamped had blown out. Several companies were using air spacing and getting larger coal as a result.

At the dinner the speakers were Dean E. A. Holbrook and Wm. R. Chedsey, both of State College; F. T. Powers, C. B. Maxwell and R. D. Hall. C. B. Maxwell presented a watch to Joseph Knapper on behalf of the mining men of the Eighth Bituminous District of Pennsylvania. Mr. Knapper recently resigned as inspector, a position he had held for thirty years. Mr. Hall's address, which was the scheduled talk of the evening, was on mining conditions in Wyoming and Utah.

At an election of officers, Joseph Knapper was elected president and T. B. Gallegher, S. H. Eastman, G. H. Brightman and Andrew Fremburg vice-presidents; Thomas Morgan and William George were re-elected as secretaries.

## *Arkansas Supreme Court Lifts Receivership Against District 21, United Mine Workers*

Chancellor J. V. Bourland, of Fort Smith, Ark., had no right under the laws of Arkansas to appoint a receiver for District No. 21, United Mine Workers, the Arkansas Supreme Court ruled last week in granting a writ of prohibition restraining proceedings under the receivership.

The Supreme Court said that the union organization, being a voluntary unincorporated association, cannot be sued in its society name and that for that reason no proper service was had upon it in the receivership action.

The receivership was granted by Chancellor Bourland on application of the Greenwood Coal Co., the Mammoth Vein Colliery Co., and the Backbone Coal Co. These companies alleged that their properties had been damaged to the extent of $90,000 and that their workmen had been injured by members of the miners' union as a result of the strike. The receivership order named Senator J. F. Brewer, of Fort Smith, as receiver and authorized him to seize funds of the union in various banks, pending decision of the case.

After a motion to set aside the receivership had been overruled by Chancellor Bourland, the union and certain individual members applied to the Supreme Court for a writ of prohibition to restrain proceedings under the receivership.

## *Scranton Uses Soft Coal*

A striking demonstration of the horrors of war was seen in the anthracite region last week when forty-two gondolas of West Virginia bituminous coal were being sold and distributed among the householders of Scranton, Pa., in the heart of the hard-coal region. The spectacle of five retail coal yards in Scranton distributing soft coal brought home to both sides the fact that if they can not hold their local markets they have a slim chance of inducing anthracite users in New York, New Jersey, New England and the Northwest to refrain from the use of substitute fuels.

The dealers who received the soft coal are conducting a vigorous campaign of instruction to housekeepers in its use as an anthracite substitute.

## Delayed Blast Entombs Three Alberta Miners

Three miners were entombed by an explosion which wrecked a new prospect coal shaft at Kirkpatrick, six miles west of Drumheller, Alta., Nov. 13. Rescue crews worked throughout the next day without being able to push through the débris that covered the victims, and hope of rescuing them was abandoned. The three men entombed are Mike Gilday, J. McLane and L. Burke. A delayed powder blast is believed to have caused the explosion.

# Problems In Underground Management

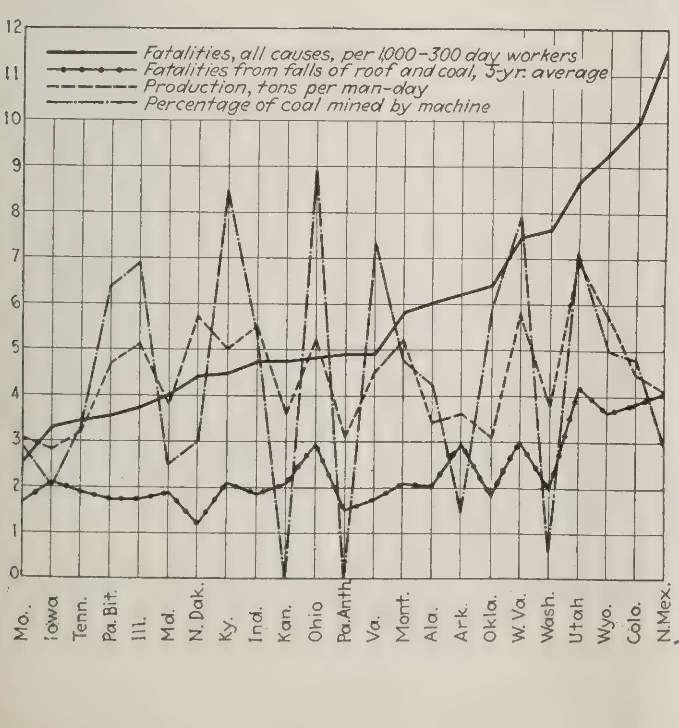
## Large Output per Man Not Accompanied By Fatalities from Falls of Roof

T. T. Read of the United States Bureau of Mines at the meeting of the National Safety Council, Sept. 29, presented a chart indicating that fatalities from falls of roof had no direct relation to high output per man per day, nor to the percentage of coal mined by machine. On the chart was plotted, against the various coal-producing states, the fatalities from falls of roof and coal for a 5-yr. average, the production in tons per man-day, the percentage of coal produced by machine and the fatalities from all causes, the fatalities being based on 1,000 three-hundred-day underground workers, using the figures presented in Bulletin No. 251 of the U. S. Bureau of Mines.

The curves thus obtained seem to bear no relation to each other and indicate that machine mining does not increase fatalities nor does large production. Utah, for instance has a large output per man and a high accident rate from falls of roof, but North Dakota, which has a high output per man, has the lowest accident rate from falls of roof of any of the states.

Mr. Read stated that a study of the chart would convince any one that our high fatality rate in America has no direct relation to the demand for speed in production, and suggested that our high rate per man employed perhaps results from the smaller number of men required to do a job of work in the United States.

Mr. Read declared that even a perfect system of timbering would not entirely remove the danger of accidents from falls of roof and coal for both in England and the United States, when the roof is naturally good the fatalities usually run higher than where the roof is naturally bad, indicating that the confidence arising from a belief that falls would not take place leads to a lack of watchfulness against the possibility of accident.

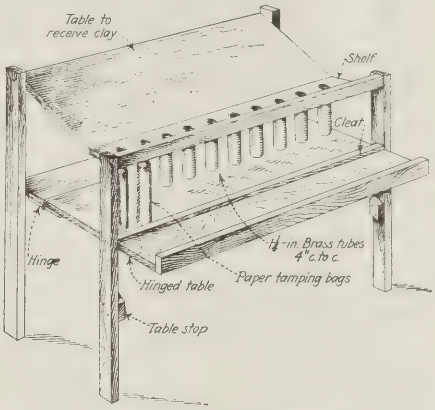


**Big Output Is Not to Blame**

Our large production per man is not the cause of our fatalities as the chart shows, nor is the use of machines. So, apparently, slowing down would not help us. The figures for mining machines should be taken in tens and not in units. Thus Ohio mines about 90 per cent of its coal by machines and Arkansas somewhat less than 10 per cent. Both have high fatality rates from falls.

## Dummies Made Above Ground Provide Clay for Tamping

Complete detonation of an explosive which obtains the best results with a minimum quantity of noxious fumes, it is well known, is facilitated by proper tamping. It is no easy matter, however, to see to it that clay sent under ground for this purpose is properly and habitually used. Many miners are averse to filling tamping bags and charge them with bugdust if this material happens to be handier than the clay provided by the management.



**Dummy-Filling Table**

By aid of this simple home-made device one man is enabled to fill and prepare as many as 4,000 dummies in one shift. The work is neither arduous nor difficult and good tamping material comes to the miner in such handy shape that he gladly uses it in preference to any other material.

A number of mines, accordingly, have adopted the practice of filling tamping bags on the surface and sending them into the mine ready for use in shot holes. Frank R. Wicks, general manager of the Empire Anthracite Coal Co., of Pulaski, Va., has devised a filling apparatus by aid of which as many as 4,000 such bags may be charged and made ready for use in eight hours.

This equipment is simple. It consists of a table inclined at 35 deg. with a horizontal shelf at its lower edge. The table is intended to receive the clay and the shelf is provided with a row of holes 4 in. apart, each fitted with a brass tube 1¼ in. in diameter and 10 in. long, extending well beneath the shelf. Underneath the lower end of the tubes is a hinged drop table.

With the drop table lowered a 1½-in. tamping bag is slipped over the bottom end of each tube. This table is then raised affording support to the bags which slip upward on the tubes. Screened clay is then placed on the inclined table and quickly runs down onto the shelf and into the tubes, the operator meanwhile aiding this process by spreading the clay with a trowel. When all the tubes are full the drop table is again lowered, the bags following it, their ends resting eventually against a cleat on the table. Clay from the tubes of course flows into the bags as they descend. The operator now removes the bags from the tubes, folds over their ends, and packs the dummies, now ready for use, into boxes preparatory to sending them into the mine.—Abstracted from *Explosives Service Bulletin*, October, 1925.

## Salt Allays Coal Dust

By W. H. Hunt
Central City, Ky.

Much has been written recently concerning the use of stone dust as an explosion preventive in mines. The practice of stone dusting is extremely interesting, appears to be efficient and bids fair to be almost universally adopted. While state mine inspector for the second district of Kentucky, however, I experimented with the use of common salt as a means of allaying the combustible dust of a mine, with some decidedly interesting results.

On one of my trips of inspection to a certain big mine I noticed one entry, known as the Tenth North, that was heavier with dust than the remainder of the underground workings. Not only was the dust deep but it was particularly dry, so I believed that this entry would be an excellent place for a trial of salt. Accordingly I ordered the dust removed from all surfaces along this passage. Some 40 carloads of it were loaded out the next day. Examination of room ribs showed that they were covered with coal dust as fine as flour, every crevice being filled with it.

A barrel of salt was brought in and scattered broadcast along the roadways, ribs and all slate and refuse heaps along this entry.

Two days later I inspected the results of this test. At that time the road had the appearance of being greasy from one end to the other. I then selected four of the worst rooms I could find and when the miner loaded his shots the next day I had him tamp into each hole a 6-in. dummy containing salt. When the shots were fired this was projected into the air as a fine powder, and thus mixed intimately with the dust of floor and ribs where with it it soon formed a pasty, greasy-looking mass. This absorbed and did away with the coal dust as such. It simply made a mud of what a few days before had been a highly explosive powder.

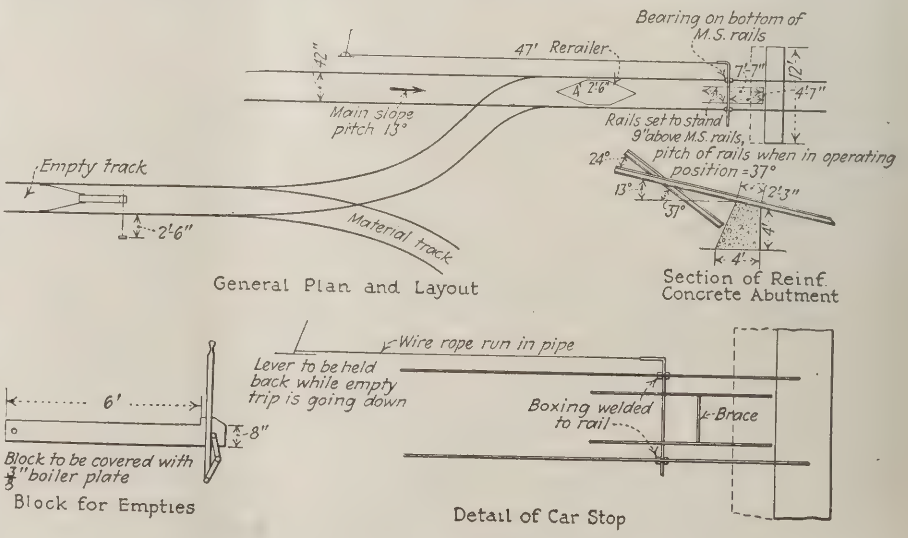
Later salt was used throughout the entire mine and proved highly satisfactory. It constitutes a decidedly economical dust remover. A barrel of it, if properly scattered, is sufficient to treat an average mine and will last indefinitely. It will be found also that it not only does away with dust but acts as a humidifier as well.

## This Stop Effectually Holds Cars on Mine Slope

Where the grade of a mine track is steep and single rope haulage is employed, it is frequently advantageous to provide a dependable stop that can be set to prevent cars from passing but which can be lowered so as to allow cars and trips to pass over it freely when necessary. It is desirable also to locate the device controlling such a stop at some distance from it so that the person operating the lever may be entirely in the clear.

The accompanying illustration shows a stop of this kind installed on the main slope of Mine No. 7, of the Union Pacific Coal Co., at Winton, Wyo. In this mine the main track is on a slope of 13 deg. The stop consists of a pair of heavy rails carried on a shaft that turns in boxings securely welded to the flanges of the track rails. This shaft is provided with a crank at its end so that the rails may be brought into proper position for stopping the downward movement of cars or lowered into the clear as expediency may require. The stop is actuated by a rope or cable that passes up the slope to a lever working in a quadrant. The arrangement is such that the stop rails when in the operative position are backed by a heavy block of concrete, 4 ft. high and 4 ft. wide at the bottom. This device is sufficiently heavy and strong to effectively prevent the cars from passing down the slope yet can be readily brought to the off position if desired.

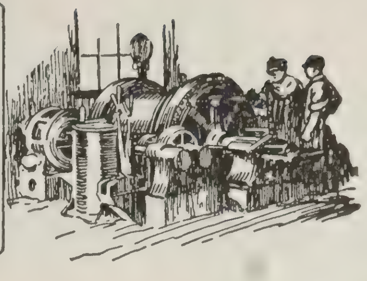
In this drawing also may be seen at the left a device intended for a somewhat similar purpose, yet built on an entirely different principle. This is the stop for empty cars. It is a kind of a trigger or hook, operated or raised by a lever at the side of the track. This carries a lip or hook at its forward end that may be raised to engage the axles of the empty cars. In this position it effectively prevents them from passing down the slope to either the main or material track. A slight movement of the lever, however, by means of the toggle joint links connecting it with the stop, is sufficient to lower the trigger and release the cars. The trigger is securely pinned at its forward end to the rails of the empty track, affording a grip that cannot readily be broken.


Bearing on bottom of M.S. rails
47' Rerailer
42"
Main slope pitch 13°
4' 2'-6"
7'-7"
12'
4'-7"
Rails set to stand 9" above M.S. rails,
pitch of rails when in operating position = 37°
24°
13°
37°
2'-3"
4'
4'
Empty track
2'-6"
Material track
General Plan and Layout
Section of Reinf. Concrete Abutment
Wire rope run in pipe
Lever to be held back while empty trip is going down
6'
8"
Block to be covered with 3/8" boiler plate
Block for Empties
Boxing welded to rail
Brace
Detail of Car Stop

**Details of Stops for Loaded and Empty Cars**

This arrangement, operated by a lever from a distance, is heavy and strong enough to resist the movement of cars or trips yet readily may be brought to the off position allowing trips to pass freely. The empty stop on the left prevents downward movement of the empties, but can be set or released by a movement of its operating lever.

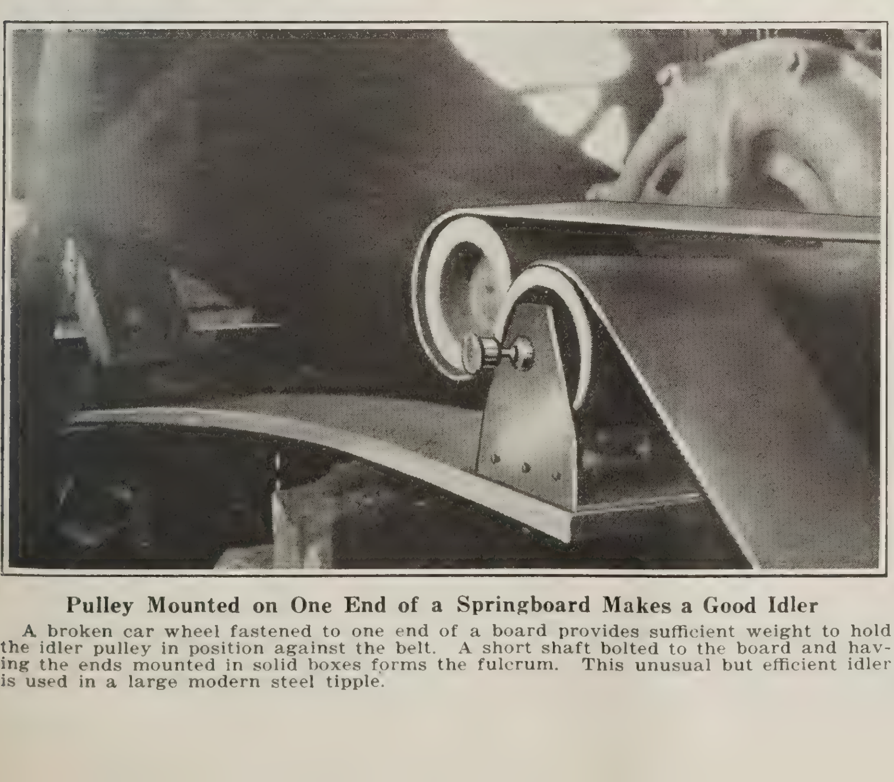
# Practical Pointers For Electrical And Mechanical Men



## Idler for Belt Drive in Indiana Mine Mounted on Springboard

As there are more ways than one to "hang a dog," there are likewise several ways to make an idler. An unusual but satisfactory form of idler is used on a belt drive in the modern steel tipple of the Pike County Coal Corporation, at Petersburg, Ind. This idler consists of an 8-in. pulley mounted on one end of a 1½x12-in. oak board, 8 ft. in length. The board is balanced on a fulcrum about 18 in. from the center of the idler. On the outer end of the board a weight consisting of a broken car wheel holds the pulley against the belt.

This idler is used in connection with a 40-hp., 700-r.p.m. motor which drives the shaker screens. The motor pulley is 9 in. in diameter, the shaker pulley 60 in. in diameter and the belt center distance is only 8 ft. The idler pulley is lubricated by a compression grease cup mounted on the end of the hollow shaft. The fulcrum under the board is arranged so there is no possibility of slippage. A short piece of round shafting bolted to the board forms the fulcrum and the ends of the shaft are mounted in plain solid boxes. The self-adjusting feature of the idler automatically takes care of ordinary belt stretch, and the method of lubrication is such that little attention is required.



**Pulley Mounted on One End of a Springboard Makes a Good Idler**

A broken car wheel fastened to one end of a board provides sufficient weight to hold the idler pulley in position against the belt. A short shaft bolted to the board and having the ends mounted in solid boxes forms the fulcrum. This unusual but efficient idler is used in a large modern steel tipple.

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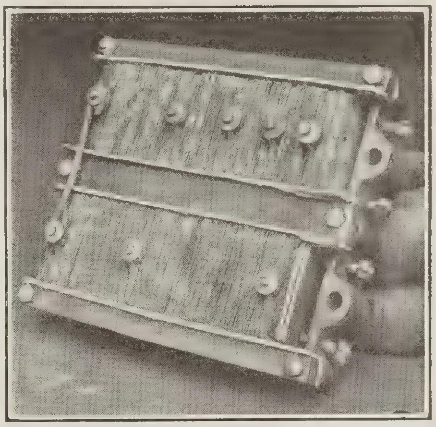
## Cap Screws Hold Resistor Plates Tightly

There are in use a great many mining machines which use a rheostat of the type shown in the illustration. This type is made up of a number of resistance plates separated by mica insulation and mounted in a cast-iron box having one open side. When repairing these rheostats it is not an easy matter, without special tools, to pack the plates tightly. This difficulty is overcome at the Fordson mines at Stone, Ky., by adding the four cap screws which can be seen at the right on the rheostat frame.

Hexagonal-head, ⅜-in. x 1½-in. cap screws are used. These act against heavy plates inserted at the ends of the stacks. By this method there is no difficulty in getting the required number of plates in the box, and the assembly is held snugly in position.



**No Trouble to Get All of Them In**

This photograph shows how compression screws are added to mining machine rheostats repaired in the shop of the Fordson Coal Co., at Stone, Ky. Holding the resistance plates snugly prevents trouble.

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## Repair Made to Breaker Carrying Current

It is not the usual practice to work on oil circuit breakers when the power is on them but occasionally some repairs not affecting the current-carrying parts can be thus made.

Recently I had a job which necessitated such a repair and hit upon a scheme which worked out quite successfully. The breaker in question had a burned-out overload relay coil and in order to remove it the back of the operating lever had to be dismantled.

To disconnect this lever and at the same time hold the contacts of the switch together, a block of wood in the shape of a wedge was placed under the crossbar upon which the contacts are mounted. When this was done, the switch was locked in the closed position and the operating handle was dismounted. In this manner the relay coil was replaced with a new one and the operating handle again put in position.

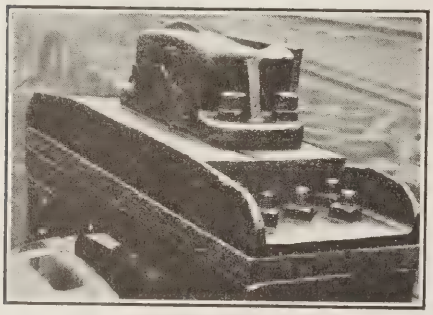
Grady Emerson.

## Draw Pockets Saved by Wood Fillers

An item which caused the mechanics of the Island Creek Coal Co., of Holden, W. Va., considerable trouble was the breakage of draw pockets of mine locomotives. It seemed almost impossible to keep the bolts tight. If those on one side loosened slightly while those on the other remained tight, any stress imposed would break off the corners on the tight side of the draw pocket.

This breakage was overcome by mounting the draw pocket on a 3x12x23-in. oak filler block. The wood is sufficiently soft that it crushes if the bolts get loose on one side and the draw pocket is tilted from its normal position. This cushion effect under the tight side saves the lugs from breaking.

No draw pockets are changed at the mines. Instead, a complete bumper is sent out from the shop to replace an old one. The fastenings are made by means of twelve rivets. It has been found that the mine electricians can be relied upon with more certainty to do a good job of riveting, than of assembling the bolted parts of a bumper.

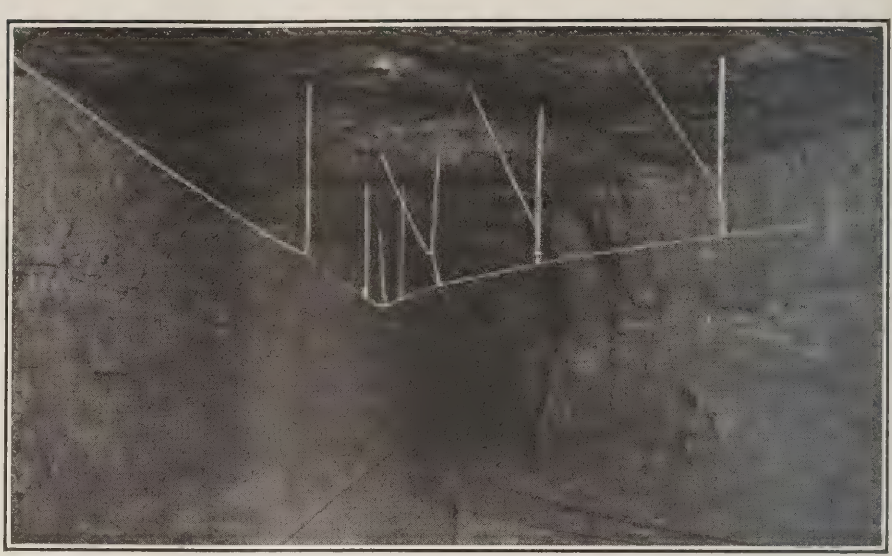

**Draw Pocket With Cushion Block Does Not Break**

By using a wood filler under the draw pocket the corners are saved from breaking if the bolts work loose. No draw pockets are changed at the mines, instead, complete bumpers are applied.

## Braces Hold Hangers in Position on Curves

An example of good trolley construction on a high roof in a wide place is shown in the accompanying photograph of a junction point of the main haulways in the Balkan mine of the Southern Mining Co. This mine, located at Balkan, Ky., is in the TeJay seam and the average thickness of the coal is about 53 in. At the point shown, which is not far from the drift mouth, about 6 ft. of bottom has been taken up to reduce the grade.

In the narrow places the trolley is supported from brackets set in the rib but in wide places, such as shown in the illustration, roof supports are used. The extension rods in the Balkan mine are made of $\frac{3}{4}$-in. galvanized pipe. Those above the straight track are not braced but those on the curves are braced on the tension side by straps $\frac{1}{8}$ in. thick and $\frac{1}{4}$ in. wide. This construction has been in use for several years. It has proven satisfactory and presents a neat appearance.


**Side Braces Hold the Wire Where It Belongs**

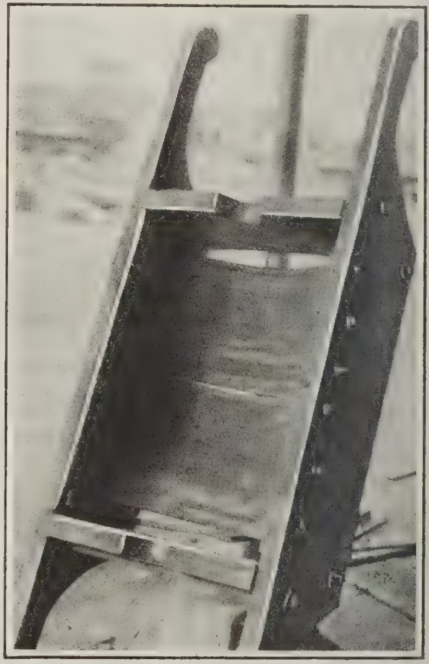
About 6 ft. of bottom has been taken up at this point to reduce the grade. The mine is in the TeJay seam and the coal averages 53 in. in thickness. Long cross supports could not be used but the extensions and braces make it possible to hold the wire in place. The side braces are used only on the line above the curved track.

## "Stretcher" Insures Safe Handling of Armatures

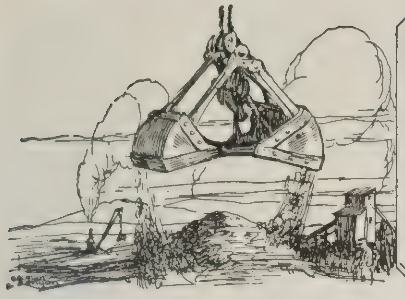
Armatures, despite their electrical strength and reliability, are somewhat complicated and delicate from the mechanical standpoint. Accordingly, these machine parts require careful handling when they are removed from their bearings. The accompanying illustration shows an armature "stretcher" or sling used at the mine shops at Valier, Ill., and designed to facilitate the transportation of armatures without injury to such parts as windings, commutator or bearing surfaces.

This device is extremely simple in its construction. It consists of two side pieces of light plank so cut as to form end grips to facilitate carrying. Between the side pieces are two end blocks, each provided with a notch to receive the armature shaft. These are bolted securely in place and serve as spacers; also attached securely to the sides by means of a strap and bolts are two pieces of old rubber belting.

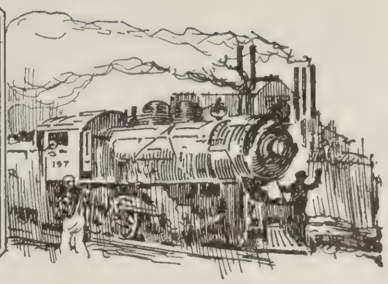
Into the cradle thus formed an armature may be laid without fear of injury. The width of the frame and the belly of the belting is such that the "stretcher" with an armature in it may be set down upon the floor or other level support without danger of the belting touching. The armature is thus well protected and there is small chance of its receiving mechanical injury while being transported either to or from the shop.


**Armatures Are Carried Safely in This "Stretcher"**

Even though this carrier, which will accommodate armatures of various sizes, is set down on slightly uneven ground or upon floor strewn with such objects as bolts, nuts, rivets or tools there is small likelihood of the armature being injured. The belly of the bed is less than a semicircle and even if some object, such as a nut, should come in contact with the belting this material would amply protect the armature resting upon it.



# Production And the Market



## Bituminous Coal Market Follows Even Pace; Undertone Is Firm

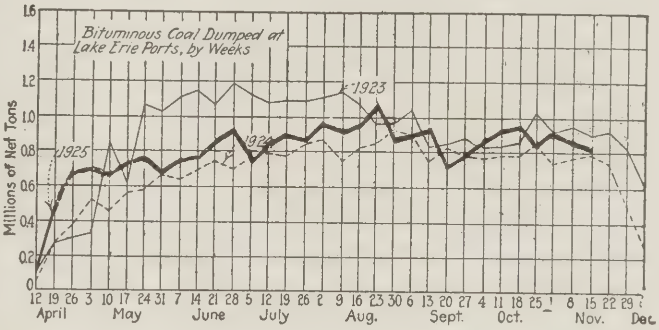
Despite the fact that production of bituminous coal continues above the twelve million-ton level the market retains much strength—a surprising amount in view of the comparatively mild weather thus far and the tendency to slump that usually appears in the wake of a sudden spurt such as that of a few weeks ago. The reaction seems to have been confined almost entirely to the market for anthracite substitutes, principally coke, which a few weeks ago was hitting only the high spots, but which took such a sudden flop that some of the top quotations have fallen $2@$2.50. Screened and prepared coals, which were next to coke in public preference as hard-coal substitutes, also have been gradually easing off as the demand for mine-run has been gaining headway. A sudden fall in temperature, which would quickly stimulate domestic demand, might, of course, cause another upturn, though it is not likely that recent high levels will again be attained.

Business in steam grades is fairly good, most holders of contracts taking full quotas, but with output at a high level and the sharp edge missing from domestic call, due to mild weather, there is no difficulty in taking care of requirements. Four mines in eastern Ohio reopened last week and several others are said to be ready to resume as soon as a favorable opportunity presents itself—when that will be, however, is somewhat doubtful in view of the closing of the lake season.

Movement of coal through the Cincinnati gateway fell off somewhat last week, 13,011 cars having passed through, which, however, was an increase of 302 cars over the corresponding week a year ago. The lake season closed with a record-breaking run of 2,103 cars.

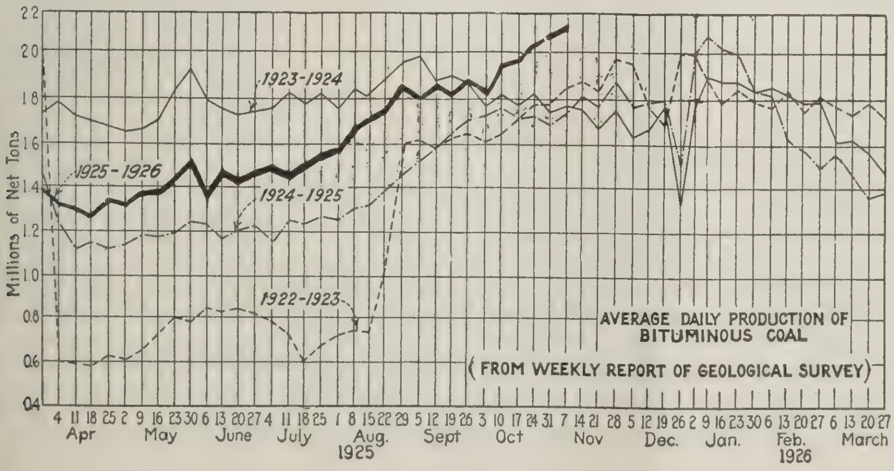
Anthracite is virtually out of the wholesale market and retailers having hard coal are apportioning it among regular customers in small lots. After holding separate conferences with President Lewis of the miners' union and Major Inglis, of the operators' scale committee, Governor Pinchot is working on a plan to get the miners and producers together and bring about a settlement of the strike.

Production of bituminous coal during the week ended Nov. 7 is estimated by the Bureau of Mines at 12,189,000 net tons, compared with 12,480,000 tons in the preceding week. The decline is attributed partly to the election holiday and partly to the observance of All Souls Day. Anthracite output in the week ended Nov. 7 totaled 28,000 net tons, an increase of 10,000 tons over the previous week.



*Coal Age* Index of spot prices of bituminous coal on Nov. 16 stood at 190, the corresponding price being $2.30, compared with 185 and $2.24 on Nov. 9.

Dumpings of coal at Lake Erie ports during the week ended Nov. 15, according to the Ore & Coal Exchange, were as follows: Cargo, 759,058 net tons; steamship fuel, 44,738 tons—a total of 803,796 net tons, compared with 842,813 tons in the preceding week. Hampton Roads dumpings during the week ended Nov. 12 totaled 402,152 net tons, against 398,123 tons in the previous week.



### Estimates of Production

(Net Tons)

**BITUMINOUS**

| | 1924 | 1925 |
|---|---|---|
| Oct. 24 | 10,645,000 | 12,088,000 |
| Oct. 31 (*a*) | 10,405,000 | 12,480,000 |
| Nov. 7 (*b*) | 9,695,000 | 12,189,000 |
| Daily average | 1,795,000 | 2,138,000 |
| Cal. yr. to date | (*c*) 401,889,000 | 431,562,000 |
| Daily av. to date | 1,531,000 | 1,639,000 |
| **ANTHRACITE** | | |
| Oct. 24 | 1,927,000 | 13,000 |
| Oct. 31 | 1,444,000 | 18,000 |
| Nov. 7 | 1,592,000 | 28,000 |
| Cal. yr. to date | (*c*) 77,246,000 | 61,769,000 |
| **COKE** | | |
| Oct. 31 | 150,000 | 261,000 |
| Nov. 7 | 140,000 | 292,000 |
| Cal. yr. to date | (*c*) 8,223,000 | 8,485,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Market Keeps Even Pace

The Midwest coal market maintains a fairly even pace without much excitement either in the domestic or the steam end of the business. Franklin and Saline County producers, and some in Williamson County, raised their prices on 6-in. lump a few days ago from $3.25 to $3.50. Most of the operators, finding that they were far behind on lump commitments, wished to draw some attention of the buying public to 6x3-in. furnace and 3x2-in. egg. High-grade Indiana Fourth Vein 6-in. lump has not as yet gone up to $3.50, although this is expected as soon as another cold snap appears. Central Illinois lump is reasonably firm for high-grade coal at $3@$3.25. The smaller domestic sizes are at lower levels, the price being set principally by the demand.

Steam coals are offered at all sorts of prices, ranging from 85c. on west Kentucky strip screenings up to $1.75 for good southern Illinois 2-in. screenings. Buyers are in the market, but, realizing the increase in production of steam coals, are driving as close bargains as they can for current needs. It is interesting to note that some of the largest industries are buying coal on the open market rather than on contract, as in years past.

The situation on Eastern coals is a little more complicated. There is a wide range in price on fancy grades of eastern Kentucky and West Virginia block—from $3.25 to $4. Those who appear to be getting a premium are the sales agents or operators who produce high-grade coal and have car numbers available to give to their trade. Smokeless lump, egg and nut have weakened perceptibly in Chicago; in fact, some operators have had to shade prices from 50c. to 75c. a ton in order to dispose of coal in transit. Good prepared coal has a range of $5.50@$6, egg bringing anywhere from 25c. to 50c. a ton over the price of lump. The best smokeless mine-run can be purchased at $2.50@$2.75, with plenty of coal offered at $2.25. Anthracite has practically disappeared from the market.

Seasonable weather is creating an unusually good market in southern Illinois for domestic lump, but egg and nut are slow and the other sizes are heavy. This is especially so in the Williamson-Franklin County field, where on Nov. 10 the price was raised 25c. a ton on lump, and in order to move other sizes there is a threat that lump and egg will advance another 25c. on the 18th. The shaft mines are getting pretty good working time although all of them have "no bills" on hand every night. Strip mines are doing well with a ready market. It is understood, however, that there are many idle mines in all of these fields. A car shortage is slowly developing. In the Duquoin field conditions are somewhat similar to those in Williamson and Franklin counties. Working time is about five days a week and prices range from 25c. to 50c. under the Franklin County circular.

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Nov. 17 1924 | Nov. 2 1925 | Nov. 9 1925 | Nov. 16 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $4.10 | $4.85 | $5.25 | **$6.00@$6.50** |
| Smokeless mine run | Columbus | 2.00 | 2.35 | 2.35 | **3.00@ 3.25** |
| Smokeless screenings | Columbus | 1.25 | 2.05 | 2.05 | **2.50@ 2.75** |
| Smokeless lump | Chicago | 4.10 | 5.75 | 6.25 | *5.50@ 6.00* |
| Smokeless mine run | Chicago | 1.85 | 2.25 | 2.50 | 2.25@ 2.75 |
| Smokeless lump | Cincinnati | 3.75 | 6.25 | 5.50 | 5.00@ 6.00 |
| Smokeless mine run | Cincinnati | 1.85 | 2.35 | 2.55 | *2.50* |
| Smokeless screenings | Cincinnati | 1.15 | 1.95 | 2.00 | 2.00 |
| *Smokeless mine run | Boston | 4.30 | 4.95 | 4.95 | **4.90@ 5.15** |
| Clearfield mine run | Boston | 1.90 | 2.05 | 2.10 | *1.90@ 2.25* |
| Cambria mine run | Boston | 2.30 | 2.35 | 2.40 | *2.10@ 2.60* |
| Somerset mine run | Boston | 2.05 | 2.15 | 2.20 | 2.00@ 2.40 |
| Pool 1 (Navy Standard) | New York | 2.75 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pool 1 (Navy Standard) | Philadelphia | 2.70 | 2.65 | 2.95 | 2.80@ 3.10 |
| Pool 1 (Navy Standard) | Baltimore | 2.30 | 2.15 | 2.15 | 2.10@ 2.20 |
| Pool 9 (Super. Low Vol.) | New York | 2.10 | 2.20 | 2.25 | **2.15@ 2.50** |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 1.95 | 2.30 | 2.20@ 2.45 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.70 | 1.95 | 1.95 | 1.90@ 2.00 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.85 | 1.95 | 2.00 | **1.85@ 2.20** |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 1.85 | 2.05 | 2.00@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.55 | 1.80 | 1.80 | 1.80@ 1.85 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.80 | 1.65 | **1.65@ 1.75** |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.70 | 1.90 | 1.85@ 2.00 |
| Pool 11 (Low Vol.) | Baltimore | 1.45 | 1.55 | 1.55 | 1.50@ 1.60 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.55 | 1.55 | 1.50@ 1.65 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.60 | 1.60 | 1.55@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.55 | 1.55 | 1.55@ 1.60 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.35 | 2.35 | 2.25@ 2.50 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 2.20 | 2.20 | *2.10@ 2.25* |
| Pittsburgh slack (Gas) | Pittsburgh | 1.15 | 1.30 | 1.30 | **1.40@ 1.50** |
| Kanawha lump | Columbus | 2.55 | 2.60 | 2.60 | **2.75@ 3.50** |
| Kanawha mine run | Columbus | 1.55 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings | Columbus | .95 | 1.30 | 1.20 | 1.15@ 1.25 |
| W. Va. lump | Cincinnati | 2.65 | 2.75 | 3.25 | **3.00@ 4.00** |
| W. Va. gas mine run | Cincinnati | 1.45 | 1.60 | 1.80 | *1.60@ 1.75* |
| W. Va. steam mine run | Cincinnati | 1.35 | 1.55 | 1.60 | *1.50@ 1.65* |
| W. Va. screenings | Cincinnati | .95 | 1.25 | 1.35 | *1.15@ 1.55* |
| Hocking lump | Columbus | 2.55 | 2.70 | 2.75 | **3.00@ 3.25** |
| Hocking mine run | Columbus | 1.60 | 1.65 | 1.65 | 1.50@ 1.85 |
| Hocking screenings | Columbus | .75 | 1.30 | 1.20 | **1.20@ 1.30** |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.55 | 2.55 | 2.10@ 3.00 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.95 | 1.90 | **1.90@ 2.00** |
| Pitts. No. 8 screenings | Cleveland | 1.10 | 1.45 | 1.40 | 1.35@ 1.50 |

| Midwest | Market Quoted | Nov. 17 1924 | Nov. 2 1925 | Nov. 9 1925 | Nov. 16 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $3.35 | $3.25 | $3.25 | **$3.50** |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Franklin, Ill. screenings | Chicago | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| Central, Ill. lump | Chicago | 2.85 | 2.85 | 2.85 | **3.00** |
| Central, Ill. mine run | Chicago | 2.20 | 2.20 | 2.20 | 2.15@ 2.25 |
| Central, Ill. screenings | Chicago | 1.25 | 1.55 | 1.55 | *1.35@ 1.50* |
| Ind. 4th Vein lump | Chicago | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.45 | 1.60 | 1.80 | 1.75@ 1.90 |
| Ind. 5th Vein lump | Chicago | 2.85 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.10 | 1.40 | 1.40 | 1.35@ 1.50 |
| Mt. Olive lump | St. Louis | 3.00 | 2.50 | 2.85 | 2.75@ 3.00 |
| Mt. Olive mine run | St. Louis | 2.35 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.10 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.75 | 2.25 | 2.25 | **2.35@ 2.50** |
| Standard mine run | St. Louis | 1.95 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | .65 | 1.15 | 1.15 | *.75@ 1.00* |
| West Ky. block | Louisville | 3.05 | 2.05 | 2.10 | 2.00@ 2.25 |
| West Ky. mine run | Louisville | 1.60 | 1.35 | 1.35 | **1.25@ 1.50** |
| West Ky. screenings | Louisville | .80 | .90 | .80 | .65@ 1.00 |
| West Ky. block | Chicago | 2.75 | 2.05 | 2.35 | 2.25@ 2.50 |
| West Ky. mine run | Chicago | 1.55 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.10 | 2.25 | 2.25 | 2.00@ 2.50 |
| Big Seam mine run | Birmingham | 1.70 | 1.75 | 1.75 | *1.60@ 1.75* |
| Big Seam (washed) | Birmingham | 1.85 | 1.85 | 1.85 | 1.75@ 2.00 |
| S. E. Ky. block | Chicago | 2.75 | 3.00 | 3.35 | **3.50@ 4.00** |
| S. E. Ky. mine run | Chicago | 1.60 | 1.95 | 1.95 | **2.00@ 2.35** |
| S. E. Ky. block | Louisville | 3.25 | 3.10 | 3.50 | **3.25@ 4.00** |
| S. E. Ky. mine run | Louisville | 1.60 | 1.50 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Louisville | .95 | 1.20 | 1.35 | 1.25@ 1.50 |
| S. E. Ky. block | Cincinnati | 2.75 | 3.25 | 3.35 | **3.25@ 4.25** |
| S. E. Ky. mine run | Cincinnati | 1.45 | 1.60 | 1.75 | *1.50@ 1.75* |
| S. E. Ky. screenings | Cincinnati | .95 | 1.25 | 1.35 | *1.15@ 1.40* |
| Kansas lump | Kansas City | 5.00 | 4.85 | 5.00 | 5.00 |
| Kansas mine run | Kansas City | 3.35 | 3.10 | 3.25 | *3.00@ 3.25* |
| Kansas screenings | Kansas City | 2.00 | 2.30 | 2.30 | 2.25@ 2.35 |

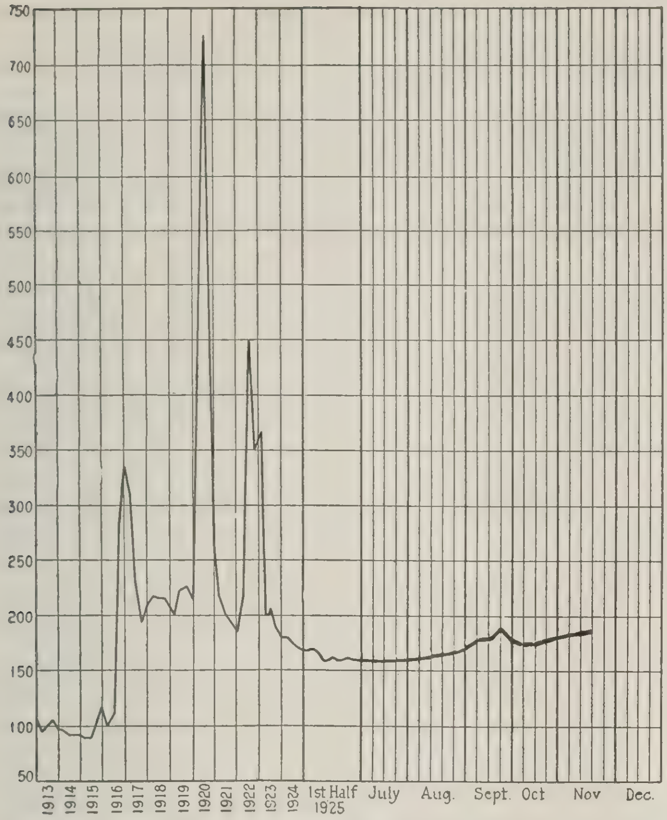
* Gross tons, f.o.b. vessel, Hampton Roads.

† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | November 17, 1924 | | November 9, 1925 | | November 16, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ........... | $8.00@$9.25 | ........... | $8.20@$8.95 | ........... | $8.20@$8.95 |
| Broken | Philadelphia | 2.39 | ........... | 9.15 | ........... | ........... | ........... | ........... |
| Egg | New York | 2.34 | $8.50@$8.75 | 8.75@ 9.25 | ........... | 8.65@ 8.90 | ........... | 8.65@ 8.90 |
| Egg | Philadelphia | 2.39 | 9.45@ 9.75 | 8.80@ 9.25 | ........... | ........... | ........... | ........... |
| Egg | Chicago* | 5.06 | 8.17@ 8.25 | 8.14@ 8.20 | $9.50@10.00 | 8.03@ 8.25 | $9.50@10.00 | 8.03@ 8.25 |
| Stove | New York | 2.34 | 10.00@10.50 | 8.75@ 9.50 | ........... | 9.15@ 9.40 | ........... | 9.15@ 9.40 |
| Stove | Philadelphia | 2.39 | 10.10@10.75 | 9.15@ 9.50 | ........... | ........... | ........... | ........... |
| Stove | Chicago* | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@11.00 | 8.48@ 8.80 | 10.00@11.00 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 9.75@10.25 | 8.75@ 9.25 | ........... | 8.65@ 8.95 | ........... | 8.65@ 8.95 |
| Chestnut | Philadelphia | 2.39 | 9.85@10.50 | 9.15@ 9.25 | ........... | ........... | ........... | ........... |
| Chestnut | Chicago* | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@11.00 | 8.50@ 8.75 | 10.00@11.00 | 8.50@ 8.75 |
| Pea | New York | 2.22 | 5.00@ 5.50 | 5.50@ 6.00 | ........... | 5.00@ 6.25 | ........... | 5.00@ 6.25 |
| Pea | Philadelphia | 2.14 | 5.75@ 6.00 | 6.00 | ........... | ........... | ........... | ........... |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 |
| Buckwheat No. 1 | New York | 2.22 | 2.00@ 2.50 | 3.00@ 3.15 | ........... | 2.50@ 2.75 | ........... | 2.50@ 2.75 |
| Buckwheat No 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | ........... | 2.50@ 3.00 | ........... | 2.50@ 3.00 |
| Rice | New York | 2.22 | 1.75@ 2.15 | 2.00@ 2.25 | ........... | 2.25 | ........... | 2.25 |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | ........... | ........... | ........... | ........... |
| Barley | New York | 2.22 | 1.25@ 1.50 | 1.50 | ........... | 2.25 | ........... | 2.25 |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | ........... | ........... | ........... | ........... |
| Birdseye | New York | 2.22 | ........... | 1.60 | ........... | ........... | ........... | ........... |

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Nov. 16 | Nov. 9 | Nov. 2 | Nov. 17 |
| Index | 190 | 185 | 181 | 170 |
| Weighted average price.. | $2.30 | $2.24 | $2.19 | $2.06 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

The Mt. Olive field shows considerable activity. Railroad tonnage is good and domestic shows an increase, with a little steam moving slowly. Prices in this field advanced recently to $2.75 for St. Louis shipments and $3 for country shipments on domestic lump. Business in the Standard field is hand to mouth. Prices are just about the cost of production. The demand is good for lump but there is no call for anything else. Working time is anywhere from three to five days a week. Railroad tonnage is fair. The latest reports indicate that there is a possibility that the consolidation of mines in the Fifth and Ninth districts has a chance now of going through, as some of the large operators who held out in the beginning have recently indicated a willingness to come in.

Fairly seasonable weather at St. Louis means fairly good movement of domestic coal—not alone of high grade, but middle grade as well. Anthracite and smokeless show poorly, but coke continues to improve. Local wagonload steam is good and carload is fair. There is a fairly good movement of domestic to the country, preferably middle grade. Country steam is quiet. St. Louis retail coal prices are expected to advance between Nov. 15 and 20.

### Heavy Tonnage Moves from Kentucky

Movement from Kentucky continues very heavy, it being reported that some coal is moving to Canada and east as far as Buffalo, and a lot is going into markets that formerly handled a good deal of smokeless coal, which has been passed up on account of the present prices. Relatively warm weather in Louisville has caused a slump in local demand for both steam and domestic sizes. River movement south from western Kentucky is getting under way again after a long shutdown due to low water.

In western Kentucky fine screenings (pea and slack) is being sold at 65@85c., with nut and slack at 90c.@$1. Not much nut and slack is offered, however, as most operators screen for nut, and buyers prefer fine screenings for use in automatic stokers.

Quotations as high as $4.50 a ton are heard on best grades of specialty eastern Kentucky 4-in. block coals, but $3.25@$3.75 catches most of the movement.

Rural movement over Kentucky and nearby states has been picking up somewhat, but the larger city retailers are not taking to higher prices very well.

Car shortage is more pronounced and distribution worse, a great deal of the trouble in eastern Kentucky being due to cars being held under load at lake ports.

### All Lines Firm in Northwest

Dock operators at Duluth-Superior have been putting through substantial sales of both anthracite and bituminous coal, but warmer weather has caused a slackening as compared with the latter half of October. Markets are firm in all lines of anthracite and bituminous coal and dealers show no disposition to take advantage of any shortages of supplies. Anthracite dock prices are: Egg, $13.20; nut and stove, $13.60; pea, $11.05; buckwheat, $6.50.

Demand for Pocahontas (as a substitute for anthracite) is the heaviest in the experience of the trade here, but prepared sizes are still $8.50@$9 and other lines of bituminous coals are unchanged.

Industrial buying is steadily gaining over Minnesota and northern Wisconsin, iron-mining companies on the Minnesota ranges having increased orders for mine-run and screenings.

Domestic orders for anthracite have been on such a heavy scale that it is now figured that the exhaustion stage in all sizes will be reached by about Feb. 1.

Last month's shipments from the docks were the highest in several years—31,685 cars—as compared with 24,032 cars during the preceding month and 26,418 cars during October last year. The docks received from Lake Erie ports 1,242,816 tons of bituminous but no anthracite during October. Total receipts of soft coal to Nov. 1 were 7,688,638 tons, an increase of 1,425,975 tons over the same period last year. Anthracite receipts were 786,848 tons, a decrease of 390,423 tons from last year. Bituminous stocks on the docks are now placed at 5,450,000 tons, of which approximately 2,000,000 belongs to the railroads.

Twenty-nine cargoes of coal were unloaded at the docks last week and thirteen, including one of anthracite screenings to be used by a Superior company in making briquets, were reported en route.

Coal demand in Milwaukee has slackened due to milder weather. Anthracite virtually is out of the market, and in consequence consumers who can burn bituminous coal are turning to the better grades, which are firm in price and looking upward. There is a strong demand for coke, and prices are advancing. Local dealers now get $15 for range coke, $14 for the nut size, and $12 for pea. No anthracite has been received since Sept. 15, but cargoes of bituminous coal are coming in as usual. Receipts for the season of 1925 to Nov. 13 total 3,305,001 tons—488,234 tons of anthracite and 2,816,767 tons of bituminous coal.

A touch of Indian summer has slowed down the demand for coal in various directions in the Twin Cities, but a fair tonnage is moving, both at retail and in the steam trade. It is not at all certain that there will be any great shortage of hard coal, for the trend to other fuels has been pronounced. Prices are holding steady and fairly firm on all grades. Smokeless is holding the advance recently made. All-rail coals are stable, with southern Illinois lump firm at $3.25; Indiana, $3@$3.25; central Illinois, $2.75@$3; western Kentucky, $2@$2.15.

### Southwest Output Still Behind Orders

The impetus given the coal market in the Southwest by the early arrival of freezing weather has carried it briskly through a week of moderate temperature. Kansas mines started last week two weeks behind on deliveries of lump, two days were lost for Armistice Day and pay day, and the week ended with no diminution of unfilled orders. Operators report from three days' to a week's accumulation of orders for Kansas nut. The supply of screenings is about equal to the demand. There have been no changes in prices. While some operators quote as low as $2.25 on screenings on large contracts, $2.35 is the prevailing price.

The demand for Colorado domestic coal continues to increase since cold weather set in. A great many operators are booking orders now for December delivery, which is quite a contrast with this time a year ago. Labor shortage is a disquieting development, but it is hoped that this will be remedied when the sugar beet industry campaign is over, which will release a great many employees who will go back to the coal mines again. There has been no change in prices on Colorado coal during the last week. Raton and Dawson, (N.M.) mines, which produce about 90 per cent of New Mexico coal, announce these new quotations: 6-in. lump, $4.25; fancy egg, $4.25; fancy nut, $3.75; fancy pea, $3.25.

Utah mines are working about two-thirds of full-time capacity. There is a slight shortage of cars, but the situation so far is not such as to hinder the filling of orders. Generally the larger sizes are the stronger. Demand for coal for heating purposes is stronger now that cooler weather has set in. Mines and smelters are the biggest industrial customers, but there is a good demand for steam coal, due to heavy traffic on the railroads. Sugar factories are in the midst of a heavy campaign, and they are providing a good outlet for slack. Prices remain steady and the labor situation is excellent.

### Cincinnati Market Retains Strength

Since the recent price spurt there has been a lull at Cincinnati, but the market is in as strong a position as it was a week ago, perhaps stronger for despite warmer weather, the closing of shipments to the lakes and a promise of 100 per cent car supply to the Louisville & Nashville fields of southeastern Kentucky there have been no drastic breaks in prices. There have been recessions, but only where the demand has moderated.

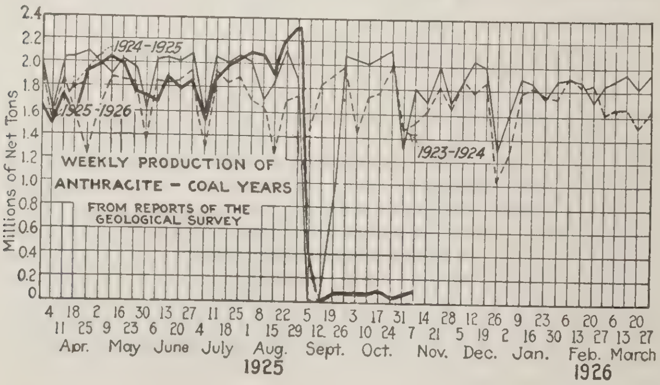
Due to a blockade at the lakes the movement has slowed up, only 13,011 cars being reported by the American Railway Association as passing through the Cincinnati gateways last week, a decrease of 1,964 as compared with the week previous, but 302 more than in the corresponding week of last year. Of these, 2,103 cars were routed to the lakes, a decrease of 770 cars from the previous week but a record movement for the closing of the season.

Most of the high-volatile demand last week was for block (4-in. and 6-in.) sizings. Miller's Creek, Coal Rivers, Elkhorns, the Jellicoes and the like were firm around $4@$4.50. West Virginia offerings range between $3 and $3.50. The Hazard price of $3.25@$3.50 held and Harlans about the same. The make of egg seemed a little more than the market would digest, so from a top of $3 these sizings fell to $2.65@$2.75 and with a slackened demand for mine-run and slack the former reverted to its old position and screenings down to a $1.25 average.

There has not been much adjustment in smokeless, lump still ranging $5@$6, with contract takers getting the better of the argument. Mine-run, which had stiffened a bit, has again struck a dead level of $2.50. Screenings are said to have sold up to $2.25, but considering volume sales the general market has not gone beyond the $2 level.

Heavy rains have given the river a good running stage, and a plentiful supply is coming down for those engaged in this trade. Cincinnati retailers are still fencing with the market with a spread of $9.50@$10.50 on smokeless lump, $6.50@$7 on mine-run, $6.50@7 on bituminous lump and $4.50@$5 on slack.

Warmer weather at Columbus has caused a slight hesitancy in the domestic trade, although the new prices announced Nov. 1 are generally maintained. Retail prices, which jumped several weeks ago, are still firm and little cutting is reported. Because of the big jump in smokeless there is a better demand for splints, as the difference is $2.50 to $2.75 per ton.



The steam trade is quiet and rather spotty. Buying is mostly from hand to mouth, although a tendency to increase reserves is noticeable as to utilities, iron and steel plants and larger manufacturing plants. While car shortage is appearing in certain places, still this is not serious yet.

Production in the southern Ohio field ranges around 30 to 35 per cent of capacity with many large mines in condition to resume work immediately when market conditions warrant.

In eastern Ohio there has been a decided let-up in domestic orders. Pocahontas and other West Virginia and eastern Kentucky lump sizes have weakened 25c. to 50c. per ton f.o.b., Pocahontas lump being quoted at $5.50@$5.75 and the others $3.25@$3.50 f.o.b. mine.

Inquiries and orders from steam consumers also have been comparatively light, but despite this market situation eastern Ohio production during the week ended Nov. 7 was the largest of any week in the present calendar year. A total of 332,000 tons was mined or 23,000 tons over the preceding week and 21,000 tons over the corresponding week a year ago. This larger production is almost entirely moving in the late-season lake trade.

### Eastern Demand Disappears from Pittsburgh

The Pittsburgh district coal market seems quiet since the recent and brief bulge in demand from the East, chiefly for egg coal. For a few days egg coal brought $4.50@$5; even $5.25, according to some accounts. Now it is about $3, while 3-in. lump is now irrgular at $3.25@$3.75.

The general demand for local domestic consumption and for railroad and industrial use has decreased little if at all. In the last few days slack has advanced sharply to $1.30 @$1.40 for steam, against $1.15@$1.25 formerly, while gas slack is quotable at $1.40@$1.50. The upward reaction is attributed partly to ending of the bulge in lump demand.

The straight bituminous market at Buffalo is quiet. Sizes are doing something, but slack is slow of sale and the trade is wondering what will be done with the coal that is now going to the lakes. Shipping to the lakes will be over in two weeks or so and then it is for these mines to shut down or divide the remaining trade with the other mines. Quotations are: $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run and $1.26@$1.40 for slack; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, $1.30@$1.60 for slack; $1.75@$2 for Allegheny Valley mine-run. Some Youghiogheny special sizes run up as high as $4, mostly for house use, and some special Pittsburgh sizes are $1 or so up for the same trade.

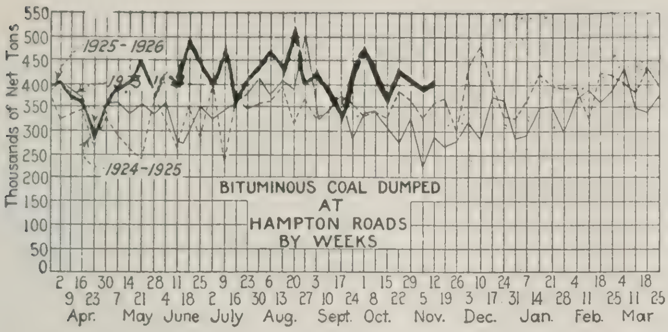
### New England Trade Only Fair

In the New England market the demand for steam coal continues light. In some directions quotations are slightly firmer, but the spot market in general varies from day to day according to the pressure shippers are under to move coal. The relatively few large buyers who enter the market from time to time have now accumulated winter stocks for the most part, and from now on the spot market will be restricted to purchasers of smaller tonnages.

The Hampton Roads agencies have ample supplies available for dumping. About the usual clearances are being applied on contracts, and those factors who take coal for distribution inland are accepting liberal consignments. There is no special push for coal; neither is there any indication that shippers are likely to be seriously pressed for orders. Of course a considerable tonnage of low volatile is being moved in prepared sizes; a modicum is finding its way from the Pocahontas and New River districts all-rail to New England, but the great bulk is moving along the line and to the west in usual channels.

Quotations on lump and egg from the smokeless fields still range $5@$7.50 per net ton at the mines, though a few venturesome sales agents quote $8. No heavy tonnage is being arranged for on the higher prices, but some producers of higher grade low volatile in central Pennsylvania have modified their prices materially during the past week. Good lump and egg can be had at $5.25@$6, these coals taking the minimum Clearfield rate to all New England territory.

For mine-run from central Pennsylvania there is only scattering demand here, and then only in areas well away from tidewater competition of Pocahontas and New River.



Prices on the latter are $6@$6.35 per gross ton on cars Boston and Providence, and only at certain points can all-rail coals find a market at $2.15@$2.50 for fair to good grades.

## Trade Eases in Middle Atlantic Markets

There is not much activity in the New York bituminous coal market outside of mine-run coals. The latter move easily but buyers are not overanxious about future supplies. Screened and prepared coals have eased off in the past week.

Central Pennsylvania low-volatile prepared coals are quoted at $6@$6.50 with lump coals $4@$5, depending on quality and sizing. While Pennsylvania mine-run coals are in healthy condition, prices remain firm at last week's level. Some grades of Pool 1 Pennsylvania coals are offered at $2.50, but the average market is 25c. higher.

Interest in New River and Pocahontas prepared coals was awakened late in the week by the I. C. C. hearing on rates from those fields to this territory. Some of these coals are now coming into this area to take the place of anthracite and efforts are being made to increase their use. Quotations range $6@$7.50.

Receipts at the piers are heavy but the tonnage is easily moved.

Several cargoes of Welsh coals are said to be on their way to this harbor.

The quickening of a week ago in the Philadelphia market has lost much of its force. The market for sized bituminous continues good, but it is in mine-run that most advance has been made. Orders from contract customers are in good to heavy volume, spot buyers also are taking much coal, and the shipper admits that the future is one of much promise. Tide trade is good only in bunkers, as the export trade continues to hang back.

The soft-coal trade at Baltimore has been marking time for the past week in an industrial sense. Extreme activity marks prepared sizes which can be used as substitutes for anthracite, the better grades are still bringing $5.50@$7.50 per ton, f.o.b. mine. Industrial coals continue only in fair demand and there continues an adequate supply. The export situation is entirely dormant.

The steam market is very active at Birmingham and all grades of coal are moving from the mines as promptly as car supply will permit. Spot orders are brisk and shipments against contracts are heavy. Bunker trade is showing more activity than in several months.

The domestic market is much improved over a few weeks back, demand being sufficient to absorb the production of high-grade product promptly, with a little lagging in the movement of lower qualities. Most mine prices are the same as in October, increases of 25c. to 50c being reported for a few operations.

The coke market is active and much of this product is being shipped North, East and West as well as supplying the demand in home territory, which is heavier than in some time. Several additional furnace stacks are soon to be blown in.

Quotations on some of the better grades of coal have advanced 25c. to 50c. a ton in the last week, Cahaba mine-run now ranging $2.25@$2.50; washed, $2.25@$2.75; Black Creek mine-run, $2.25@$2.50; washed, $2.50@$3; Corona mine-run, $2.50; washed, $2.75; Carbon Hill washed, $1.90@$2.25. Foundry grades of coke are quoted for spot shipment $6@$6.50; egg sizes, $4.50; nut, $4.25 per ton ovens.

Car supply on all lines has been short of requirements at some time during the past week, causing interruptions at quite a number of operations.

## Hard-Coal Substitutes Continue to Drag

Although anthracite is practically out of the New York wholesale market consumers in the metropolitan district have not taken to buying the various substitutes as it was expected they would. Retailers have some hard coal in their yards but they are distributing it among regular customers in small lots. These coals consist mostly of pea and buckwheat.

Indications are that the demand for substitutes will depend entirely on weather conditions, but thus far the retailers have not had a demand to justify filling their bins with substitute fuels.

The call for coke has flattened and quotations are now about $2 below what they were ten days ago. Beehive product is quoted at $7.50@$8.50, and run-of-oven $6.50@$7.

The tidewater market continues to hold some pea and buckwheat coals for those willing to pay the prices quoted. Independent pea coal was offered during the latter part of the week at $17 alongside and independent buckwheat at $8.

A lull in the trade developed in Philadelphia last week and consumers displayed little interest in buying. Quite a few dealers with fair stocks of pea are easily getting $15 a ton for it, and the sale of buckwheat is much improved at $9@$10.

Company pea shipments are fast reaching an end, and the company shipping buckwheat is declining further orders.

The slowing-down in retail demand has caused a decline in the price of coke at the ovens, some breaks being as much as $1.50 a ton.

The situation at Baltimore is summarized in the statement that there is no reserve except limited quantities of pea and buckwheat in a few of the yards. What hard coal is left is being distributed in one- and two-ton lots on emergency orders. Dealers are purchasing substitutes, such as soft coal and the so-called anthracite briquets. The latter in most cases are selling around $13.50, without discount, for a 2,000-lb. ton. Since Sept. 1 the records of the fire department show that 176 applications for oil-burning installations have been approved.

At Buffalo pea and buckwheat are giving out. Though the demand for coke at prices up from $6 to $10 a ton for a while exceeded the supply, it is running down now and it is carrying the prices with it. Some coke manufacturers have reduced prices $5 or so and still the jobbers are afraid of it, for they say it is quite possible for the price to come down several dollars more any day.

## Connellsville Coke Market Liquidates

The past week has been one of liquidation in the Connellsville coke market. At the end of last week there was a considerable accumulation of loaded coke on track, and the railroads, with possibilities of a car shortage, would not allow it to remain. Whereas three weeks ago the market range was $8.50@$9, sales in the last few days have centered around $6.

The decline stimulated buying somewhat in the East and induced a little blast-furnace buying for reserves, as with contracts at around $3 and such fancy spot-market prices the operators have not shipped any more to blast furnaces than contracts absolutely required.

The accumulation is pretty well worked off, but as recent sales were for quite prompt shipment many operators are now practically without a backlog. With such heavy production coke may be forced on the market next week. There is quite a general prediction, however, that when the market does begin to turn upward it will move apace, for Eastern requirements should easily absorb all the coke the region can furnish and much higher prices than $6 could easily be paid.

Foundry coke has softened and is now quotable at $7@$7.50, with a moderate running demand.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Oct. 31, 1925 | 1,091,273 | 194,255 |
| Previous week | 1,121,459 | 189,006 |
| Week ended Nov. 1, 1924 | 1,073,374 | 182,249 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Oct. 31, 1925 | 111,619 | 42,949 | ........ | ........ |
| Oct. 22, 1925 | 122,597 | 48,533 | ........ | ........ |
| Oct. 31, 1924 | 99,190 | 49,053 | ........ | ........ |

# Foreign Market And Export News

## Inquiry Gains Steadily In British Coal Market; Receives U. S. Orders

Though the situation in the Welsh steam coal trade shows improvement, it has not made the progress hoped for. New orders have been received to a substantial extent, but business is still fully 25 per cent below the volume necessary to give full employment at the collieries. In addition, orders are very unequally distributed, as revealed by the great contrast between the activity of the anthracite collieries in the western area and the inactivity of the semi-bituminous pits of Monmouthshire, where the acute depression has not been relieved. Improvement has been retarded by a shortage of steamers lately, due to delays occasioned by a prolonged period of stormy weather.

Some business is coming to South Wales from the United States as the result of the anthracite strike in that country. Dry nuts in particular are strong, but the supply is limited. Generally, colliery owners are better booked over November.

The improvement in the Newcastle-on-Tyne coal trade is fully maintained, inquiry being unabated for Northumberland and Durham coals, but there is a limit to the capacity of the pits to provide supplies for prompt loading, and in consequence a good deal of trade is being carried over. Business done recently includes cargoes of coal and coke for Canada and the United States as well as increased consignments to South America. Inquiry for delivery up to the end of the year and to next March is growing and bunkering and other contracts for next year are begining to command attention. There is an improving market for Durham coking coals. Coke is particularly active and strong. Stocks throughout the district are meager, while the demand is brisk for months ahead.

Output by British collieries during the week ended Oct. 31, according to a special cable to *Coal Age*, totaled 4,835,000 gross tons, compared with 4,820,000 tons in the preceding week.

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## French Dealers Renew Stocks When Demand Lags

In the French Coal Market industrial coals are in light demand and there is no talk of replenishing stocks. The continued rise of the pound and the Belgian franc is hampering imported coals, Belgian coals being further handicapped by an advance in the Charleroi-Paris freight rate.

Domestic coal consumption has been slow, and coal merchants have been refilling their yards which were understocked owing to delays in shipment from Belgian and French mines.

There still is some irregularity in the return of empty wagons to the mines, but barges are more plentiful.

Receipts of indemnity fuels from the Ruhr during the first seventeen days of October, included 239,400 tons of coal, 132,400 tons of coke and 18,000 tons of lignite briquets. Beginning Nov. 1 prices of anthracite dry and semi-bituminous sized were increased 10 fr. and of lignite briquets 5 fr.

During the first twenty-seven days of October the O. R. C. A. received from the Ruhr 196,735 tons of reparation coke.

## Firmer Tone Brightens Outlook At Hampton Roads

Business at Hampton Roads was better last week with coastwise and bunker trade improving and inland business showing considerably greater strength. The new all-rail freight rate to New York and New England had strengthened prices in domestic trade, and inland consumers were paying a premium.

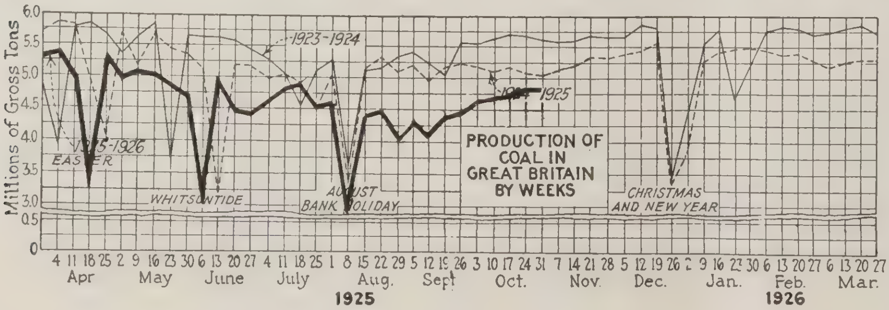
Inquiries were better and demand, except for foreign movement, was showing a substantial increase. Foreign shipments were slack, but regarded as normal for this time of the year. The tone of the market was strong and the outlook considerably brighter.

## Firmer Note in Belgian Market

There has been no particular change in the situation in the Belgian coal market. In spite of the remarkable decline of the French franc, there is no considerable competition by collieries of the Nord and Pas de Calais, due to the low prices quoted by Belgian mines in the Borinage basin. On the other hand, British competition is even stronger. If, as is hoped, the Charleroi strike were to come to an end, there would certainly be an increase of demand from this direction.

Prices for industrial coals seem to be firmer, except for heavy tonnages, on which concessions are still the rule of the day. In domestic coals the tendency is still toward firmness, though the weather has not been favorable to consumption. Delays in transportation have been so persistent, however, that the mines hardly notice the diminution of consumption. There is no anthracite for disposal. Coke is slightly improved and for briquets prices are somewhat firmer owing to the high cost of pitch.

Receipts by Belgium of indemnity fuels from the Ruhr during the first nine months of 1925 totaled 1,870,000 tons.



### Export Clearances, Week Ended Nov. 14, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Porto Rico: | |
| Amer. Schr. Brina P. Pendleton, for San Juan | 2,002 |
| For Cuba: | |
| Swed. Str. Mongolia, for Havana | 2,892 |
| Br. Schr. Ada Tower, for Manzanillo | 905 |
| Br. Str. Willowpeak, for Havana | 2,801 |
| For Brazil: | |
| Br. Str. Pencarrow, for Rio de Janeiro | 6,418 |
| For Italy: | |
| Ital. Str. Adige, for Porto Ferrajo | 9,340 |
| Ital. Str. Giovanni, for Genoa | 10,433 |
| For French West Indies: | |
| Nor. Str. Fram, for Fort de France | 3,961 |

FROM PHILADELPHIA

| | |
|---|---|
| For Cuba: | |
| Br. Str. Wilston, for Havana | —— |

### Hampton Roads Coal Dumpings*

| | Nov. 5 | Nov. 12 |
|---|---|---|
| N. & W. Piers, Lamberts Pt.: | | |
| Tons dumped for week | 100,502 | 133,542 |
| Virginian Piers, Sewalls Pt.: | | |
| Tons dumped for week | 97,583 | 89,515 |
| C. & O. Piers, Newport News: | | |
| Tons dumped for week | 157,382 | 136,008 |

*Data on cars on hand, tonnage on hand and tonnage waiting withheld due to shippers' protest.

### Pier and Bunker Prices, Gross Tons

| | Nov. 7 | Nov. 14† |
|---|---|---|
| Pool 1, New York | $5.75@$6.00 | $5.75@$6.00 |
| Pool 9, New York | 5.00@ 5.20 | **5.00@ 5.25** |
| Pool 10, New York | 4.65@ 4.85 | **4.65@ 5.00** |
| Pool 11, New York | 4.55@ 4.65 | **4.55@ 4.70** |
| Pool 9, Philadelphia | 5.05@ 5.30 | 5.05@ 5.30 |
| Pool 10, Philadelphia | 4.80@ 5.10 | 4.80@ 5.10 |
| Pool 11, Philadelphia | 4.50@ 4.75 | 4.50@ 4.75 |
| Pool 1, Hamp. Roads | 4.85@ 5.00 | **5.25@ 5.35** |
| Pool 2, Hamp. Roads | 4.60@ 4.70 | **4.85@ 5.00** |
| Pools 5-6-7, Hamp. Rds. | 4.50 | **4.65** |
| BUNKERS | | |
| Pool 1, New York | $6.00@$6.25 | $6.00@$6.25 |
| Pool 9, New York | 5.25@ 5.45 | **5.25@ 5.50** |
| Pool 10, New York | 4.90@ 5.10 | **4.90@ 5.25** |
| Pool 11, New York | 4.80@ 4.90 | **4.80@ 4.95** |
| Pool 9, Philadelphia | 5.30@ 5.55 | 5.30@ 5.55 |
| Pool 10, Philadelphia | 5.10@ 5.35 | 5.10@ 5.35 |
| Pool 11, Philadelphia | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 1, Hamp. Roads | 5.00 | **5.25@ 5.35** |
| Pool 2, Hamp. Roads | 4.70 | **4.85@ 5.00** |
| Pools 5-6-7, Hamp. Rds. | 4.50 | **4.75** |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Nov. 7 | Nov. 14† |
|---|---|---|
| Admiralty, large | 23s.@23s.6d. | *22s.6d.@23s.9d.* |
| Steam smalls | 10s.6d. | **10s.6d.@11s.** |
| Newcastle: | | |
| Best steams | 15s.9d. | *15s.6d.@15s.9d.* |
| Best gas | 16s.3.@18s.9d. | *16s.6d.* |
| Best bunkers | 15s.@16s.6d. | *14s.6d.* |

† Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

The Birmingham district had as its guests during the week ending Nov. 14 J. W. Paul, chief coal mining engineer of the Bureau of Mines, Pittsburgh; R. R. Sayer, chief surgeon, Washington, and M. Van Siclen, engineer in charge of mining research work, Washington. These men are making a ten-days inspection and survey of the coal mines of the district. The tour will be directed by officials of the Birmingham office of the Bureau of Mines, J. E. Cash, W. R. Crane and F. E. Meriweather. The work of the Birmingham section of the Bureau for the coming year will be mapped out by the visiting officials. The visitors will be the guests of the Alabama Mining Institute at a safety meeting at the Overton mines of the Alabama Fuel & Iron Co. during their stay here.

The brisk coke market has brought about a resumption of several hundred beehive ovens, 200 being placed in commission by the Sloss-Sheffield Steel & Iron Co. at Flat Top and also a number in the batteries of the New Castle Coal Co., at New Castle.

Walter E. Henley, president of the Little Cahaba Coal Co., of Piper, and the Blocton-Cahaba Coal Co., Coleanor, has been elected president of the Birmingham Trust & Savings Bank, one of the oldest and the second largest financial institution in Alabama, succeeding the late Tom O. Smith.

The Connellsville Mine of the Yolande Coal & Coke Co., near Yolande, Tuscaloosa County, which has been in process of rehabilitation for several months, is expected to be producing coal soon after New Years. This opening had been idle for some fifteen years or longer and had to be pumped out and provided with new equipment both inside and out and the necessary tipple structures and washery.

## ARKANSAS

The No. 2 mine of the Western Coal Mining Co., at Deming, will be reopened after having been closed for a year. A new tipple is being built at the mine.

Of the 192 coal mines listed in Arkansas, 94 were in operation at some time during the fiscal year ending June 30, 1925, and their total output was 1,398,346 net tons, an increase over 1924 of 99,555 tons, according to the annual report just published by Claude Speegle, state mine inspector. Fifty-three mines were idle last year and 49 were abandoned. The total number of men employed in and around the mines was 3,701. The number of non-fatal accidents was 39 and fatal accidents numbered 10.

## COLORADO

Charles W. Brown, formerly general sales agent of the Hayden Brothers Coal Corporation, operating mines in Routt County, has been appointed general manager, to fill the vacancy created by the death of L. A. Hayden.

About 160 employees of the Pikeview mine, four miles north of Colorado Springs, refused to return to work Nov. 9, demanding an immediate raise in wages from $5.25 to $5.82 per day. The mine is owned by the Pike's Peak Coal Co., an E. A. Carlton interest, the largest coal mining company operating in the district.

## ILLINOIS

The Galesburg Mining Co., Galesburg, which is mining coal from a new mine five miles east of that city, is now sinking a large air and escapement shaft, 6¾ x 10½ ft., located 500 ft. east of the present shaft. This mine is now sending from 80 to 100 tons of coal daily to the top and the bed is 4 ft. to 4½ ft. thick. The tipple has been completed and is doing excellent work.

Rice Miller and Judge Amos Miller, his father, have purchased the mine and other property of the Hillsboro Coal Co. at Hillsboro. The deal is said to have involved $100,000. Rice Miller had been superintendent of the Hillsboro Coal Co. for many years. He also is president of the Illinois Coal Operators Association. The mine employs several hundred men and has been a steady producer for a number of years.

## INDIANA

Mine No. 1 of the Sargeant Coal Co., near Newburg, has resumed work after a long idleness. The Schimmel-Hampton Coal Co., of Newburg, is operating the mine with a force of 50 men.

As a result of miners of Dering mine No. 6, in the Clinton field, refusing to work because of an injunction restraining Albert C. Daily, state mine inspector, from closing the mine, officials of the company on Nov. 10 asked for a conference with the miners and the state mine inspection department. The injunction was issued in the Circuit Court at Rockville. The conference probably will be granted, according to union officials, who deplored interference with the department carrying out its lawful duties. These officials said the effects of such a ruling might establish a precedent actually courting violation of the established laws protecting the health and safety of the miners.

A loss of $75,000 was suffered Oct. 28 by the Maumee Collieries Co., owners of the Oak Grove Mine, near Sullivan, when the tipple burned to the ground. Fire departments from surrounding cities saved the other buildings.

All records for coal production in the older mines of Indiana were broken recently when the Twin mine, owned and operated by the Linton Summit Coal Co., at Linton, hoisted and loaded in eight hours a total of 3,054 tons of coal. This mine was sunk back in 1902 and miles upon miles of coal have been loaded from the mine, but not in its history, or the history of any of the other first mines of the state, has such an eight-hour production been recorded. The mine employs about 400 men.

Somerville Mine No. 1, Somerville, was damaged to the extent of $50,000 Nov. 3, when fire destroyed the tipple. Defective wiring in the weighroom is blamed for the fire. Clem J. Richards, Terre Haute, president of the General Fuel Corporation, owner of the mine, has announced that work on rebuilding the plant will be begun at once. According to Mr. Richards, the mine was working at capacity at the time of the fire, producing an average of 2,500 tons a day, with 300 men employed. He said that operations probably would be resumed within two months.

## IOWA

Negotiations are still in progress for the amalgamation of several of the larger mining concerns of Polk County. Representatives of the Norwood-White, Pershing, Shuler and Scandia companies have been in session, but it was stated following the meeting that completion of the merger is still some distance in the future.

## KANSAS

The international United Mine Workers' commission which recently, at the behest of President Lewis, settled the supply strikes in five southeastern Kansas mines, will return soon to investigate a dispute which followed the return to work of striking miners at the Western Coal & Mining Co.'s mine No. 21, operated by Fern & Lyons. The operators fined the men $1 a day each for the five days they were on strike.

## KENTUCKY

Justin Potter, of the Nashville Coal Co., producers, jobbers and sales agents for mines, rode to Louisville on Nov. 10, from Nashville, Tenn., driving his own airplane in 1 hr. 30 min., returning the following day after a visit to the company's local office. Potter was an army aviator at Kelly Field, San Antonio, Texas, during the war and recently bought a plane for quick service between Nashville, the offices in Louisville and mines in the western part of Kentucky.

The West Kentucky Coal Co., of Sturgis, the largest company in the western Kentucky field, with about twenty-five mines, has moved sixteen barges of coal of 600 tons each from Caseyville, south. This was the first river movement that the company has made in several months, due to low boating stages. The coal will be delivered at Memphis, Vicksburg and Greenville, on the Mississippi River.

C. E. Reed, secretary of the West Kentucky Coal Bureau, Louisville, was recently elected treasurer of the Louisville Lion's Club at its annual election.

After being out of the Middlesboro field as a coal buyer for about two years the Southern Railway Co. is again buying coal in that section and is reported to be drawing about thirty cars a day. This company appeared to have a falling out with the Louisville & Nashville R.R. over a rate on hauling coal over L. & N. tracks to its own lines and quit the field.

The Virginia Harlan Coal Corporation, Walter W. Liddle, secretary-treasurer, announces the removal of its main offices from Pineville to the mines located at Whipple, Kentucky; post office address, Balkan, Bell County.

## MARYLAND

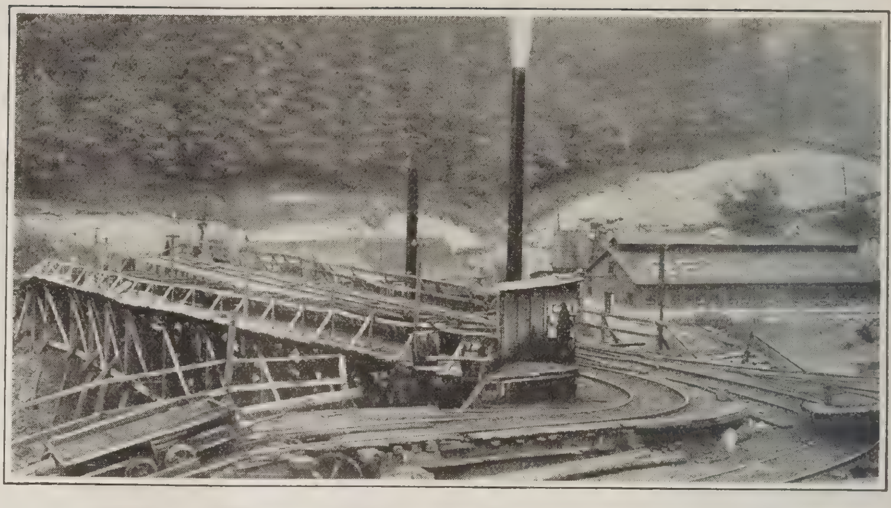
Ocean mine of the Consolidation Coal Co., at Midland, at one time known as the largest bituminous mine in the world, has started to operate after a shutdown of two years. A force is on the outside rebuilding the tracks and a force inside is laying rails a distance of over two miles from the mouth of the slope. As the new road is laid the shipping of coal will be started and a hundred or more men will be employed. The whole plant, inside and out, will be operated by electricity.

## MINNESOTA

The City Purchasing Agent of Minneapolis is taking bids until 3 p.m. Nov. 25 for furnishing for the Board of Education 18,200 tons of coal. A certified check for 3 per cent must accompany bids.

## NEW YORK

The Buffalo Chamber of Commerce has passed a resolution urging that the present controversy between coal operators and miners be permitted to go to its natural conclusion, so that an artificial increase in the cost of anthracite may not result from interference, as has been the case in previous strikes.



**Rex No. 1 Mine, La Follette Coal & Iron Co., La Follette, Tenn.**

Trips pulled out through the slope, cross the trestle, then descend on the track, seen to the left in the picture, to the tipple, which is located several hundred feet down the hollow. The smokestacks are on a small boiler plant which supplies steam for the bath house and to operate the slope hoist. The bath house is the building with the "Rex Coal" sign on the roof. At the present time the production of 600 tons of coal per day from the Rex No. 1 mine is about the only activity of the La Follette Coal & Iron Co. The beehive coke ovens and blast furnace have been down for some time. J. E. Hendren is general superintendent of the three coal mines owned by the company.

## OHIO

The Plum Run Mine of the United States Coal Co., at Bridgeport, resumed operations Nov. 12 after having been idle since spring. It employs 1,225 men when running full.

Lee Lewellyn, general manager of the Houston Coal Co., Cincinnati, resigned his position effective Jan. 1, 1926, when he will return to the Pittsburgh Coal Washer Co., of Pittsburgh, Pa.; one of the leading concerns engaged in designing, manufacturing and installing coal-handling and coal-preparing plants of all kinds. Mr. Lewellyn has been with the Houston Coal Co. for the past two years.

The Ohio district of the United Mine Workers declares that it has been appealed to in an effort to help solve the financial crisis that marked the attempt to operate the Goat Hill mine, at Amsterdam, Jefferson County, on a co-operative basis. It was said $60,000 was needed. The union said it would have nothing to do with the operation.

Dumpings on the Hocking Valley Ry. docks at Toledo for the week ending Nov. 11 were 235,553 tons, which is a record for a week at this season. During the month up to the 11th the dumpings were 380,848 tons. During the season up to Nov. 11 the docks handled 7,655,318 tons, as compared with 6,140,636 tons during the corresponding period last year.

In the hearing before Justice M. L. Shores of the claim of 218 miners employed by the Cleveland & Western Coal Co., at the Franklin mine, in Belmont County, who sued for wages aggregating about $14,000, a decision was rendered for the plaintiffs. The miners sued for the wages after the operating company had sued the men for damages caused by an unauthorized strike. The decision will be appealed by the company.

## OKLAHOMA

Tom Lidell, Robert Stenhouse, William Croy and Earl Franklin, all striking union miners, whose actions were held directly responsible for the sending of state troops into the coal fields of the Henryetta (Okla.) mine district last June, were acquitted Nov. 9 for the second time of the charge of rioting, according to word received from Okmulgee. The charge was made following a fight between Lidell and Andy Meitus, working as a non-union miner for the Crowe Coal Co. Meitus was admitted to citizenship last week. In the trial it was brought out that he had lived at Henryetta twenty years before applying for naturalization papers.

Osage Mine No. 5, at Krebs, has opened for work with a fair-sized force of workmen. The mine is one of several in this field which have opened up on the 1917 scale since the decision of Federal Judge R. L. Williams prohibiting the presence of large forces of pickets at mine entrances. This mine had been closed since the general strike in District 21, called on Sept. 1 by William Dalrymple, district president of the United Mine Workers.

## PENNSYLVANIA

President Calloway of the Buffalo & Susquehanna Coal Co. last week addressed a letter to the company's striking miners at DuBois, calling on them to go to work and promising them full union wages till existing contracts are filled, if they would resume work on or before Nov. 16.

Pickands, Mather & Co., of Cleveland and Buffalo, have completed a coke plant at Erie, and have 50 ovens already in operation.

The McDonald Coal Co., a Pittsburgh corporation, is held by Federal Judge F. P. Schoonmaker to have no claim against the internal revenue department for $82,255.13, return of which was sought by the coal company for excess income tax. The judge said the company had not filed a waiver as required by law. He also decided there was not sufficient evidence.

The opening of the mines of the Buffalo & Susquehanna Coal Co. at Sagamore, under a lease to the Sutter-Rinn Coal Co., is held to be a violation of agreement and the union miners have entered a protest against it. They have also undertaken to stop the eviction of union miners from company houses which may be wanted for new miners.

The Northwestern Mining Co.'s operations of the Dagus (Erie) mines, which have been suspended since Sept. 1, have resumed operations with a force of 500 men.

John C. Graham, of Butler, has sold 500 acres of coal land in Sligo Borough and Toby township to the Standard Coal & Coke Corporation, Chicago, for about $75,000. The purchasers have extensive mines in half a dozen states and are supposed to be preparing to enter the Eastern trade in a large way at an early date. Heavy equipment outlays are expected to be made soon.

After a shutdown for more than six months, the Sonman shaft mine at Portage, operated by the Sonman Shaft Coal Co., has resumed operations. This mine is working under the Jacksonville scale and employs about 150 men.

For a consideration of $650,000, the Elk Hill Coal & Iron Co., a subsidiary of the Scranton Coal Co., has acquired the Mount Pleasant colliery in Scranton from Mrs. Kate Pettibone Dickson, of Wilkes-Barre, widow of Alan Dickson, a native of Philadelphia. The sale is covered by a mortgage, payable within one year. The sale involves the transfer of 227 acres of coal land and 96 acres of surface property, including the site of the Mount Pleasant breaker. For a number of years the property has been operated by the Elk Hill company on a lease from Mrs. Dickson. The property has been in the hands of the Pettibone family for almost seventy-five years. Mrs. Dickson is the sole survivor of Payne Pettibone, who made his home in Wyoming, Pa.

Loadings in the central Pennsylvania coal district approximated 72,000 cars in October, the maximum for this year, against 67,000 in October last year. According to reports from Altoona, 100 idle mines in that district have resumed operations this fall. Much of the demand is for prepared sizes for New England states.

The new tipple at the Ella mine of the Hillman Coal & Coke Co., on the Monongahela River, near Pittsburgh, has been completed.

Bituminous coal (revenue) transported by the Reading Company during September, 1925, totaled 1,748,985 gross tons, compared with 1,404,233 tons in the corresponding month of last year.

Boiler houses of the Lehigh Valley R.R. at different shops along the system have been using culm for fuel during the past few weeks. Boiler rooms at many of the breakers and mines also have been burning culm since the strike got under way.

The Meadowbrook Coal Co., at Dunmore, which is owned by Scranton men, is making extensive improvements to its properties so that when the mine suspension ends everything will be in readiness to produce the maximum amount of coal. Last May the company purchased the John J. Boland Coal Co.'s interests in Dunmore. Recently the same concern tried to buy the Kearney & Brown operation at Dunmore but when officials of that firm declined to sell outright arrangements were made whereby the property was taken over on a lease. Two score of men have been employed in making repairs to the property. These include the construction of a large concrete pit where coal from the mines will be dumped after being run through the rollers and crushed to the necessary sizes. After the coal has been prepared it will be carried by conveyor lines to the breaker, where it will pass through the chutes for distribution to the coal pockets.

**Soft Drink Stand, Edgewater, Ala.**

During the last few years, particularly since the advent of national prohibition, the consumption of ice cream and soft drinks has increased tremendously. In some mining towns the commissary or drug store are the points where the populace seeks to quench its thirst. At Edgewater, however, the Tennessee Coal, Iron & R.R. Co. has erected this attractive brick building for the express purpose of dispensing soft drinks and commodities or necessities of a similar nature.

The H. C. Frick Coke Co. has fired the Dorothy plant in the Latrobe district. The plant is now being electrified, but resumption of the mine will not interfere with these improvements.

J. B. Nessle, once general coal and ore agent, New York Central lines, has been made traffic manager of the Pittsburgh & Lake Erie R.R.

The "horseshoe" of the old D. & H. gravity railroad, near Seeleyville, in Wayne County, is again the scene of much activity after being idle for years. There are enormous piles of culm near this place since the old railroad was abandoned and Sweeney Bros., of Scranton, are now engaged in removing the coal to railroad cars for shipment to a concern in New York State. This firm is said to have obtained rights to the culm reserves two years ago and has been holding them in case need for fuel developed in an emergency. It was necessary to cut through a hill and lay a track almost a half a mile long so that two steam shovels could load the cars. It is estimated that nearly a million tons of culm will be taken from the dumps before the supply becomes exhausted.

To facilitate the unloading of coal and coke supplies from upriver points, the Weirton Steel Co., Weirton, W. Va., on the Ohio River, has given a $750,000 contract for the construction of a concrete dock with loading and unloading apparatus. It will be completed by next summer.

Governor Pinchot has appointed John J. McCall, of Shamokin, as a member of the anthracite mine inspectors' examining board.

The Chartiers Creek Coal Co., one of the largest independent coal companies in Washington County, resumed operations Nov. 16 at its East End Mine, near Canonsburg, after several months' idleness. The Jacksonville wage scale will be paid, it is said.

Suit has been filed in U. S. Court by the Berwind White Coal Mining Co. against the government for the recovery of more than a million dollars. The company claims the money is due for soft coal sequestered by the President during the world war for the use of the navy. According to the company the government took 184,746 tons of coal for which the navy fixed compensation at $740,000. The Berwind White company demanded $1,591,580 for the fuel, basing its claim on the existing value for export coal. The navy paid 75 per cent of the amount fixed by the government and left the matter open for final determination by the courts.

The coal tipple at Reitz No. 3 mine, owned by the Reitz Coal Co., near Johnstown, was destroyed by fire during the past week. The blaze was mysterious, as there was no one about the mine at the time.

Approval of the merger of the Armerford Coal Mining Co. and the Margaret Coal Mining Co., both operating in Indiana County, has been announced by the Bureau of Corporations at Harrisburg. Capital stock of the merged companies, which will be known as the Armerford-Margaret Coal Co., is $260,000. The principal office is in Pittsburgh. D. E. Thompson, Blairsville, is president; D. R. Tomb, Indiana, secretary, and C. F. Armstrong, Leechburg, treasurer.

John F. Irwin, a coal operator of Latrobe, bought from the First National Bank of Pittsburgh the dismantled Baggaley coal plant in the Latrobe district without the company houses. He started immediately to prepare the plant for coke making. Although the greater part of the coal at the old Baggaley mine has been taken out, a large quantity remains in the headings and in portions of the mine lost through falls. This will be reclaimed by stripping. The purchase includes 370 ovens, of which 100 are being fired.

The Snowdon Coke Co. has begun the erection of a steel 3-track tipple and steel trestle approach at the Mt. Hope Mine, at Linn, Fayette County. The tipple will be equipped with shaker screens, picking tables and loading booms and it will be possible to produce lump, nut and slack or any combination thereof. The foundation is nearly finished and the plant is expected to be completed next spring. Heretofore this plant has shipped coke exclusively.

The Republic Iron & Steel Co. has resumed full operation at the Republic Mine, in the Connellsville region, after more than a year's idleness. Two hundred and fifty ovens have been blown in.

## UTAH

The Public Utilities' Commission has granted the Utah Railway Co. permission to purchase the line, nearing completion, of the National Coal Railway Co. The new line is a few miles long and is being constructed for the purpose of developing new coal properties owned by five companies, all of Salt Lake City.

Three miners were killed by falling coal in Carbon County mines during the week-end of Nov. 1.

The federal government is contesting the right of the state to sell a section to which the state gave deed on July 3, 1905. The land in question is a section just off Huntington Canyon in Emery County. The land was sold at a private sale to Henry C. Lund in January, 1902. It sold at $2 an acre and the mineral rights were not reserved. In June, 1902, the contract to purchase the land—the sale was by time payments—was transferred to P. J. Quealy of Kemmerer, Wyo., prominent coal operator. Mr. Quealy received his patent in July, 1905. The federal government claims that it was known at the time of the sale that the land was of mineral character and, therefore, should not have been sold.

## VIRGINIA

The tipple of the Empire Collieries Co., at Pulaski, was burned Sunday afternoon, Nov. 8, entailing a loss of $60,000. The fire is believed to have started from defective electric wiring. As a new tipple and breaker have nearly been completed at the mines, operations will be interrupted only about three weeks. It is understood the destroyed tipple will not be rebuilt.

## WASHINGTON

The California-Alaska Corporation expects to spend $500,000 immediately in reopening and developing the Snoqualmie coal mine, situated twenty-four miles from Seattle. The property is owned by Charles B. Niblock, of Seattle, and embraces about 2,000 acres. The California-Alaska Corporation has a 99-year lease on the property. Development was begun before the World War by the Western Coke & Collieries Co., but the war plunged the company into financial difficuties, it was said, and the promoting head died, and development was halted after approximately $300,000 had been spent. It is expected that the mine will produce 2,000 tons of coal a day within the next ten months. There are forty-five coke ovens on the ground, which will be increased to fifty, and $150,000 will be spent in installing a coal washing plant.

## WEST VIRGINIA

The Crab Orchard Improvement Co. is making improvements on an extensive scale at its mines at Eccles, in the New River field, as a result of which it will be able to increase the number of its employees and produce more coal. Much additional equipment is being installed including 400 mine cars, 11 gathering locomotives, 2 mining machines and 1 motor generator set. The No. 6 tipple also is being equipped with shaker screens for preparing domestic coals. It will be necessary to engage about 75 additional loaders and a proportionate number of other employees.

A. B. Rawn, for many years identified with the coal business of southern West Virginia, has severed his connection with the Kingston-Pocahontas Coal Co., of which he was vice-president and general manager, to assume the active management of the Wilson Sand & Supply Co. Mr. Rawn has acquired the interests of Charles R. Wilson in that company, the transfer involving approximately $600,000, it is stated.

Six new coal companies with an aggregate capital stock of $425,000 were formed in West Virginia in September: The Vermillion Coal Co., of Orgas, capitalized at $25,000; Poca-Pack Coal Co., Bramwell, $200,000; Fort Branch Collieries Co., Logan, $50,000; Harman Thacker Coal Co. Williamson, $25,000; Columbus Darby Coal Co., Keith, 1,000 shares of no par value; the Logan Block Coal Co., Huntington, $125,000. The Brown Coal Co. has increased its capital stock from $125,000 to $300,000, and the Bentree Coal & Oil Co. has increased its capital stock from $50,000 to $100,000. Permission has been granted to the Blue Ash Coal Co., of which Charles Litkowski is secretary, at Cincinnati, Ohio, to transact business in West Virginia.

The Carnegie Coal Company has been given five more days to answer the equity suit filed by Harry F. Sinclair, the oil man of New York, in which he is asking to recover $125,000 and have the temporary receivers of the coal company removed. The answer was to have been filed on Thursday.

The tipple of the J. P. Keeley Coal Co.'s Whiteman mine, near Wilsonburg, was destroyed in an incendiary fire on Nov. 11. The loss is several thousand dollars. The mine was nonunion.

The Sitnek Coal Mining Co. has erected a new wooden tipple with a steel frame at Katherine mine, near Lumberport, Harrison County, equipped with loading booms and picking tables. The tipple has a capacity of 1,500 tons daily.

## WYOMING

The Gunn-Quealey Coal Co. is prospecting its Sweetwater vein, in the Rock Springs district with diamond drills, testing the area and depth. At present one of the outfits is drilling a short distance northwest of the Quealey (Sweetwater) properties of this company.

## CANADA

The commission appointed to investigate the coal industry of Nova Scotia inspected the collieries of the New Waterford district last week and also made an examination of the housing and living conditions of the miners. On Nov. 10 they inspected the coal piers at Sydney and Louisburg to ascertain the shipping facilities of the British Empire Steel Corporation. The first public session of the commission for the hearing of evidence was held in the Court House at Sydney Nov. 11, the first part of the sitting being occupied with the reading of a brief prescribing the case of the miners.

## Obituary

**William J. Wickes**, 63, organizer of many industrial concerns in Saginaw, Mich., and one of the best known manufacturing men in Michigan, died Nov. 1 of heart trouble in New York City, where for the last two years he had been directing the affairs of the Wickes Boiler Co. and other enterprises in which he was interested. At the time of his death he was president of that company, treasurer of the Wickes Brothers, president of the Consolidated Coal Co., and the United States Graphite Co., director and vice-president of the Bank of Saginaw, vice-president of the Eastwood Plate Glass Co., a director of the Ruggles Truck Co. and was interested in many other concerns. He was a pioneer in the development of the coal districts in the Saginaw Valley. During the war he was chairman of the board of directors of the Saginaw Shipbuilding Co., which turned out many ships. He leaves his wife, three sons, three daughters and one brother, Harry T. Wickes, of Pasadena, Calif.

**Charles A. Fagan**, well-known Pittsburgh lawyer, died at his home last week. He was a director of the Anthracite Coal Co. of Wilkes-Barre, the Logansport Coal Co. and the Gracement Coal Co.

## Coming Meetings

**West Virginia Coal Mining Institute.** Fall meeting, Nov. 24 and 25 at the Hotel Morgan, Morgantown, W. Va. Secretary, R. E. Sherwood, Charleston, W. Va.

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering.** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

**American Mining Congress.** Twenty-eighth annual convention, Dec. 9-11, Washington, D. C. Secretary, J. F. Callbreath, Munsey Bldg., Washington, D. C.

## Recent Patents

**Mining and Loading Machine**; 1,549,699. Walter J. Wilson, Sewickley, Pa. Aug. 11, 1925. Filed Dec. 19, 1921; serial No. 523,451.

**Clamshell Bucket**; 1,549,538. Edward L. Harrington, Erie, Pa., assignor to G. H. Williams Co., Erie, Pa., Aug. 11, 1925. Filed Feb. 25, 1925; serial No. 11,514.

**Cutter Arm for Mining Machines**; 1,549,654. John W. Dillon, Masontown, Pa., Aug. 11, 1925. Filed Sept. 27, 1924; serial No. 740,372.

**Flotation Apparatus**; 1,549,492. Max Kraut, Los Angeles, Calif. Aug. 11, 1925. Filed April 16, 1923; serial No. 632,369.

**Valve for Powdered Fuel, Weighing Distributing System**; 1,549,966. A. J. Grindle. Chicago, Ill., assignor to Grindle Fuel Equipment Co., Harvey, Ill. Aug. 18, 1925. Filed Feb. 1, 1923; serial No. 616,258.

**Coal-Pick Mounting**; 1,549,974. Charles C. Hansen, Easton, Pa., assignor to Ingersoll-Rand Co., Jersey City, N. J. Aug. 18, 1925. Filed Nov. 12, 1924; serial No. 749,373.

**Charcoal Briquette and Process of Making Same**; 1,550,034. Walter R. Leuenberger, A. and Wm. T. Dumbleton, Tacoma, Wash., assignors to Carbon Briquet Co. Aug. 18, 1925. Filed Dec. 23, 1922; serial No. 608,774.

**Reversible and Adjustably Feeding Rotatable Ring for Cutting Coal**; 1,550,088. George W. McNeil, Denver, Colo. Aug. 18, 1925. Filed Aug. 12, 1924; serial No. 731,589.

**Core Breaker for Mining Machines**; 1,550,669. Newton K. Bowman. Bowdil, Ohio. Aug. 25, 1925. Filed Jan. 21, 1922; serial No. 530,918.

**Coaling Station**; 1,550,891. Henry J. Eck, Chicago, Ill., assignor to Roberts & Schaefer Co., Chicago, Ill. Aug. 25, 1925. Filed Sept. 25, 1924; serial No. 739,762.

## New Companies

**The L. H. & W. Coal Co.**, Henderson, Ky., capital $28,000, has been chartered by Henry and U. M. Gager and Harry B. Jennings.

**The Spavinaw Mining & Coal Co.**, of Tulsa, Okla., with a capital of $15,000, has been incorporated. The incorporators are Asbery Burkhead and J. H. Callahan, both of Tulsa, and J. M. Ramey, of Verdigris.

**The Prospect Park Coal Co.**, 3702 West Main Street, Belleville, Ill., was incorporated Nov. 1 with capital of $9,600 to mine and sell coal. The incorporators are Henry Lilburn, E. J. Bryant and William Van Hoose.

**The Saline River Coal Co.**, Equality, Ill., has been incorporated with capital of $75,000 to mine and produce coal and manufacture all byproducts of coal. The incorporators are Charles H. Guard, Genevieve Guard and George C. Guard.

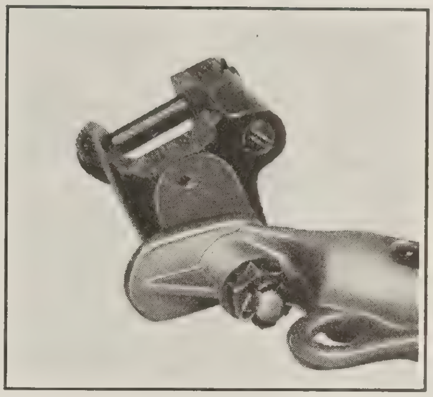
**The Tip Top Coal Mining Co.**, Portsmouth, Ohio, has been chartered with an authorized capital of $100,000 to mine and sell coal. Incorporators are B. F. Vincent, H. C. Stalder, Ruby Praither, Alice V. Arganbright and Joseph T. Micklethwait.

# New Equipment

## Trolley Harp Has Grease Reservoir on Side

Geo. L. Birch, chief electrician of the Southern Mining Co., Balkan, Ky., has patented and is marketing the self-lubricating trolley harp shown in the accompanying illustration. One side of the harp contains a grease chamber. This communicates with a duct which leads through the axle, to the bearing. The chamber is formed by a tapped, ⅝-in. hole which is capped at the bottom by a slotted-head, screw plug.

One filling of the grease chamber is sufficient to lubricate the trolley wheel for several days. It is intended that at regular intervals, the motorman should give the screw plug a turn in order to force a supply of grease into the axle from which position it tends to feed gradually to the bearing. The bottom of the harp is fitted with a wearing plate which can be renewed at small cost. This device, known as the "Birch Self-Lubricating Trolley Harp," fits any standard pole socket, as illustrated. It is manufactured for Mr. Birch by the W. J. Savage Co., Inc., of Knoxville, Tenn.



**Grease Enters Through the Axle**

One filling of the reservoir with grease will lubricate the trolley wheel for several days. At intervals depending on the service, the screw plug should be given a few turns to force the lubricant up into the axle.

## Small-Sized Anthracite Is Stoked by Spreading

Utilization of the small anthracite sizes has always represented a problem not only to the mine but to industrial plants as well. Recently Albin A. Norrman and Alfred E. M. Shafer, of Tamaqua, Pa., have developed a stoker for burning these small sizes. As may be seen in the accompanying illustration, this utilizes both the principles of the chain grate and that of spreading, which is the ordinary method by which anthracite is fired by hand.

This stoker known as the "Turbu-

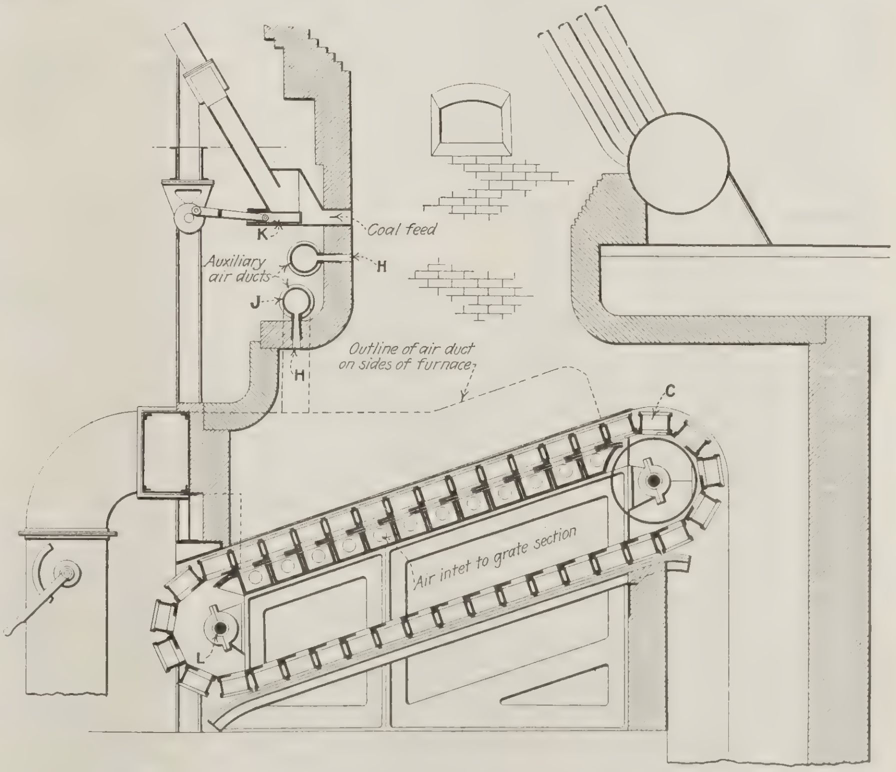

K
Coal feed
Auxiliary air ducts
H
J
H
Outline of air duct on sides of furnace
Y
C
Air inlet to grate section
L

**Fig. 1—Cross Section Through Turbulator and Furnace**

Hollow grate bars extend entirely across the furnace. These are linked together forming a forced-draft, chain grate that is inclined against the direction of travel. Coal is fed through the front furnace wall and falls upon the grate near its middle. Much of the fuel is ignited by the time it reaches the grate.

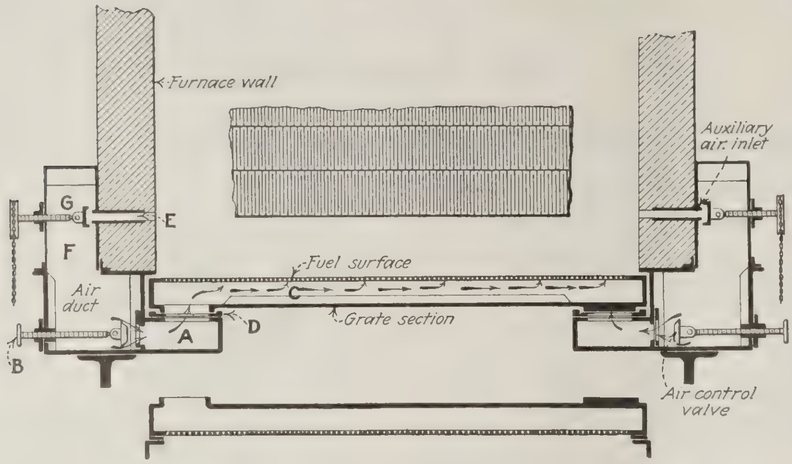


Fig. 2—Detail of Grate Bars and Air Control

Forced draft enters each grate bar separately from the air duct or wind box on the side of the stoker. Pressure of this air is controlled by a series of valves with stems extending outside the air chamber. The exact intensity of draft desired at any point in the fire may thus be obtained.

lator" consists essentially of a series of grate bars extending transversely across the furnace. These are connected together to form a continuous surface, which is inclined toward the boiler front. A series of chambers, *A*, conduct air for combustion to each section of the grate. They in turn being connected to a common air duct placed along the side of the stoker. The quantity of air entering each grate section is controlled by a valve, *B*. A wearing plate, *D*, is interposed between the bottom of the grate sections and the air chamber. The various grate sections are fastened together and pass as a chain over sprockets at both front and rear of the grate, the front sprocket being the driver. The rear sprocket carries a cylindrical sheet-iron drum which prevents ashes from dropping through the grate. Additional air for the combustion of the fuel is supplied through openings in the side of the furnace, *E*, the air passing through being regulated by the valve, *G*, within the air duct on the side. Another source of auxiliary air is that entering through the openings, *H*. This air is supplied to pipes, *J*, by a connection from the top of the wind-box on each side of the stoker. This furnishes air for combustion above the grate.

Fuel is fed to the furnace from a small hopper by means of plungers, *K*, connected to short-stroke cranks driven through a reduction gear from the main shaft, *L*. By feeding the coal to the furnace at this point, it is caused to pass through the hot gases which allows the fine particles to burn in suspension and the larger ones to become ignited before reaching the grate surface proper.

Some of the advantages claimed for this stoker are an ability to sucessfully burn large quantities of coal per unit of grate surface per hour; exceptional capacity, due to the fuel being ignited before reaching the grate and a rapid pick up of rating, due to the large quantities of fuel resting upon the grate.

## Industrial Notes

**St. Louis Power Shovel** Co. has been formed to manufacture and sell the Conway shovel, formerly handled by the Conveying Weigher Co. These shovels, under the direction of Hitchcock and Tinkler, are digging the Moffat Tunnel, near Denver. The shovels were originally developed by the National Lead Co., at its mines in the Flat River lead district. John L. Clarkson is president and Douglas C. Corner, secretary and general manager, of the new company.

**The Electric Service Supplies Co.'s** Chicago office has removed from the Monadnock Building to the Illinois Merchants Bank Building, 230 South Clark St.

**Porter & Ross, Inc.,** of 30 Church Street, New York City, announce the opening of a new branch office in the Coal Exchange Building, Wilkes-Barre, Pa., in charge of Neil Cheshire. This company acts as sales agent for the American Enameled Magnet Wire Co., Eureka Copper Products Corp., Green Equipment Corporation, John C. Dolph Co., Dutchess Insulation Co., Mutual Foundry & Machine Co., Specialty Device Co. and the Kaniksu Cedar Co.

**J. W. Swaren,** Mem. Am. Soc. C. E., has opened an office in the Peoples Life Insurance Building, Washington, D. C., where he will specialize in the preparation of engineering data for submission before federal departments and bureaus. Prior to the war Mr. Swaren had a consulting practice in San Francisco, Cal. He entered the engineer branch of the army in 1917 and served overseas with the Sixth Division, Regular Army. He was discharged from Walter Reed Hospital, Washington, D. C., and became general sales manager and engineer for the Duriron Co., of Dayton, Ohio. Afterward, he was appointed engineer in the Treasury Department at Washington, resigning after two years to enter private practice. For the past two years he has been engaged in the appraisal of several large groups of coal and iron ore mines, including the railways and hydroelectric systems serving the properties. His offices in the Union Trust Building, Cleveland, Ohio, will be maintained. Prior to the war Major Swaren was a frequent contributor to the technical press.

Concrete floors which have become granular are always a source of annoyance and expense. "Rockote," a product manufactured by the **Goheen Corporation** of New Jersey, paint engineers, Newark, N. J., is said to prevent "dusting" and provides a hard, dustproof surface to such floors. It is a scientifically prepared chemical liquid which dissolves the surface of the floor and recrystalizes on drying to a permanent rocklike surface. A descriptive pamphlet on this product and its various uses will be sent by the manufacturer on request.

**The Chicago Fuse Mfg. Co.,** of Chicago, manufacturer of Union and Gem fuses and Union outlet and Gem switch boxes, has moved its Detroit office from the Transportation Building to 429 Wayne Street.

## Trade Literature

**Hardinge Super Thickener and Clarifier.** Hardinge Co., York, Pa. Bulletin No. 30. Pp. 12; 8 x 10½ in.; illustrated. Describes operation, capacity, density of discharge, clarity of overflow and filtrate, etc.

**The Delta-Star Electric Co.,** Chicago, Ill., has issued a net price-list on standardized outdoor substations, to take effect Oct. 15 and remain in force until March 15, 1926.

**Heavy Duty Stokers** (Type K). Marion Machine Foundry & Supply Co., Marion, Ind. Bulletin No. 225. Pp. 12; 9 x 11 in.; illustrated. The semi-mechanical and hand-operated stokers are also described.

**C-H Magnetic Clutches.** The Cutler-Hammer Mfg. Co., Milwaukee, Wis. Publication P-11. Pp. 16; 8½ x 11 in.; illustrated. Describes the uses of these clutches on synchronous motor drives where the starting is severe.

**Freeman-Riff Co.,** Terre Haute, Ind., has issued a folder illustrating and describing the coal handling, weighing and storing equipment at the new power plant of Purdue University, Lafayette, Ind.

**Automatic Switching Equipment for Reclosing Service on 275-Volt D.C. Circuits.** General Electric Co., Schenectady, N. Y. Bulletin GEA-24, superseding Bulletin 47717-B. Pp. 28; 8 x 10½ in.; illustrated.

**High Tension Indoor Universal Unit Type Bus Bar Supports; Adjustable Top and Bottom.** Delta-Star Electric Co., Chicago, Ill. Bulletin No. 31-B, superseding Nos. 31 and 31-A. Pp. 48; 8 x 10½ in.; illustrated, tables.

**Centrifugal Pumps.** De Laval Steam Turbine Co., Trenton, N. J. Catalog B. Pp. 72; 8½ x 11 in.; illustrated. Engineers who have to do with the pumping of water, whether against low or high heads or in small or large quantities, should find much of interest in this publication.

## Publications Received

**A.S.T.M. Standards Adopted in 1925.** American Society for Testing Materials, Philadelphia, Pa. Price, $1.50. Pp. 117; 6x9 in.; tables. Contains 36 revised or newly adopted standards of the society and forms the first supplement to the 1924 issue of the triennial book of standards.

**The Regularization of Employment,** by H. Feldman. Harper & Brothers, New York City. Price, $3.50. Pp. 437; 5½x8 in.; illustrated.

**Architecture and Anthracite.** Anthracite Coal Service, Philadelphia, Pa. Pp. 18; 8½x11 in.; illustrated. Contains information and practical suggestions toward providing architecturally satisfactory and economically sound results in designing and specifying for heating installations, with an article on the appropriate use of anthracite.

**The Pyrotannic Acid Method for the Quantitative Determination of Carbon Monoxide in Blood and in Air,** by R. R. Sayers and W. P. Yant. Bureau of Mines, Washington, D. C. Technical paper 373. Pp. 18; 6 x 9 in.; illustrated.

**Procedure for Establishing a List of Permissible Storage-Battery Locomotives for Use in Gaseous Mines.** Bureau of Mines, Washington, D. C. Schedule 15. Pp. 10; 6 x 9 in. First edition, November, 1919. Describes character of tests, conditions under which storage-battery locomotives will be tested and fees.

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COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
E. J. MEHREN, *Vice-President*

Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. DAWSON HALL
*Engineering Editor*

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## Again Mr. Lewis Speaks

THE PRESIDENT of the United Mine Workers in a letter to Mr. Coolidge once more makes threats of a general strike that will involve not only the operators who have seen fit to make private arrangements with their men outside of the Jacksonville agreement but those also, who, operating a long way from the non-union field, have been able, with great difficulty it is true, to pay the union scale.

There are moralists who deplore the situation in the former union fields which signed the Jacksonville agreement and have started their mines with such of their men as are willing to recognize the necessity for a lower wage, but what can these say of Mr. Lewis, who, getting from Illinois, Indiana and Ohio all that the Jacksonville agreement calls for, proposes to call a strike to bring out the men in those states where every detail of the Jacksonville agreement has been complied with, those states, indeed, whose pressure caused the agreement to be made.

No one has criticised Mr. Lewis for trying to call a strike in the Fairmont field. No one could criticize him for calling one anywhere where the break with the union has occurred. But the men in those regions realize that they are getting the only wage economically possible under present conditions and are likely to turn a deaf ear to Mr. Lewis.

A few weeks of high production and higher prices, resulting from the anticipation of a strike may raise prices and give rise to the idea that the old wage rate can be paid, but the moment the assurance is attained that the coal bin will be kept full the old economic situation will reassert itself and the intervening territory between the non-union area of West Virginia and Kentucky and the coal fields of Illinois and Indiana will be back where it was before, and if meantime wages have been raised, the men in that territory will be deprived of work. Let us hope the men will sense this fact and meet it by resisting any attempt of Mr. Lewis to make them take part in a strike that is not to their interest.

## Unionism by Decree

LICENSING IS THE MOST effective form of unionism. It always creates a close corporation, one kept intact by legislative decree. Examine the facts of any licensed body whether of steam engineers, doctors, plumbers or steam fitters, and you will find a union, which may be acknowledged or merely existent without acknowledgment.

In the Pennsylvania anthracite region and in Illinois the miners have their union activities supplemented by the law that licenses them. If that law in Pennsylvania were removed there might be some hope of reopening the anthracite mines. There would, at least, be no legal obstacle such as now exists. The miners will not work nor will they let others work. They may be willing to accept other men's jobs at a lower rate than that at which they will work at their own, but they are able to prevent other men from taking their jobs. Their would-be successors would profit by the exchange, but the law forbids. A license is unionism enforced by legislative decree.

## What Can Coolidge Do?

THE MAN ON THE STREET and the press are patient, but every now and again the cry is heard "Why can't Coolidge do something?" Those who raise it haven't thought out what the President could do. Their minds are by no means clear on the subject, but they believe that a big strike that inconveniences the people can be settled in some way.

When Pinchot brought the previous strike to a termination he burned his fingers badly. He got the operators to make a concession which they had to hand on to the public. After all, if the strike was to be settled, that was about the only way to end it. The mine workers were insistent on getting something, and no appeals to reason or public convenience or patriotism could sway them.

But this time the operators are clear they can hand nothing on to the public, and if wages go up the mines must close. The public is looking to other fuels. So this time the operators are adamant and not to be swayed. They can't be scared, for nothing looks quite so terrifying as a wage increase.

Even Senator Borah's prospective plans for legislative regulation cannot be worse for the industry than to pay a wage that puts the cost of coal above what the public will pay for it. When a man faces a firing squad all the guns are equally menacing, and he is not afraid of any one of them. He bids fair to die any way.

But Coolidge is "doing something." He is being far more active than any of those who reproach him. He is making headway, and they are delaying progress. Those who buy soft coal and coke at his recommendation—especially, alas, those who introduce oil—are helping to effect a settlement. Those who hearten the mine workers with their outcries are the very persons who delay the settlement for which everyone is anxious. When the miners see they cannot stampede the public or the administration but that both are ready to fight it out if it lasts all summer, then there will be a settlement and not before.

The public and the administration were immensely impressed and shocked by what Great Britain did when it ended a strike by the offer of a subsidy. Instinctly everybody said: "Is that where we are tending? Can the unions force us to pay them subsidies? Do they venture to strike against us and hold us up for tribute?" In Great Britain the subsidies aid British mines to compete with foreign mines, but here a subsidy would help anthracite to compete with soft coal, coke, oil and gas. Just conceive of a subsidy to help one industry to hold back the progress of another!

Yet that seems to be the only thing the President and Congress can do unless we are ready to see the fight through. If it is not fought to a standstill now, it must be later. The union is committed to continued steps forward and no backward step. The only way to halt such progress, attained at public expense, is to firmly resolve that this time the matter shall be settled once for all by a finish fight.

What can Coolidge do? Nothing. What should he do? Nothing. The less he does in this matter to bring it to a settlement the sooner it will be settled. "They also serve who only stand and wait."

## The Appalachian Washboard

THE EASTERN Mountain States are corrugated like a washboard, and the mining communities that lie in the bottom of any one corrugation are pretty well segregated from those in every other. Here and there the corrugations are defective. Some river has broken through and made communication from one valley to another possible. But on the whole, connection has been difficult, the more so before the automobile and well-paved roads assisted communication.

Each valley is a good location for a live mining institute and should have one. But institutes are apt to have inbred notions unless there is a little travel. So when meetings are being held in other fields the denizens of the washboard territory should send one or more of their number to represent them and bring back word across the mountains of just what transpired and what was learned about the conditions in neighboring fields.

The valleys of West Virginia in earlier years were inhabited by people to whom the citizens of the nearest county were as unfamiliar as the people of England and Germany. These people had accordingly an extremely narrowed vision. The railroads changed matters a little but directed travel even more markedly to accord with drainage. Now with the construction of roads over the hills, travel is being made possible in all directions, but still it tends to follow the old roads and communities. To overcome all along the Appalachians, in Pennsylvania and West Virginia, the narrowing influences of the environing hills some effort should be made to forge the bonds between institutes and have delegates interchange visits at meetings.

## Light and Safety

SAYS BENJAMIN FRANKLIN, basing his statement perhaps on an old English story: "A little neglect may breed mischief: for want of a nail the shoe was lost, for want of a shoe the horse was lost, for want of a horse the rider was lost, for want of a rider the battle was lost, for want of the battle the kingdom was lost, and all for want of a horseshoe nail."

We may be sure that no one ever made just that diagnosis of the kingdom's misfortunes, and there were, of course, other reasons to which it could rightly be ascribed. That's the rub. We can usually find five or six reasons for any event and sometimes more, and if one of the causes had been absent all the others would have been insufficient to cause the accident. It is so with bad light or bad sight. Accidents are never ascribed to those causes, but it is certain that they are almost as important as carelessness in the causation of injuries.

If in every case of an accident the question were asked "Was bad light a contributing cause?" the answer would often have to be that it was. It is a question that should be asked. R. E. Simpson, an insurance safety man, has been asking it, and as a result of his inquiry he lists 18 per cent of the accidents as due to defective light or 108,000 serious accidents yearly. Commenting on this, one safety man said 50 per cent would not be an exorbitant figure for a case under his observation, and he was not a mining man, but was engaged in an industry where darkness need not be so important a factor as it will ever be in mining.

In many underground accidents imperfect light and vision have a part. To see a danger is to avoid it, and how many hazards there are that become manifest only when the light is strong enough to reveal them. Our mines need more light, and they will receive it.

## Our Domestic Coal Problem

WE MAY BE ABLE some day to find equipment that will make it possible for the average domestic consumer to burn fine high-volatile coal, that cakes, clinkers and smokes, and do it with efficiency and satisfaction but of reaching that ultimate goal we all have some doubts.

Perhaps, it would be better to contemplate the possibility of a central heating plant where a large furnace would supply some forty or fifty houses and would do it with powdered coal or with slack on stoker grates. The growth of the speculative builder, who thinks not in houses but in villages and communities, makes it possible that some day we may see the center, the chateau so to speak, in the village a central heating station and the houses of the citizens grouped about as little chatelets under the shadow of the seigniory. The power house being the largest building with an ornamental chimney could be made the outstanding feature of the community. In Canada central heating plants are quite common. They may be found also in nearly all large cities.

It would be possible to deliver coal to such a plant at minimum cost and to remove ashes from it more easily by far than from the cellars of the citizens. The coal would be properly and completely burned, yet withal fuel of the finest size would be used.

The houses would need no cellars unless that was desired for the storing of trunks, for laundries or for the keeping of vegetables. Here would be a considerable saving that would go far toward paying for the laying of piping and the building of the central heating station.

The saving in the cost of attendance on the furnace would be, of course, considerable. To the coal man, however, the feature that would commend itself would be the demand thus created for run of mine or slack coal.

Further development might make the central heating plant furnish not alone steam for the radiators and hot water but also cold air and ice-cold water. Such a plant might be run co-operatively, every household having a share in the central plant and a voice in its management. It could be separately incorporated and its shares distributed among the purchasers of dwellings or it could be held by them inalienably as running with the fee.

# Putting Efficiency Into Siberian Coal Mining Is Hard Job, American Engineer Finds

## First Efforts in Kuznets Basin Raise Daily Output per Man from One-Tenth of a Ton to More than One Ton and Give Encouragement for Russia's Future

**By Alfred Pearson, Jr.**
Consulting Engineer, Toledo, Ohio

PUTTING SIBERIAN coal mines on a basis of efficiency is a task the like of which no engineer faces in America. Yet it is not impossible. This conclusion is based upon an experience of two years in charge of the northern group of mines in the Kuznets Basin of Siberia. Antiquated equipment, a peculiar mining system, a working force made sluggish by Russian psychology and the natural handicaps which Siberia lays upon industry were not enough to prevent a new management from increasing the daily output per man in the Kuznets mines from one-tenth of a ton to more than one ton, and other improvements augur well for the future of the industry.

The Kuznets coal basin lies south of the city of Tompsk, Siberia. It is wedge shaped, about 80 miles wide, 250 miles long and adjoins the Telbas ore field which is supposed to be the most important iron deposit in Siberia.

While Telbas is destined to be the biggest coal customer of the Kuznets field, sales in the past have been made principally to the Trans-Siberian R.R. for steam coal, to the Ural metal plants for byproduct, gas and steam coals and to a small local domestic and miscellaneous industrial market.

Before the war an important part of the Kuznets output was shipped via the Ob River and its branches, not only to the Ural steel plants, but to the several important cities on the banks of the Tom and Irtish and to the port at the mouth of the Ob which is open to ocean traffic four months of the year. This provided a valuable route for coke shipments as coke is seriously degraded by long distance rail transport.

This field has been commercially worked for about 25 yr. Prior to the revolution it had in operation a dozen mines and numerous prospect holes had been driven. Since, due to the shrinkage of the market, work has been concentrated on four mines.

### KUZNETS COAL WILL DOMINATE

This coal field is so situated, that, as European Russia develops, it will be able to ship its products in competition with the Donetz Basin, the only coal field in European Russia of importance. The "Don" is already extensively worked out, its coals lie under much more difficult mining conditions than the Kuznets coals, and besides it is several times smaller than the Kuznets deposit. So the Kuznets field will some time dominate the Russian coal market. Even today, if the railroads could handle the coal at reasonable rates, certain Kuznets coals could compete with the best Welsh coal at the Baltic ports.

Russian labor is composed of both whites and Mongolians, the latter mostly Tartar. It must be understood that they all are only a generation removed from slavery, that they have been kept by the former government in absolute ignorance and illiteracy, and that the standard of life is about the same as that of the Southern "hill-billy" of the last generation.

This condition is aggravated by the fact that 90 per cent of the population lives at that standard and except in the larger cities the remaining 10 per cent, although living more pretentiously, actually attains only slightly

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The headpiece shows the No. 8 mine at Kemerovo with the tipple and fire observation tower in the picture. The dilapidated condition in which Mr. Pearson found the property is plainly evident. A great deal of timber is used in these mines but the growth native to the country is poor for the purpose.

This is the first of two articles by Mr. Pearson on Siberian coal mining and his experience with it. The second, treating of mining methods mainly, will appear in a forthcoming issue.

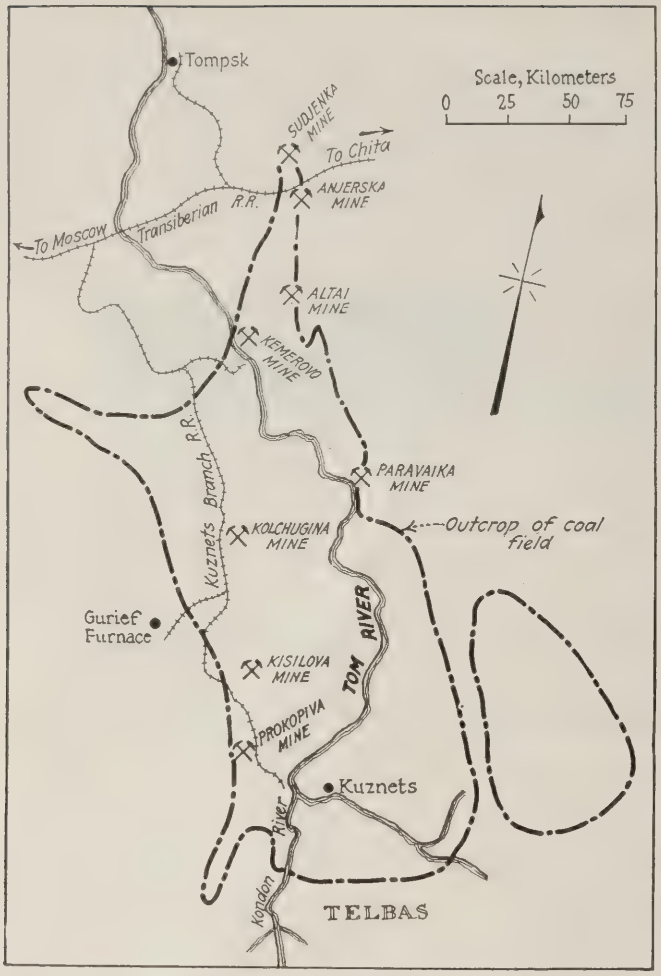


**Fig. 1—Kuznets Coal Field Map**

This shows the proximity of the coal region to the city of Tompsk on the one hand and the great Telbas iron mining field on the other. However, the Russian steel industry needs bolstering to make it a strong coal consumer.

greater comfort, hence these workers cannot possibly visualize any better standard of life than their present one. The worker, consequently, cannot be aroused to earn more, because he can see no use for more than he has.

To combat this indifference of the worker, the wage scales have been consistently set on a piece-work basis, so low as to force the men to put in a full day for a bare existence. It is said that before the war the foremen also used the lash to drive the men. The natural reaction of the worker now is to still further limit his production.

The labor union is a branch of the government. In theory the plants work open-shop, as membership in the union is not compulsory. In practice, however, it is so much to the interest of the men to belong, that well over 90 per cent are members.

Owing to the psychology of the men and the paternalistic industrial customs, the wage system is highly involved, contributing materially to industrial inefficiency, partly through increased overhead and partly because of the reaction of the operating officials who see only the money wage—really a small part of the labor cost.

I will illustrate the wage system, using a face miner as an example. I am obliged to use figures from memory, those marked "est." are items for which only estimates were ever available. The variables are the cash wages and the hospital charge which was a percentage of the payroll; in this case I use a figure which is extremely high for the country as a whole.

Total Wage

| | |
|---|---|
| Money average | $23 |
| House light, coal, water (est.) | 8 |
| Medical attention | 4 |
| Tools, clothing (including overhead) | 5 |
| Total for 120-hr. work month | $40 |

The piece-work system is applied to every class of work. This requires not only extra accounting and the consequent extra time keepers, but also, when applied to the repair shops and miscellaneous outside activities, a staff of estimators to set the rates for the smallest jobs. And this is not to mention the endless bickering which inevitably arises over wages. The custom of furnishing tools and working clothes calls for an extensive warehouse and staff.

One would imagine such a system would provide exhaustive and accurate cost figures; but the reverse is the case as the so-called Italian system of bookkeeping is employed. It deals with the person rather than the task and results in a mass of figures almost worthless for operating purposes although likely to be entirely satisfactory to the accountant.

### Reorganization Followed Depression

In 1922 the coal mines of Russia were in an advanced stage of disintegration, with the entire country howling for coal. After this period the mines were organized into competitive groups. Experts were employed, back wages paid off and large subsidies granted for improvements. The result was that coal mining attained about the most satisfactory status of any Russian industry. The mines are now producing about one-half the prewar output at a price that is cheap compared to that of other commodities. Due to the weakness of the railroads—which are only 20 per cent efficient—as well as to the weakness of industry in general, it has been impossible for the mines to dispose of their product. Until recently the mines worked on reduced schedules, with mountains of mined coal cluttering up the landscape. Financial support was withdrawn and improvement work stopped.

Russia's domestic market is dominated by wood. This condition will begin to change as soon as the market becomes strong enough to permit full operation of the mines, which, because of reduced overhead, will lower the cost of coal to a point where the burning of wood will no longer be advantageous.

It is understood that the government is about to apply to the steel industry the same methods of resuscitation applied to the coal mines. This should in turn affect the mines favorably.

The equipment of the coal mines is so shaky and the plants themselves are so nearly obsolete that they cannot continue long and will be utterly unable to compete with modern mines whenever (which must be soon) new mines begin to enter the fields.

### Equipment Costs Are High

The design of a modern mine in Siberia is a difficult problem. It cannot always be shown clearly that the substitution of machinery for men will result in a reduction of costs. The mines are so far removed from manufacturing centers that the cost of delivery of materials is extremely high. Furthermore great foresight is required to maintain a supply at mines because

**Frozen In**

This illustration shows a typical coal property of the Kuznets Basin. It is the tipple, headframe and bucketway of the South Mine at Kemerovo where Mr. Pearson made his headquarters. The wide range of temperatures in this territory makes ventilation a serious problem. This however, is not the only handicap laid upon coal mining by Siberia.

it is necessary to look ahead years instead of months as there is so much uncertainty about deliveries. This results in excessive warehouse stocks and oversize repair shops.

One must not expect the application of modern methods to show the results they achieve in other lands. Not only is Siberian labor hard to train, but to gear up coal mining to operate at modern speed will require practically an industrial revolution over the whole country and embracing all industries. Trying to travel at American speed in Siberia is like trying to hurry when you are in the middle of a chain gang.

### Reasons for Low Output

The northern group of mines in Kuznets Basin was in typical Russian condition when I assumed charge of the group. The output per man was at its lowest ebb —one-tenth ton per man shift. This was due to several causes. All the workable mines were operating, although any one of them could have produced all the output. This provided an overhead personnel nearly as numerous as the active workers. A serious shortage of equipment did not permit the men working to produce anything like their potential capacity. The morale of men in the technical staffs was "shot." These men were underpaid, poorly accommodated, discouraged by the past, and apprehensive of the future.

The morale of the workers was even worse. Their conception of the results to be expected from the revolution was a total suspension of discipline and the gaining of a livelihood by half the customary labor. In addition, wages were several months in arrears. This encouraged nobody to work.

The plant layout did not commend itself to the eyes of a man accustomed to modern methods and the machinery was little better than junk.

### System Not at Fault

Such a low productivity combined with a strange mining system, very naturally was at first blamed on the system. Later, when some cost accounting made possible a comparison of results, it was discovered that the system was at least as good as any other, the difficulties being in the execution of details.

At the end of two years of the new management the net result was twice as much coal from two openings at one plant as the entire group of mines had been giving at the beginning. This was accomplished at about one-half the cost per ton, and with a man shift output of more than one ton. Concentration of work, prompt payment of wages, reduction of staff and improved accounting all played their parts in the net result.

In the mine work proper three changes were the most revolutionary, one was a reduction of the working face, which, by reducing the number of men being paid from one check, actually doubled the output per man by cutting out the suspicion on the part of each man that the other fellow was loafing at his expense. This was an innovation which received the hearty support of the Russian engineers. They had spent their lives trying to break up the "artel" system, a typical Russian institution in which a large group of men contract a job together. It had been long known that the men did not work well under this plan and were almost impossible to discipline. To produce the change it was necessary to double the narrow work, in itself not good mining practice, but on trial it actually reduced the cost of coal.

### Big Improvements in Haulage

Another change was the substitution of 1½-ton for the old ⅓-ton wagons. This resulted in a big saving in transport costs but necessitated a revolution in trackage. The Russian engineers had been fully aware of the advantage of bigger transport units but lacked the nerve to make the change. They feared discredit because the new system is so far reaching, involving better road beds, heavier rail, and broader gages. Broadening the gage conflicts with shaft layouts. Ordinarily a modern transport system will be possible only in new mines especially laid out for the purpose.

In this case it was possible to lengthen the cars without changing the gage of 22 in. This was not wholly satisfactory but proved better than the old system. The entries had been laid throughout with double tracks of 12-lb. steel. It was necessary to lay heavier rail, but as a double track system was not needed, a single track proved an actual economy.

### Change Time of Shifts

The third change involved the hours of operation. The mines had been working 24 hr. a day. Underground men had worked four 6-hr. shifts; outside men three 8-hr. shifts.

When the change was made, at first the policy was to get out the coal regardless of cost or efficiency. By concentrating all handling of materials and other nonproductive work in one shift quite an improvement was made.

Later a slackening in demand made it possible to cut off one mining shift, by allowing a 2-hr. interval

**Sixty Below but What of It?**

Here we have a couple of engineers setting out on an inspection trip in a typical horse-drawn Siberian sleigh. Temperature ranges are wide in this coal mining field but all you have to do is get used to it—and bundle up in furs.

between shifts. This eliminated some delays that had been suffered while waiting for powder smoke to clear. Also some surface friction was removed because surface and underground workers reported at different hours. Unfortunately for the purpose of measuring the relative advantages of the old and the new systems it was necessary to cut off another shift immediately as the output was not reduced sufficiently. However, there had been shown a big gain in output per man.

Soon after, a fire in part of the mine forced a return to the three shifts; and when it was possible to resume the experiment several other minor improvements so befogged the results that comparison is impossible. One of these improvements was the substitution of electric cap lamps for oil hand safety lamps. To this change the mine foreman attributed a gain of 20 per cent in efficiency.

### Safety Problems in Many Hands

"Safety First," is no by-word in Russian mine practice. The mine law, casually read, is apparently similar to the best of our American laws, but it reflects the Oriental idea of personal retaliation, and is inflexibly drawn. This results in a loss in initiative on the part of operating officials, which in turn, tends to encourage lower production per man.

The manner in which the law is written offers inspectors and operating officials no opportunity to exercise judgment. Enforcement of the rigid specifications of the law is supposed to be in their hands but it actually is not. The state mine inspector, being a mining man presumably will favor his professional brother the operating official; so a local labor inspector also goes over the ground. In addition, the miners' union maintains an expert who covers the same ground and, as the superintendent of the rescue station has little to do, he, too, takes part in the discussions. After one becomes acquainted with these worthies, of course the proper method of procedure for the mine management is to stir up a fight among them and plead inability to choose the best advice.

### Volunteer Rescue Squad

A fully equipped mine rescue station is maintained by the government at each gaseous mine—which, in Russia, means nearly all mines. It is manned by a superintendent, a trainer and three attendants on duty turn about, during the 24 hr. of the day. The crew is made up of volunteers from the miners.

It has been said that our American method of choosing petty mine officials is too informal. In Russia it is too formal. Only men who have been through a regular course of instruction can hold places of responsibility in the mines. Assistant mine foremen take one course, known as a "desetniks" course. Mine foremen are required to take another. These men are known as "mine tekniks." So far as I could learn it took these men as long to finish their course of instruction as it did an engineer to take his degree, yet the more responsible positions were not open to the foremen. Construction work and surveying are done by men specially trained in those branches. I was at a loss to discover the real difference between a "teknik" and an engineer. One observes that the effect of having each job performed only by men who have gone through a certain course, is to make the work seem poured through a mould. It is to be hoped we never will become so formal in this country.

**Siberian Cold Stays Out**

This typical Siberian house in a coal mining town is built 20 x 50 ft. on the ground and is supposed to house four families. But when housing was short in the village, seven families occupied it. Mine officials are allowed one room and a kitchen each for their families. The house is tightly constructed of logs in the Russian manner to resist the cold winds. Most of the heating is done in fireplaces.

# New Conveyors Speed Room-and-Pillar Mining

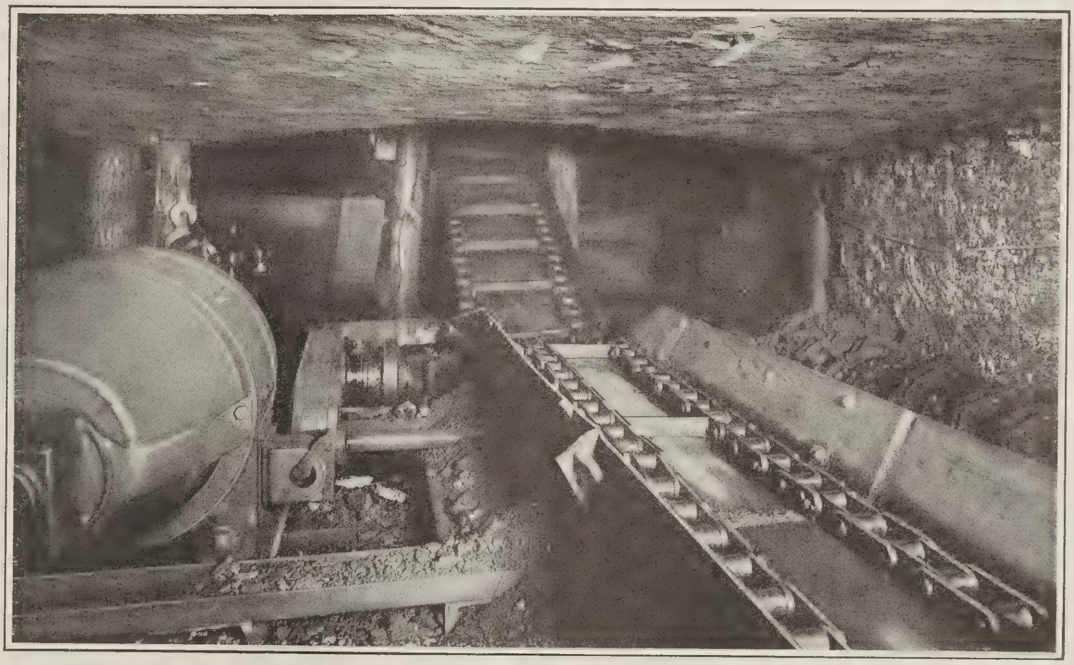
## Self-Contained 12-Ft. Belt Units for Service in Tandem at the Face Discharge into a Sectional Scraper Trough Extended to Any Length Delivering to Cars on the Entry

**By Alphonse F. Brosky**
Assistant Editor, *Coal Age*,
Pittsburgh, Pa.

SWIFT TRANSPORTATION of coal away from the working face is essential to concentrated room-and-pillar mining. In thin coal each fall must be rushed out of the way with especial dispatch. Realizing this and convinced that conveyors have the greatest possibilities for speeding coal from face to cars on nearby entries, Richard A. Suppes, general superintendent of the Knickerbocker Mines at Johnstown, Pa., has designed and put into his own service two new types of conveyors. One is a 12-ft. belt unit for use along the face and the other is a sectional flight conveyor which can be extended to any length to deliver coal to cars.

**Loading-Boom In Service**

In order to avoid crowding and consequent spillage of coal at the junction where the main conveyor discharges onto the loading boom, two features of design are provided. First, the loading-boom chain is wider than that of the main conveyor; second, the speed of the boom is 20 ft. faster per minute than that of the conveyor.



The two conveyors are intended primarily to operate together as one system in the mining of coal from rooms, pillars and entries. In this arrangement the coal is loaded into one or more of the lateral belt units discharging into the main conveyor unit which delivers to cars. The main conveyor unit, with a few slight modifications, is also applicable to face conveying in longwall layouts.

The lateral conveyor, of the belt type, is portable but is not sectional in the sense that its length can be changed by adding or taking away duplicate units. Each one is a self-contained, motor-driven conveyor. The requirements of any room, pillar or entry face can be met by arranging two or more such units in tandem.

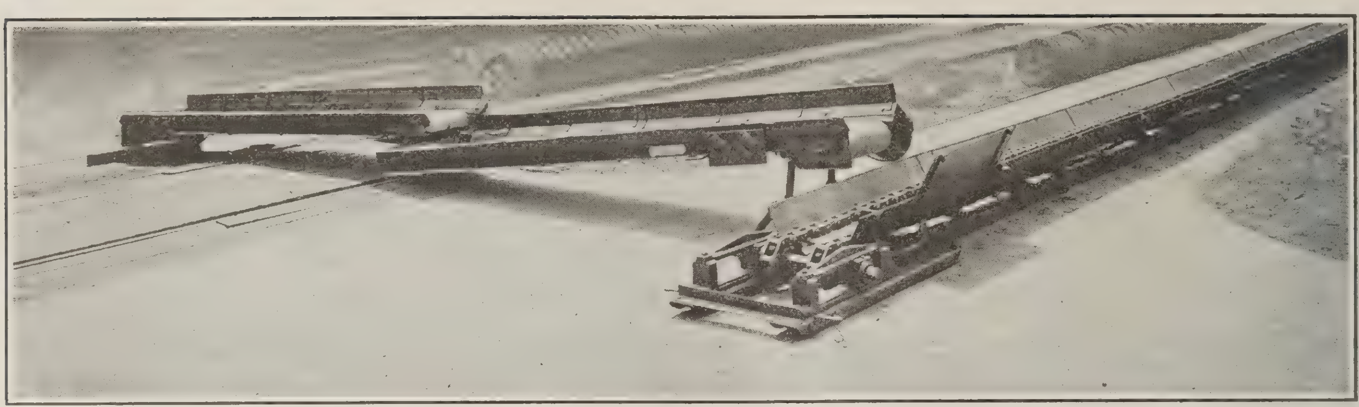
Each of the 12-ft. self-contained lateral conveyor units is provided with a 16-in. composition belt. A plate of steel is bolted to two 3-in. channels forming the main frame of the conveyor. Flared sides of steel rest on beveled wooden stringers and both are bolted to the main frame. Thus is formed a stationary trough, about 3 in. deep, on the floor of which travels the loaded strand of the conveyor belt. Secured to each side of the trough is a rubber flap the edge of which extends over the loaded strand of the belt. This keeps slack from overflowing the belt and crowding under it. The return strand of the belt travels over round rods extending laterally between the channels. Spillage of coal during the shoveling operation is prevented by a demountable extension plate which fits over one trough flare of the conveyor.

The drive pulley and the tail pulley are made lightweight by squirrel-cage construction. Circular disks mounted on the pulley shaft are joined by steel staves which are welded to the disks. The drive pulley is double-conical, tapering slightly from both ends to the center line.

A $\frac{3}{4}$-hp. reversible motor, through sprockets and a chain, drives this conveyor at a speed of 131 ft. per minute. The discharge end of the conveyor is elevated over the main conveyor by an adjustable 4-legged, telescopic pipe support. A take-up on the tail end of the conveyor provides an adjustment to take care of belt stretch. The overall height of the conveyor, at the discharge end, is 27 in.; the maximum shoveling height is about 16 in. and the minimum $8\frac{1}{2}$ in. One unit complete with the drive weighs 570 lb.

The main conveyor is of the scraper type, portable and sectional. In it are a tail section, as many intermediate sections as are required for a given length and a head or drive section, with which is incorporated a loading boom—all propelled by one motor.

The tail section is constructed exactly like the intermediate sections except for the addition of a take-up



**This Photograph Shows One Side of an Arrangement of Face Conveyors**

These short, lateral belt-conveyors which discharge into the main conveyor either singly or in tandem are self-contained. One 10-hp. motor drives as much as 250 ft. of the main conveyor and a loading boom also.

and a tail sprocket. The tail section is mounted on a pair of channel-iron sled runners to facilitate the insertion or removal of intermediate sections. It is provided with a demountable extension plate which prevents spillage of coal at the point where the lateral conveyor discharges into the main conveyor. The weight of this section, without chain, is 363 lb.

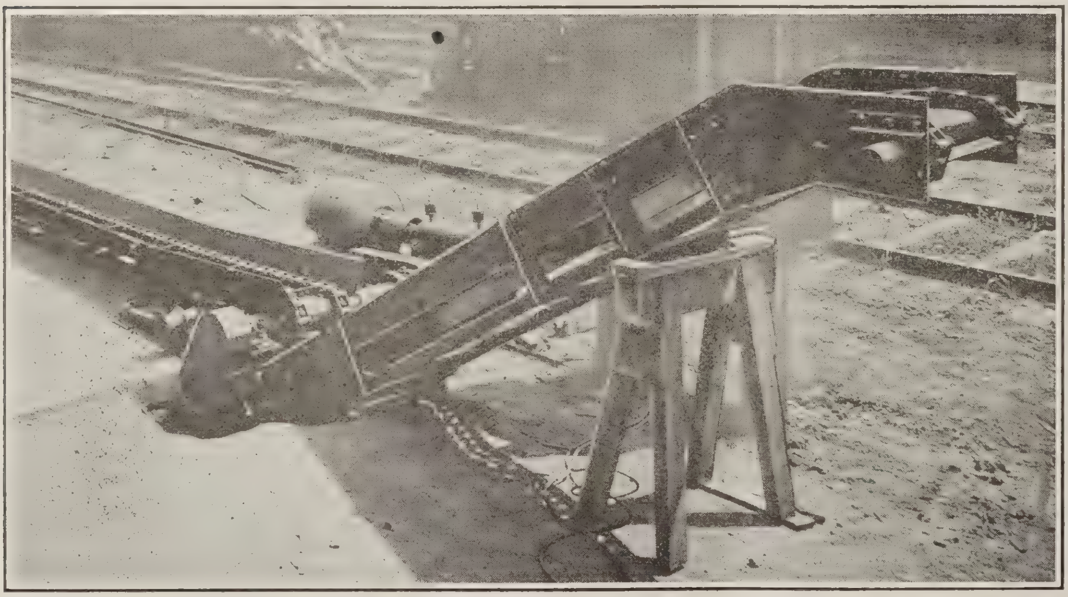
Each intermediate section is 6 ft. long and 13 in. high. The main frame of each section is a pan of ⅛-in. steel plate which is troughed with flared sides. This trough is 20 in. wide at the top, 5⅞ in. deep and 13 in. wide at the bottom. In this trough travels a double drag chain. Flights on 24-in. centers are welded directly to the links of the chain. Sections of chain are fastened together by cotter pins.

On the longitudinal center of each trough and riveted to each flare are two strap steel legs which support the trough. These legs are tied together at the bottom by a ⅝-in. removable round rod. Within the two legs—one at each end of the rod—are two rollers which act as idlers for and serve to support the return strand of the chain. Above the rollers, the inside surface of the legs is rounded, allowing the chain to rub these legs without fouling.

The ends of the flared sides of the conveyor trough are bent to 90-deg. flanges. Two slots are cut in the flanges on one end of a trough, into which fit two U-bolts on the flanges of the mating end of an adjoining trough. A soft-iron wedge inserted in the U-bolts key together two trough sections. The bottom of each trough at both ends is bent under in a half-oval, to provide a rounded joint no matter what the vertical inclination may be between any two adjoining sections. The joint flanges spring enough to allow the conveyor to conform to the profile of the mine floor.

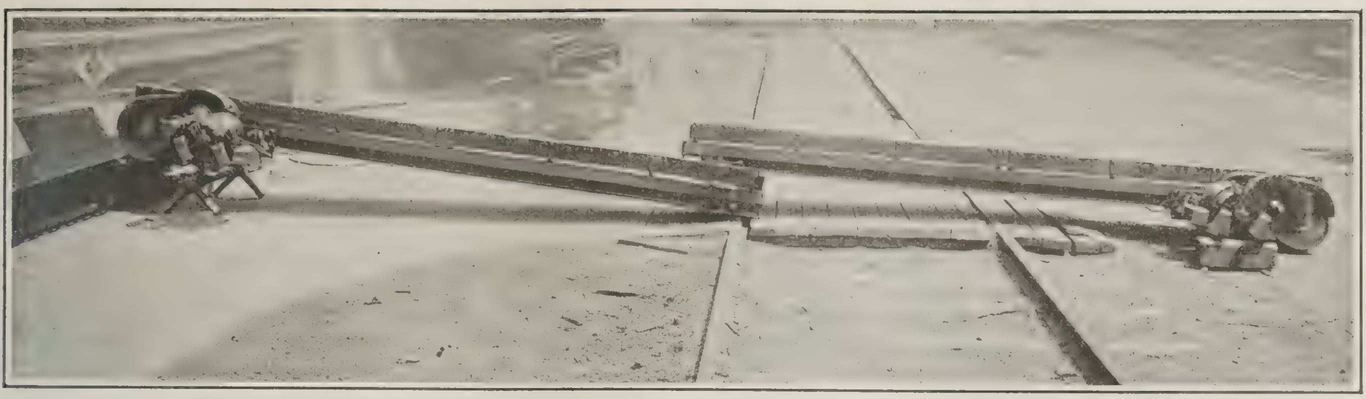
In moving intermediate conveyor sections the trough and chain are handled separately. A trough weighs 80 lb. and a 12-ft. length of chain weighs 196 lb. To shorten the conveyor by 6 ft. the intermediate segment adjoining the tail section is removed. First the take-up is loosened and the intermediate trough section is disconnected from that adjoining it by the removal of the retaining wedge keys. Next, the lateral rod through the legs of that section—which supports the return strand of the chain—is withdrawn, causing the latter to rest on the ground. Then a 12-ft. length of chain is removed from within the trough; the trough is lifted out of the conveyor line; the tail section is shifted forward and joined to the nearest intermediate section; the open ends of the chain are joined, and finally the chain is tightened by means of the take-up. Intermediate sections are added in the same general manner. Either operation can be performed by three men in about 3 minutes.

The head section terminates in a heavy sprocket shaft which, through a worm type speed-reducer from a



**A Side View of Loading Boom**

The main conveyor is driven by a 10-hp. motor through a worm-type speed reducer to a sprocket shaft on the head section. A chain from the main sprocket shaft drives the loading boom.



The Other Side of a Pair of Face Conveyors in Tandem

Each self-contained, lateral conveyor is driven by a $\frac{3}{4}$-hp. motor and weighs 570 lb. complete. A demountable extension plate is added to one flare of the conveyor trough to prevent spillage of coal over the side of the conveyor during the shoveling operation.

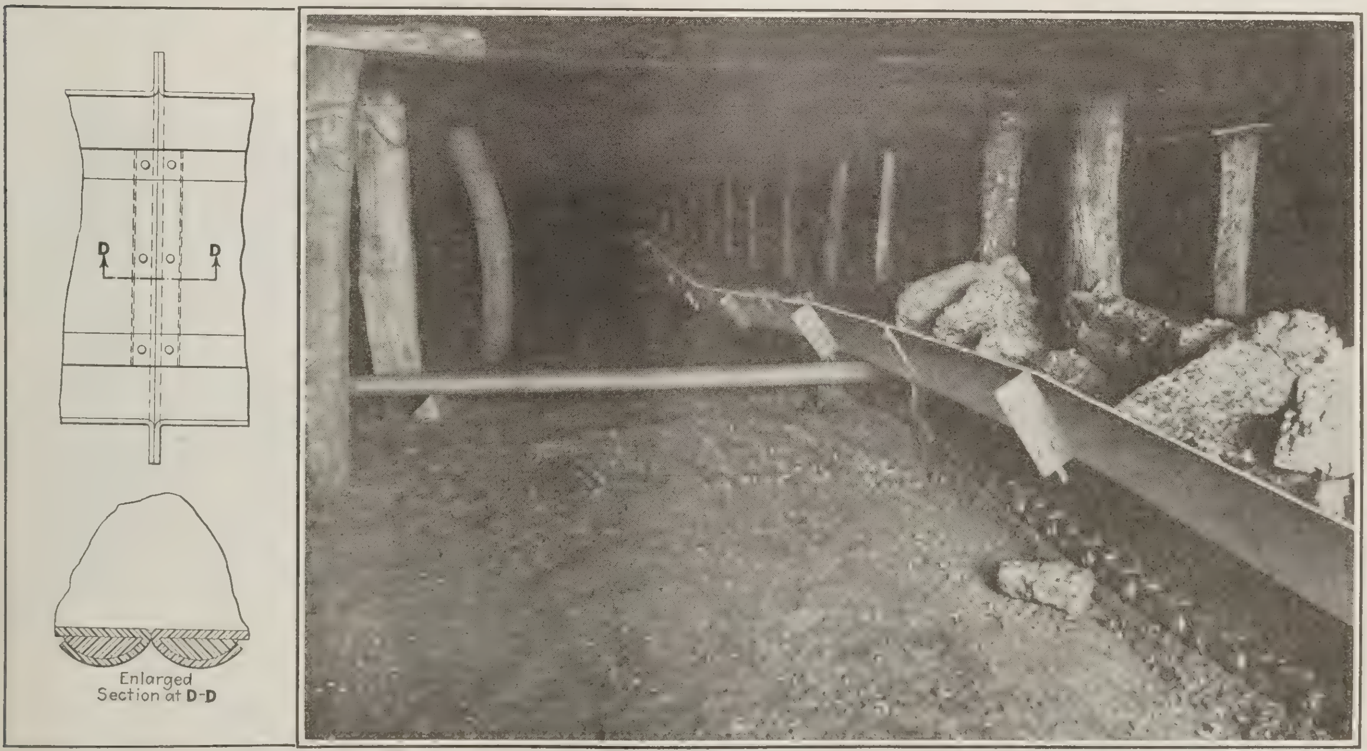
10-hp., reversible motor, drives the main-conveyor chain at a speed of 118 ft. per minute. A flexible coupling is inserted between the motor and the speed-reducer. The sprocket shaft is equipped with a safety coupling, held by four heavy nails which are sheared by an overload or a disarrangement in the equipment, preventing damage to the drive.

On the sprocket shaft also is a clutch which, when engaged, stops the conveyor and drives a capstan located on one side of the conveyor. With the capstan and a rope, sections of conveyor can be hurriedly dragged to safety in case of an impending fall at the face. The weight of the head section, without chain, is 512 lb. and the weight of the drive unit is 975 lb.

The 10-hp. motor, in addition to propelling as much as 250 ft. of main conveyor, drives also the loading boom into which the main conveyor discharges. This is accomplished through the medium of a chain from the sprocket shaft of the main conveyor to a similar shaft on the boom at a speed of 138 ft. per minute. This speed is made 20 ft. per minute faster than that of the main conveyor, to avoid crowding of coal at the junction point.

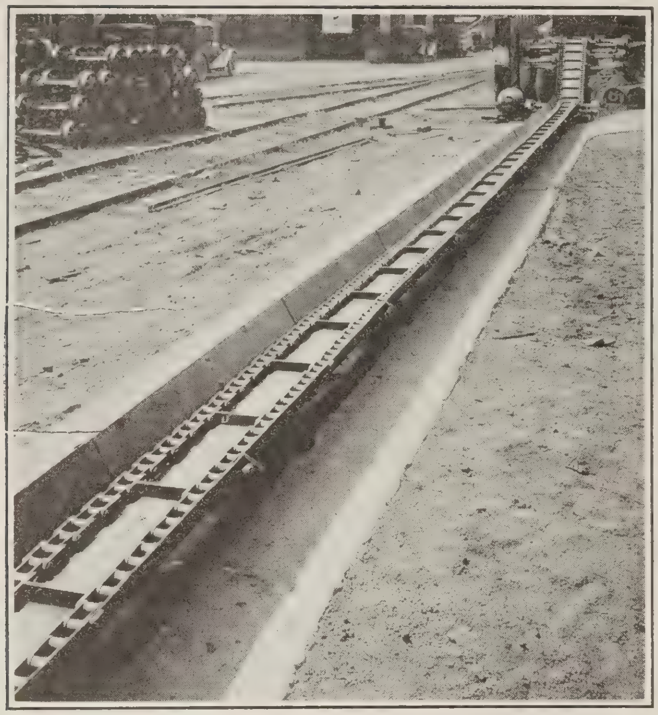
The loaded strand of a 20-in. scraper type roller chain, with flights on 16-in. centers, runs on the floor of a box trough, while the return strand runs on angles which are made a part of the frame. The boom is provided with a take-up which is located on the tail end. The loading boom is 9 ft. long, from sprocket center to sprocket center, and can be set at any angle up to 32 deg. depending on the height of the mine car to be loaded. At its maximum angular elevation the underside clearance is 3 ft., 9 in. as measured from the mine floor (not from the rail), and the maximum height is about 4 ft., 9 in. Bottom clay or top rock, of course, can be removed to provide any desired clearance above and below the boom. The loading boom, complete with chain, weighs 885 lb.

None of the chain requires lubrication. All other bearings are lubricated by a high-pressure feed system.



Main Conveyor Conforms to Any Bottom Because It Is Jointed

In the flanges, by which the trough sections are joined in the manner shown by the drawing is a certain amount of "spring" which allows the vertical line of the conveyor to fit the profile of the mine floor. The clean and fresh appearance of this place indicates speedy recovery. "In and out again in a jiffy" is the motto of the men who operate this mine.



**Trough and Chain of Main Conveyor**

The upper strand of the chain travels in the flared trough and the lower strand idles over rollers on rods which are inserted through the supporting legs. Flights on 2-ft. centers are welded to the links of the chain, which is of the drag type.

The main conveyor is reversible to facilitate the transportation of supplies and equipment to the face, and is controlled either from the loading-boom end or the face end, in the latter case through a no-voltage release.

Twelve hours are required by five men to disassemble the equipment, in a worked-out place, move it to a new place and reassemble it. This equipment can be applied to a 30-in. coal seam. It is suggested that a 5-hp. hoist be provided in conjunction with this equipment to enable one man to load and spot mine cars in trips of 25 cars.

The new conveyor is manufactured by the Lorain Steel Co., Johnstown, Pa. Its application to low-seam coal in two central Pennsylvania mines will be described in a future issue of *Coal Age*.

## What It Costs to Paint Town In Mining Region

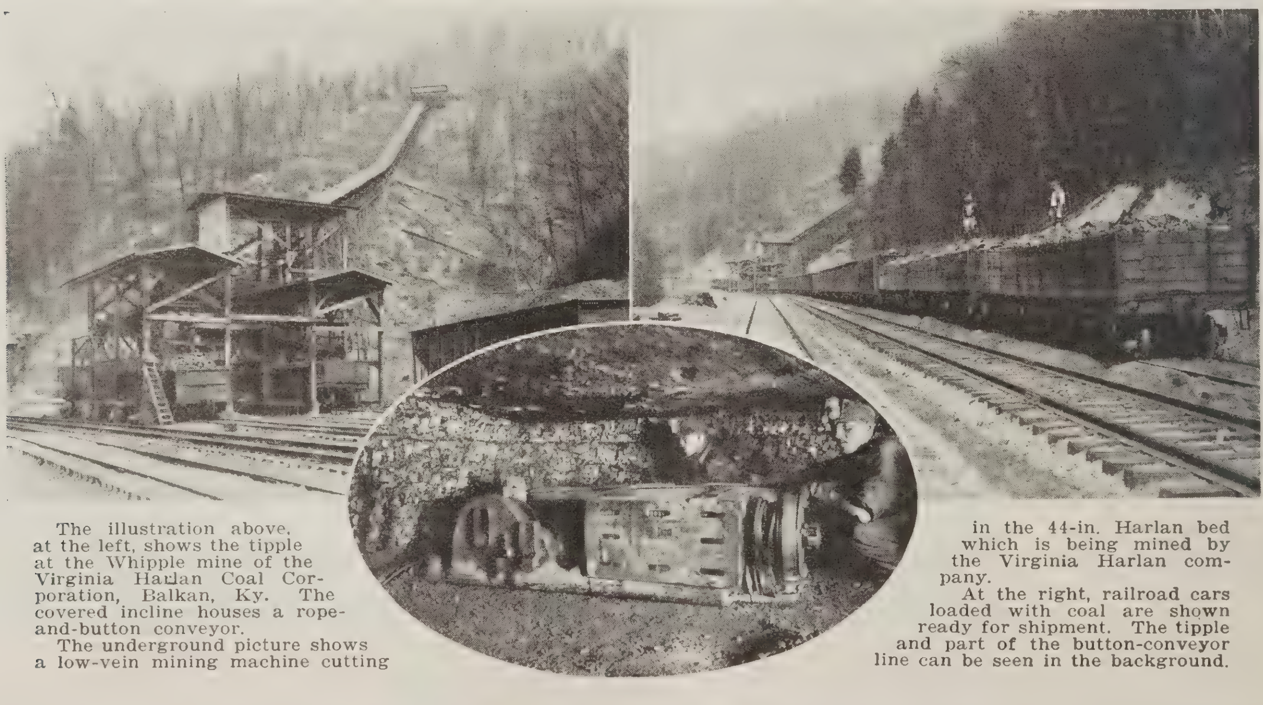
Recently The Union Pacific Coal Co. repainted its houses in the town of Winton, Wyo., a few miles north of Rock Springs, using a spray gun for that purpose. The costs were as in the accompanying table:

**Costs of Repainting 75 Houses**

| | | | |
|---|---|---|---|
| Cost of material | | | $2,058.54 |
| 132 | gal. gasoline | $36.72 | |
| 3 | qt. oil | 3.90 | |
| 22 | lb. paint coloring | 27.25 | |
| 641 | gal. paint | 1,867.13 | |
| 5½ | gal. dryer | 12.45 | |
| 63 | gal. linseed oil | 90.09 | |
| 10 | paint brushes | 13.25 | |
| 4 | ft. screen | 0.56 | |
| Cost of labor for gun | | | 555.90 |
| Cost of trimming | | | 392.86 |
| Total cost | | | $3,007.30 |
| Cost per 100 sq.ft. for material | | | 1.60 |
| Cost per 100 sq.ft. for labor on gun | | | 0.43 |
| Cost per 100 sq.ft. for all labor | | | 0.74 |
| Cost per 100 sq.ft. for labor and material | | | 2.335 |
| Number of feet of surface painted | | | 128,797 |
| Number of houses painted, 75 | | | |
| Number of roofs painted, 65 | | | |

The painting of the shingle roofs, using a bright green, gave the village, which is in the arid region, a cheerful appearance. Long Beach, a high-class residential town on the shores of Long Island, for many years prided itself on every house having a yellow roof, and around the towns of The Union Pacific Coal Co. many roofs have been given a coat of this pleasing color—a suggestion that others might imitate with advantage.

## A Mining Operation in the 44-In. Harlan Bed at Balkan, Ky.



The illustration above, at the left, shows the tipple at the Whipple mine of the Virginia Harlan Coal Corporation, Balkan, Ky. The covered incline houses a rope-and-button conveyor.
The underground picture shows a low-vein mining machine cutting in the 44-in. Harlan bed which is being mined by the Virginia Harlan company.
At the right, railroad cars loaded with coal are shown ready for shipment. The tipple and part of the button-conveyor line can be seen in the background.

# Use of Pulverized Fuel May Boost Coal Production

## Tests Prove That Low-Grade Coal Burns with Good Efficiency and May Create Better Market For Cheap-Mined Product

**By P. Nicholls**
Fuel Engineer, U. S. Bureau of Mines, Pittsburgh, Pa.

HOW WILL THE USE OF COAL in the pulverized form affect the coal producing industry?

Perusal of some of the literature on the use of powdered fuel might create the impression that the most important effect of its adoption so far as the coal industry is concerned will be a decrease in the demand for fuel, occasioned by or resulting from the greater efficiency attained in the production of heat from it. A study of economic laws, however, will relieve all anxiety on this score, since the cheaper production of any finished article invariably increases the demand for it and, consequently, for its raw constituent materials.

Utilization of coal in the powdered form will doubtless react upon the coal industry in the three following ways: (1) A demand will be created for, and it will become possible to sell, low-grade fuels that previously have gone to waste because of their fineness or their high percentage of ash. Thus, anthracite and bituminous fines and high-ash slack will find a market. (2) A demand for lignites and brown coals—some of which have been difficult or even impossible to burn by other methods—will be created. (3) Where coal is to be mined for use in the pulverized form exclusively, it may be possible to cheapen mining costs by employing mechanical methods of the "hogging" type, removing coal uncleaned from the mine. If a consumer bought the entire output of a mine worked on this basis both consumer and operator might benefit.

A full consideration of the first effect suggested would involve numerical tabulation of the amount of coal used in the pulverized form at the present time and the quantities of fine and low-grade fuels now available at the mines. A rough estimate of the first, indicates that from 15,000,000 to 18,000,000 tons of pulverized coal is now being used annually. The second is too complicated to cover in detail and will vary from mine to mine, from bed to bed, and also with the preparation employed and the demand in any particular district. A fuel which at one time may be considered as a waste product, at another may possess an appreciable value. Any classification or quantitative estimate of the amount of such fuels available would, therefore, be difficult to make.

That low-grade fuels may be efficiently burned in the powdered state has been repeatedly demonstrated both in this country and abroad. The records show that coals containing as much as 40 per cent of ash, or even more, have been successfully burned in this manner. The greater part of such data, however, refer to short periods of time and do not prove that the use of the particular fuels tested would have been possible or truly economical for continuous operation.

Many plants, however, have reported continuous operation, on such fuels, the following being a few examples: The Susquehanna Collieries Co., at Lykens, Pa., is using No. 2 Lykens anthracite containing 12 per cent of ash. It reports an efficiency, including superheater, of 80.7 per cent.

The Cahokia power station at East St. Louis, Ill., adopted pulverized coal in order to be able to burn low-grade fuel. It reports using an Illinois coal containing 12 per cent of moisture, dried to 5 per cent, and 16 per cent ash (18 per cent of which is iron), and having a fusing point of 2,000 deg. F., obtaining from 80 to 84 per cent efficiency without economizers.

The Philadelphia Rapid Transit Co., at its Mt. Vernon station, has burned anthracite waste containing 18½ per cent of ash obtaining an efficiency of 62 per cent.

From France come reports of burning low-grade fuels continuously at several plants: At Montceau-les-Mines a coal containing 27 to 28 per cent ash, having a fusing point of 2,120 to 2,220 deg. F. has been burned with efficiencies of 75 per cent or more. At Etablissements Delaunay-Belleville a mixture of coals running up to 42 per cent ash has been burned successfully. At a certain metallurgical plant, anthracite containing 35 per cent ash has been burned with an efficiency of 74 per cent.

In this country some mines are consuming the low-grade fuels they produce to generate the power necessary for their own operation. An excellent example of this kind is furnished by the United States Coal & Coke Co., of Gary, W. Va., which utilizes its bone coal containing approximately 23 per cent of ash.

### Efficient Combustion Proven

A large number of short-time tests might be cited showing that even poorer coals have been burned successfully. It may be considered as proved, therefore, that combustion of low-grade fuel in the pulverized state has been, and can be accomplished with good efficiency.

Efficiency of combustion, however, is not the sole factor to be considered, and time alone will demonstrate whether the overall economy secured will be such as to permit of a large demand being created for low-grade fuels. Even if equal efficiencies were attained, a number of factors increase the operating costs with low-grade pulverized fuels. Among these should be mentioned the freight and handling charges on the ash and moisture content, the extra power required for grinding, the heavier wear on all machinery, the expense of removing and disposing of large amounts of ash, and the more rapid destruction of the refractories. Furthermore, although good efficiencies can be attained from low-grade fuels, the maximum capacities of the boilers are lower than with the better grades, and the possibility of trouble or stoppage will always be greater.

In time, numerical values may be assigned to these various items, so that it will become possible to estimate the relative economic value of available coals.

It might be suggested that if the coal industry is desirous of obtaining an outlet for its low-grade fuels, it must do its share toward determining the treatment to which these materials must be subjected at the mine, in order to afford greatest economic results.

Unquestionably the employment of powdered lignite and brown coal has opened a way to overcome some of the difficulties involved in their utilization. It has improved the outlook for these fuels although reports indicate that much of the work so far done is in the

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Abstract of a paper delivered before the spring conference on coal at the U. S. Bureau of Mines, Pittsburgh, Pa.

form of tests and trials. A few of the results reported are as follows: At the plant of the Colorado Fuel & Iron Co., at Pueblo, Puritan lignite was powdered in an Erie City pulverizer and burned in a Seymour type of furnace affording 76 to 77 per cent efficiency.

Trials conducted at the St. Paul Light & Gas Co.'s Island station, on Texas lignite, containing 30 per cent moisture and 20 per cent ash on a dry basis, afforded continuously 154 per cent of boiler rating with 78 per cent efficiency without serious operating difficulties. A rating of 260 per cent gave 76 per cent efficiency, but excessive slag made it necessary to shut down after a four-hour run. In spite of this, however, the tests were considered sufficiently conclusive to warrant placing orders for 10,000 hp. of powdered lignite boilers for a plant at Trinidad, Texas.

Many other tests have been conducted upon this fuel, both in this country and in Canada. In Australia, also, brown coal has been tried. All of these have demonstrated that grades of these fuels that have given considerable trouble, or have been impossible to burn continuously by other means can be used when pulverized.

It would appear that the claim that the utilization of fuel in the pulverized state will ultimately be of direct benefit to the coal industry is justified. It may also be alleged that the utilization of powdered fuel has been of direct benefit through the incentive it has created for large-scale experimentation and the pace it has set for other methods. As to how far improvement in these other methods has been due to the competition of pulverized fuel and how far to their own natural growth, no one can determine definitely.

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# Dinosaurs Leave Footprints In Utah Coal Mines

A PREHISTORIC animal that paleozoologists have termed the "terrible lizard" or "dinosaur" roamed over the peat bogs of Utah in the Cretaceous period, and he left behind him footprints that Utah coal operators still display with pride. They—the prints, not the operators—are of various sizes, some measuring 30x31 in. The one shown in Fig. 1 is from the mine of the Utah Fuel Co. and is 24 in. wide from one extreme to the other.

The lizard walked along on his hind legs and must have been a most terrible creature, but as its actual identification is difficult, we can only surmise how tall it might have been. To W. D. Matthews, of the American Museum of Natural History, it appears to be a deinodont or big-toothed dinosaur of which group the tyrannosaurus, is possibly the most bulky member. That flesh-eating lizard attained a length of 47 ft., and the animal, counterweighted by its huge tail, stood in a posture a little more erect than that of a dog begging. Thus standing he was from 18 to 20 ft. high.

Apparently the monsters tracked along in the mud above the peat bog, and their feet made a depression in the vegetable mass which remained after the feet were withdrawn, but the mud that was pushed into the peat by the foot ultimately formed a cast of sandstone which was later filled with a shaly material. E. T. Ralph, writing to A. C. Watts, of the Utah Fuel Co., says "this impression had the appearance of being in the solid sandstone, but upon cutting around one of these footprints we found that the sandstone in the print is only about 2 in. thick and is overlaid with several inches of black shale between the exposed footprint and the solid sandstone."

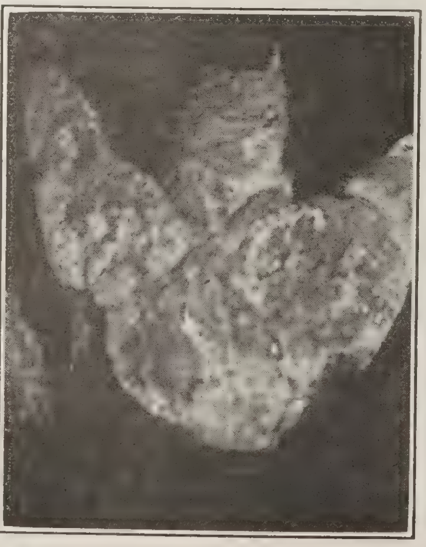

FIG. 1

**Dinosaur Footprint in Mine Roof**

In place of ferns, the mines in Utah frequently have markings indicating the passage of a big lizard over the surface of the peat bog. The coal is surmounted by shale but when the footprints were made the capping must have been of fine sand slime, for that is the material of which the exterior of the footprint is made. The interior of the print is of shale.

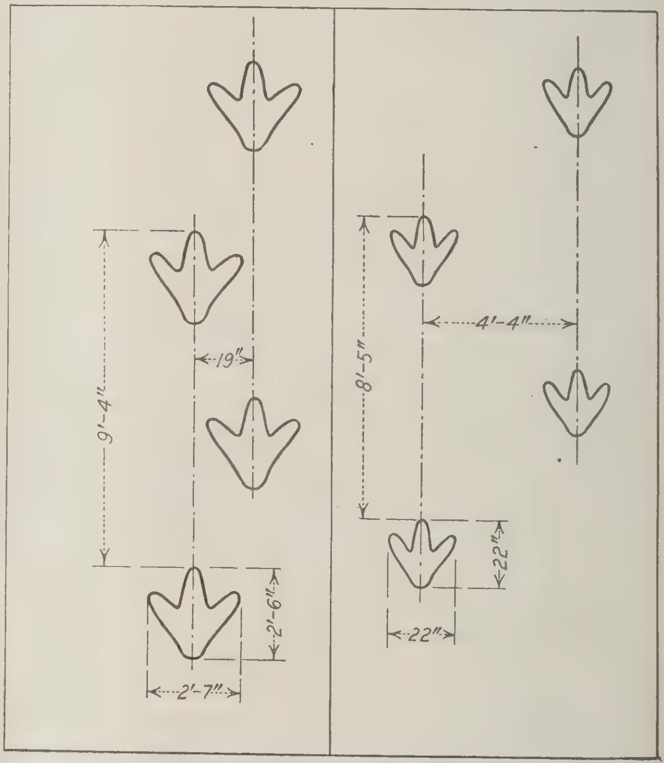

**Fig. 2—Dinosaur Tracks at Castlegate and Ballard**

The smaller measurements are of footprints in the old longwall workings just southeast of Castlegate No. 1 mine opening and the larger show the dimensions of the prints in the old Ballard mine of the American Fuel Co. Note the variation in "wheel gage" so to speak between the larger and smaller animal—19 in. in one case and 4 ft. 4 in. in the other. The Ballard tracks are taken from notes of William Peterson and the other tracks from those of A. C. Watts, chief engineer, Utah Fuel Co.

In the Rolapp mine just north of Castlegate, Utah, footprints are found all along an entry, showing that the tyrannosaurus, or whatever he was, walked in that direction. The outlines have been delineated in crayon and thus is recorded in ancient stone and modern fireboss' chalk the journey which a lizard took perhaps millions of years before the appearance of man. It is said that in many cases the evidence is that there were in those days saurian paths like the cow paths of today; only occasionally did one of these big lizards wander away from the well beaten tribal pathway to make a new roadway of his own over the surface of the plain.

# Improved Ventilation and Safety Practices Pay

By **A. W. Dickinson**
General Superintendent, Union Pacific Coal Co.,
Rock Springs, Wyo.

WITH MINES OPERATING in territory where the coal beds carry a considerable quantity of methane, and with experience in the past which has confirmed the serious nature of the gas and coal dust hazards, The Union Pacific Coal Co. has exercised care in the conduct of mine ventilation for many years. In recent years, added impetus has been given to the handling of the ventilation problem by President Eugene McAuliffe. This attitude has brought about marked changes in the positions taken by all of the staff toward the coursing and conduct of the ventilating current. The feeling at present is, that "good enough" will not do.

Supplementing the work of the safety engineer, the station of ventilation engineer was created in the spring of 1924. The ventilation engineer chosen was a man of engineering training and long experience in the southern Wyoming field, through which he had been in close contact with the underground coal mine conditions of this region. His duties as assigned consist of: (1) Constant inspection of the ventilating systems of all the mines. (2) Study and control of any agency which may result in the ignition of gas and dust. (3) Study and control of fire areas in mine workings.

For the past year a quarterly inspection has been made at each mine by a committee consisting of: 1. A member of the United Mine Workers, chosen and paid by the local union; 2. A member of the United Mine Workers, chosen and paid by the mine superintendent; 3. The safety engineer of The Union Pacific Coal Co. or his representative.

### Miners Approve Program

These quarterly inspections have brought out some points which were constructive and in which remedies have been applied. They also have the value of creating a feeling among the men employed in the mines, that they have a direct interest in the promotion of the safety program, and there is no question but that this manner of inspection has resulted in benefit to the properties. It is clearly indicated that the majority of the men approve of the program. There have been several cases in the past three months where wrong-doers have been reported and punished through the agency of their fellow workmen.

One means taken to promote the safe conduct of the ventilation and all other underground practices, is the employment of one man in each mine known as a safety patrolman. This man reports to the foreman of the mine, and it is his duty to patrol all working faces on working days, seeing to it that men do not work under dangerous conditions, that loose top and loose face coal is properly cared for, that clearances are observed and that the general safety standards prepared by the engineer of standards for the company, together with the safety rules, are carried out. On idle days, the safety patrolman covers the air courses and works on the placement of sprinkling devices, shale dust and the shale dust barriers.

At each of the Union Pacific Coal Co.'s seventeen mines, a recording vacuum gage is placed in the return at the ventilating fan. The charts on these gages are changed every morning before the day shift enters the mine, the mine foreman assuring himeslf of the constant operation of the fan subsequent to quitting time on the previous night. At mines generating methane, daily readings are made of the air volume on each split and weekly reports on air volume and water gage are furnished from each mine.

For the past nine months, all of the seventeen mines have been on closed lights. Shale dusting is being thoroughly carried out in all of the mines, a central plant for the fine grinding having been erected at Rock Springs. Room faces, roadways, empty and loaded cars are wet down. The program also calls for water on the cutter bars of all mining machines.

### More Lump with Less Powder

Permissible powder and electric detonating caps are in use to the exclusion of any other form of explosive. In connection with the use of electric caps, it has been demonstrated that the first delay caps, when used in the firing of a round, result in a saving in powder and an increase in the production of lump coal. Cushioned shooting is also encouraged, and an explosive engineer is employed to follow up the shooting practice, with the purpose of keeping the percentage of lump at a maximum.

Close attention is paid to the construction of overcasts, the ventilation engineer watching the manner of construction and the area allowed. Stoppings are made of concrete; also of double rock wall with dirt pack in the center. In room crosscuts low priced jute brattice is used to stop outside crosscuts and carry air to the actual working face.

In the plastering of stoppings necessary to carry a maximum per cent of air to the working face, a new mixture has been developed since the use of shale dust became general in the mines. Stopping plaster now consists of a mixture of three units of sand, three units of shale dust and ½ unit of portland cement. This mixture does not crack and is considered by everyone to be a real discovery.

### Air Shaft Practice

The rule or standard required by the ventilating engineer, is that 75 per cent of the volume of air read at the intake of an entry be conducted through the face crosscut. This requires the very best of stopping practice using projected cement. The new standard in air shaft practice provides that shafts be of circular crosssection, 12 ft. in diameter in the clear. It will be found that it is much easier and less costly to maintain such a shaft.

The improved ventilation and safety practices of the Union Pacific Coal Company have paid and paid generously, not only from the humanitarian standpoint but also in cold, hard dollars and cents. The carrying on of the work has bred a very agreeable relation in the entire body of employees to the great encouragement of everyone concerned.

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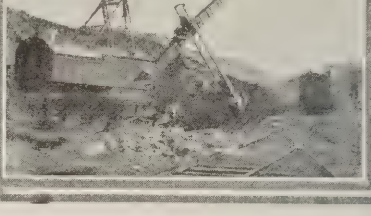
Extracts from a paper presented at the National Safety Council's fourteenth annual congress, Cleveland, Ohio, Oct. 1.

# News Of the Industry



## Lewis Finally Makes Direct Appeal To President, Asking Intervention; Adviser Says Coolidge Will Decline

President Lewis of the United Mine Workers made his definite appeal for government intervention in the soft-coal situation and repeated his more or less veiled threat of a general strike in a letter Nov. 22 to President Coolidge. The letter renewed the miners' contention that the Pittsburgh Coal Co., the Consolidation Coal Co., the Bethlehem Mines Corp. and "coal interests of the Buffalo, Rochester & Pittsburgh R.R." have been violating the Jacksonville agreement and invited the government, as a party that encouraged the making of that agreement, to take a hand toward enforcing it. An authority close to the President at Washington said the President's attitude no doubt will continue to be that there is no law under which the government can proceed against the operators.

Thomas F. Brennan, president of the Buffalo, Rochester & Pittsburgh R.R., denied that his company is interested in any mining companies along its route and therefore is not directly or indirectly interested in the Lewis controversy over violation of the Jacksonville agreement.

Spokesmen for the Anthracite Operators' Conference said the new outburst of Lewis with his old declarations only confirm their contention that Lewis, in bringing about the existing anthracite strike, was trying to use it as a means of getting the government to cure the miners' soft-coal troubles.

In Chicago Stuyvesant Peabody, president of the Peabody Coal Co., said that if Lewis calls a strike affecting the whole Central Competitive Field, in which a good many operators have been living up to the Jacksonville agreement in spite of competitive conditions, he will be doing to them the very thing which he complains certain operators are doing to the union.

The Lewis letter follows:

> In February, 1924, the operators and miners of the Central Competitive bituminous coal fields consummated a wage agreement designed to expire by limitation on March 31, 1927. With this instrument as a base supplemental agreements of similar nature were executed between operators and miners in contiguous and outlying coal districts. The accomplishment met with general public approval, as the agreement gave promise of security and advantage to the public with respect to the factors of continuous supply and price. Agencies of the federal government co-operated in making possible the agreement, the Departments of Justice, Commerce and Labor participating.
>
> The twelfth annual report of the Secretary of Commerce for the fiscal year ended June 30, 1924, at pages 13 and 14, states as follows:
>
> "Through co-operation by the department with the unionized operators and with the leaders of the United Mine Workers a long-term agreement has been entered upon which insures industrial peace in the industry. * * * The industry is now on the road to stabilization. * * * No better example of co-operation to secure the elimination of national waste can be presented. The past year, as compared to the year 1920, shows a saving to the consumer of about $1,000,000,000, which must be reflected in decreasing costs of production in every avenue of industry and commerce."
>
> Without question, the foregoing declaration of accomplishment by the federal government in the public interest was heartily approved by every thoughtful citizen.
>
> Notwithstanding the acknowledged virtue of the before-mentioned contract, I am compelled to authoritatively advise you that substantial coal-producing interests, signatories to the arrangement, have violated and repudiated their written word of honor and in so doing have impaired the integrity of the wage structure throughout the entire bituminous industry. Among the coal companies thus trampling upon and dishonoring their wage agreements with the mine workers are four of the largest coal-producing groups in the nation, viz.: the Pittsburgh Coal Co., the Consolidation Coal Co., the Bethlehem Mines Corporation and the coal interests of the Buffalo, Rochester & Pittsburgh R.R., their several operations being located in northern West Virginia, Ohio and the central and western Pennsylvania coal fields.
>
> To attain their unmoral objective these companies, and certain others of lesser consequence, have utilized coercive and oppressive methods. Their actions have been destructive of all confidence between employer and employee and constitute an unwarranted, indefensible blow at the universally recognized principle of collective bargaining. The savage and dishonest acts of the before-mentioned group has added to the burden of those honest coal operators who desire in every particular to operate in accordance with their wage agreements. The most full information as affecting the representations which I make is available in the departments of Commerce and Labor.
>
> The federal government upon occasion, and from time to time, has intervened in the coal industry. Not alone the operators but the miners have felt the weight of its influence and regulated their policies accordingly. In all respect, the mine workers now inquire whether the federal government desires to intervene to maintain the morality and integrity of the existing agreement in the bituminous coal industry.
>
> If it should occur that the federal government is disposed not to intervene for the protection of a meritorious wage agreement, might the mine workers believe that their own efforts in that direction may be considered as justified?

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The Great Northern Ry. will extend its oil-burning system eastward from Wolf Point, Mont., to Williston, N. D., which gives oil burners for 1,200 miles from Williston to Seattle. That is about two-thirds of the main line of the road which uses oil instead of coal.

## Massachusetts Utility Gets Winding Gulf Mines In $10,000,000 Deal

The Massachusetts Gas Companies, through their subsidiary, the New England Fuel & Transportation Co., have purchased the E. E. White Coal Co.'s properties at Glen White, W. Va., and the P. M. Snyder properties at Mount Hope, W. Va., as well as the distributing firm of Castner, Curran & Bullitt, which has been agent for the White and Snyder companies. The transaction is said to involve about $10,000,000. The New England companies will take over the three acquired companies about Jan. 1. Negotiations for their purchase have been under way a few months.

The E. E. White Coal Co. operates mines at Glen White and Stotesbury, producing about 1,000,000 tons annually. The mines of this company are two of the largest in the Winding Gulf district and are extremely well equipped.

The P. M. Snyder group of mines include the East Gulf Coal Co., Pemberton Fuel Co., Princewick Coal Co., Longbranch Coal Co., and the Glenco Coal Co. These companies have an aggregate annual output of about 800,000 tons.

Castner, Curran & Bullitt, Inc., which in the beginning of the Pocahontas field sold all of the tonnage produced by the Pocahontas operators, owns extensive docks in New England and a fleet of coal-carrying vessels, which also will be acquired by the new interests.

It is the plan of the new interests to conduct all of the companies purchased under their present names, retaining the corporate identity of each, until a new company can be organized and financed to take over the old corporations.

These interests have an option on another big coal producer in the Winding Gulf field and it is understood that they will entertain propositions from other operators with a view to acquiring additional property in the Beckley seam section of the Winding Gulf district.

E. E. White, head of the coal companies which bear his name, and Lemuel Burrows, head of the firm of Castner, Curran & Bullitt, will retire from active life in the coal business. P. M. Snyder, head of the other companies which are selling out, will go with the new concern as general manager of operations. Otherwise, the personnel of these various organizations will remain the same for the present.

# Hard-Coal Operators Prepared for Finish Fight in War Against Future Strikes; Scout Lewis' Suggestion

The operators more firmly resolved than ever that the anthracite industry must be freed from the menace of recurring strikes; the union officials seeking to win public sympathy while threatening the consumer with a general strike to cut off his supply of bituminous coal—this is the anthracite strike situation as the shutdown in the hard-coal region enters its fourth month.

Despite rumors of growing restiveness in the field, the international leaders of he United Mine Workers still cling to the position taken when John L. Lewis walked out of the conference room at Atlantic City last August and brought the wage negotiations to an abrupt end. The operators, then standing upon the proposition that they could consent to no change in wages which would increase the production cost of coal, now emphasize their counter-demand that the next contract between employers and employees shall contain arbitration provisions that will make future tie-ups impossible.

The latest restatements of the positions of the two sides may be attributed to the action of the operators in again resorting to advertising to make their position plain to the public. Copy placing responsibility for the suspension on the miners appeared early last week in the metropolitan press. A statement from President Lewis of the union, denying that responsibility and declaring that the union had been and was now willing to negotiate in a "give-and-take" spirit followed. To this the Anthracite Operators' Conference, which met at the Railroad Club in this city on Nov. 19, declined to make any formal reply.

### Cites Former Statements

Members of the conference, however, called attention to former statements of the operators' position made by S. D. Warriner at the opening of the wage negotiations last July and at Philadelphia on Oct. 26. In the latter statement Mr. Warriner declared that the operators were prepared to make a finish fight this year to reduce the labor cost per ton in the belief that the public had rebelled against existing prices and to exact a pledge against future strikes.

The conference, it was reported, also scouted the suggestion of Mr. Lewis for a long-term agreement at a fixed wage basis, insisting upon an arbitration clause. As a further clue to their position, a spokesman for the operators asserted that "the strike must go some time longer before a state of mind is reached from which any settlement can come."

Barring government intervention, the opinion is privately expressed that this "state of mind" can not be reached before 1926. Whether government intervention will come is, of course, the big question mark in the present situation. The administration at Washington has consistently held to a policy of noninterference, but there are a number of members of Congress who openly disapprove of that policy. The latest recruits to the ranks of dissenters are Senator Borah, who is reported to be gathering information in a private investigation of his own, and Representative Treadway, of Massachusetts, who has attacked the anthracite industry a number of times.

Pressure also is coming from various private and semi-public bodies. At a meeting in New York last Thursday, the National Council of Traveling Salesmen's Association adopted resolutions calling for an early settlement of the strike and named a special committee to work toward that end. On the other hand, the Washington (D. C.) Chamber of Commerce two days earlier passed a resolution heartily approving "the attitude of President Coolidge in respect to non-intervention by the federal government in the present industrial dispute in the anthracite fields to the end that the differences may be settled within the industry and thus give promise of remaining settled."

In the hard-coal field itself the anthracite operators' negotiating committee is looked to for the next move in the controversy. The New York *Times*' report of what transpired at the New York meeting of the operators last week was given wide publication in the region and a confirmation or denial of the details is expected.

In the meantime the news columns of the region papers are occupied with accounts of the latest move of the Scranton Chamber of Commerce in summoning three representatives of every chamber of commerce in the hard-coal belt to a conference Nov. 24 on the strike in Scranton.

The call for the meeting carried the signatures of Colonel L. A. Watres, president of the Scranton Chamber of Commerce; Eugene Giering, president of the Wilkes-Barre organization, and W. M. Dyatt, president of the Hazleton civic body.

### Mines Seek Financial Help

The District 1 headquarters of the United Mine Workers in Scranton is reported to be receiving many appeals for financial assistance from members of the union in various sections of the field. This is also true of the other districts, Nos. 7 and 9. It is understood that the matter will be taken up with international union officials this week and that a plan of distributing strike benefits will be laid out.

Nothing further is reported from Harrisburg on strike mediation moves by Governor Pinchot. It is understood that the Governor is awaiting the outcome of the latest developments in the situation. The Rev. J. J. Curran, of Wilkes-Barre, also is silent on the aim of his future plans as a mediator.

## More Injunctions Granted In Oklahoma

Temporary injunctions against general picketing by union miners of district 21 and other methods of interference employed by them against open-shop operations were granted to three large coal companies of Oklahoma in federal court at Muskogee early last week, it has been reported. Federal Judge R. L. Williams granted the injunctions.

Officers of district No. 21 of the United Mine Workers and "all other persons affiliated, confederating and arraigning" with them are restrained by the injunctions from "in any manner interfering with, obstructing or stopping the business of the plaintiff companies; from combining and conspiring together to destroy or injure any of said properties, and from inducing, compelling or persuading by means of threats, violence, fraud or deception miners now working in the plaintiffs' mines." A new clause, however, is inserted in the injunction by which the plaintiff companies are restrained from interfering in any way with picketing by three women and one man allowed to go near each mine.

The restraining orders concern actions of the union miners in connection with open-shop mining operations of the Coal Creek Coal Co., of Henryetta; the Wise-Buchanan company, of Kansas City, and the Missouri-Kansas-Texas Ry.'s mine near Coalgate.

## Adopt Plan to End Shortage Of Cars on L. & N.

Agents of the Louisville & Nashville R.R. and the Traffic Committee of the Hazard Coal Operators' Association have worked out a system by which a greater flow of empty cars will be received at the mines in southeastern Kentucky and relieve the shortage which has existed for the last month. Mines that require cars will specify the number needed, how many will be used exclusively on the L. & N. Lines and how many will be used on the connecting lines. In event that cars are loaded at the mines for other than those connecting lines for which they were sought an explanation will have to be made.

The Hazard operators said they would rather be assured of six days' work a week and an even flow of tonnage than to have higher prices with three or four days' work a week.

When the shortage from the nonunion fields first became apparent the Chesapeake & Ohio Ry. leased from railways in the anthracite fields more than one thousand cars to take care of the extra demand. The Louisville & Nashville, however, made the plea that the C. & O. could afford to do this because of its being interwoven with the Van Sweringen system, which would permit cars to stay on the rails of that road. The L. & N., however, pointed out that when its cars reached the Ohio River these were given over to other lines, which, having no interest at stake, cared not when such empties would be returned.

## Scott Turner Sworn In; Lyon and White Become Assistant Directors Dec. 1

Scott Turner, the recently appointed director of the Bureau of Mines, made a flying trip to Washington from Toronto last week to take the oath of office. He was sworn in Nov. 16. He will not take over the duties of the office, however, until Jan. 1. Mr. Turner accepted the position on the understanding that he would be allowed time to conclude private work in which he is engaged.

During his brief stay in Washington Mr. Turner declined to comment on any phases of the bureau's work or on its reorganization. This latter matter, he said, is being looked after by a highly competent committee representative of the industry. He expressed the opinion that the mining industry is particularly fortunate in having Secretary Hoover's help in the effort to solve some of its problems.

Effective Dec. 1 the work of the Bureau of Mines will be divided into two major branches, each to be presided over by an assistant director. One will be known as the technologic branch, with Dr. Dorsey A. Lyon as assistant director in charge. The other will be known as the economics branch, with C. P. White, the assistant director, in charge.

Under the technologic branch will be grouped the following divisions: Mining experiment station, safety service, miners' health and sanitation, mechanical engineering, metallurgy and mineral technology, petroleum engineering, explosives engineering and mining research. The Mine Safety Board and the experimental mine are grouped in this branch.

The economic branch is new and will deal with the statistical, industrial and commercial phases of coal, metals, other minerals and helium. The branch is subdivided into divisions as follows: Coal, petroleum, helium production, minerals and metals, and statistics. The Government Fuel Yard will be administered by the coal division. The minerals and metals division is divided into sections as follows: Iron ores, copper, lead and zinc, precious and rare metals; clays and other ceramic material, non-metallics.

### Transfers Commodity Division

Mr. White, the new assistant director, has been the chief of the commodity division in the Bureau of Foreign and Domestic Commerce devoted to coal. The work of this division has been transferred to the Bureau of Mines and its work will continue under the immediate direction of Mr. White.

Some thought has been given to a plan of retaining in the Bureau of Foreign and Domestic Commerce those activities pertaining to foreign trade of its Coal and Minerals divisions which now are to go to the Bureau of Mines. It now has been decided, however, that even that part of the work can be handled best by the division itself.

It is recognized that the bureau must be prepared to handle additional coal statistics. The hope is that a plan can be worked out whereby the figures can be submitted on a voluntary basis, or it may be that Congress will require the submission of basic statistics.

One of the important questions which will be discussed by the advisory committee at its next meeting, probably during the first week of December, will be the matter of safety work. This is one of the fundamental activities of the Bureau of Mines and some changes probably will be made to give added emphasis to its importance.

National Photo.

**New Director of Bureau of Mines Inducted Into Office**

Scott Turner, of Lansing, Mich., being sworn in as Director of the Bureau of Mines. Mr. Turner was appointed by Secretary Hoover to succeed H. Foster Bain, who recently resigned. E. W. Libbey (on the left), chief clerk of the department, is administering the oath. Secretary Hoover is standing on the right and C. P. White, Chief of the Coal Division, is looking over his shoulder.

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## Indorse Coal Sales Reports

Statistical programs for reporting coal sales and shipments were discussed at a get-together dinner of the members of the Huntington Coal Exchange and guests from Williamson and Charleston, held Oct. 23 at the Prichard Hotel, Huntington, W. Va. The delegation from Williamson explained the past sales report of the Bureau of Statistics of the Williamson Operators' Association.

In this system, which was first put into effect May 30, 1925 each reporting company mails to the chief statistician of the association a carbon copy of the acknowledgement of each order. At the end of the week the bureau sends out a report of all sales, showing amount, price and general destination. There is nothing in the report to indicate the identity of the shipper. At the start, only ten companies reported to the bureau, but at present twenty-three companies, representing 64 per cent of the tonnage of the Williamson field, are participating.

The scheme used by the Williamson operators is almost identical with that of the Hardwood Manufacturers' Association, which was adjudged by the U. S. Supreme Court as being in conformity with the Sherman anti-trust law. The National Coal Association has put its stamp of approval on the Williamson report and advocates that each local association adopt a similar plan.

At the Huntington meeting Geo. Bauswine, Jr., secretary of the Williamson Operators' Association, and Wm. N. Cummins, chairman of the statistical committee and manager of the Red Jacket Consolidated Coal Co., explained the details of the plan. Further enthusiastic comments were made by T. H. Huddy, manager Bailey Fuel Co.; Thos. DeVenney, manager, Portsmouth By-Products Coal Co., president of the Williamson association, and Geo. Patterson, manager, Sycamore Coal Co.

F. W. Schoew, president of the Huntington Coal Exchange, stated that most of the members of that body are submitting a weekly report of past sales, but that these reports are submitted in card form without mention of the consignee, instead of by carbon copy of acknowledgements of orders.

L. B. Ramsey, of the Logan Fuel Co. and president of the Charleston Coal Exchange, indicated his full belief in the benefits of a report such as published by the Williamson association and expressed the opinion that the Charleston exchange probably will adopt the same plan.

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Belgian coal output in September was 1,914,280 tons, as against 1,844,860 tons in August, 1,945,732 tons monthly average in 1924 and 1,903,460 tons monthly average in 1913; Coke output, 303,280 tons in September, compared with 308,970 tons in August, 346,650 tons monthly average in 1924 and 293,580 tons monthly average in 1913; Patent Fuels; 206,610 tons in September, as again 200,330 tons in August, 167,693 tons monthly average in 1924 and 217,220 tons monthly average in 1913.

# Anthracite Strike Must Be Settled on Basis Insuring Unbroken Supply Is Sentiment in National Capital

**By Paul Wooton**
Washington Correspondent of *Coal Age*

Observers in Washington are convinced that in the public's resort to the use of anthracite substitutes the country is experiencing the most extraordinary economic development since the buyers' strike of 1921. The movement has spread from New England throughout the whole anthracite-consuming territory. Its ominous possibilities to the industry are thought to be responsible for the signs of weakening which are coming from the camp of the United Mine Workers. Apparently the users of anthracite have come to the conclusion that they must get along this winter without that fuel if they do not want this trouble to recur every two years. The attitude of consumers is in decided contrast to that on previous occasions when the public expended its energy in yelling to the federal government for help.

Despite the fact that the swing to substitutes is assuming the proportions of a boycott there is strong conviction that the anthracite operators should refuse to open their mines until the United Mine Workers agree to some plan that will insure the public a continuous supply of the product. They are in a better position than they ever will be again, it is believed, to insist on the creation of some machinery that will guarantee continuity of supply. They will have strong public support in such a stand, with the chances all favoring ultimate success if they are willing to fight out the issue at this time.

The country gradually is learning that this principle of continuous production is of greater importance than are the more talked-of issues. The new determination of the people to get along and allow the parties to the strike to fight it out, rather than force a political settlement which would mean a truce only, is illustrated in Washington. The leading newspaper is carrying as a daily feature detailed instructions as to the burning of substitutes. It is co-operating with the retail coal dealers in the establishment of numerous demonstration stations throughout the city. Builders are allowing the use of new houses for fuel-burning demonstrations. Thousands of persons are being taught how to fire with bituminous coal.

It is evident that the people are willing to put up with smoke, dirt and inconvenience to be free from the uncertainties that come from frequent interruption of production. This uncertainty has more weight than has price. Washingtonians have paid whatever has been asked for anthracite with little grumbling. They are embracing substitutes because there is less danger of stoppage. They have the impression that both operators and men are guilty of incompetence in the conduct of their affairs when they allow such a situation to occur, but they are not much interested in trying to understand the cause of the dispute or in establishing who is to blame. Their temper is such that if they are kept from discarding anthracite permanently there will have to be some assurance that production will be interrupted less frequently.

It is believed that this feeling is so strong throughout the anthracite-using territory that consumers will not be satisfied with any settlement that does not provide guarantees against stoppage. Seven years of railroad operation without interruption of transportation has given the public confidence in the machinery which was set up to insure continuous service. There are those who think similar results could be obtained in the coal industry were ninety days' notice required of any desire to amend the wage agreement, were the contract to provide that production continue during negotiations and were provision made for arbitration if negotiations fail.

From the opening of the present controversy the anthracite operators have announced their willingness to arbitrate all of the questions under dispute. But the public's attitude makes it clear that arbitration is the big issue in this strike. What heretofore has been simply a statement of attitude on the part of the operators now well may be put forward as one of their demands, some reresentatives of the public think.

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## Nova Scotia Wages Too Low, Says Barrett

Silby Barrett, former provisional president of District No. 26, United Mine Workers, appearing as the principal witness on behalf of the miners at Sydney, C. B., at the Nov. 17 session of the Royal Commission investigating the Nova Scotia coal industry, stated that unrest among the miners was due to the low wages paid, more especially to the datal men. He said $3.35 was too low a rate for common underground labor, if a man hoped to maintain himself and family, and also too low in relation to the wages paid other workers. He believed contract men would be content to have datal men alone get the increase if they were satisfied the industry could not pay more. They would not stand for reduction in their own wages, even though datal men got increases, because even the contract men were not paid enough to live on. On the whole, he believed the contract men would agree to an adjustment.

Mr. Barrett testified that there was unfair distribution of work to some of the British Empire Steel Co.'s collieries, and said the company should distribute its orders over the whole field in order that all mines should share in the work.

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## *Complete Plans for Boston Coal Service Bureau*

Preliminary organization plans for the establishment of New England coal service bureaus to teach householders how to burn New River and Pocahontas coals have been completed. The Smokeless Coal Operators' Association of West Virginia has opened its first service bureau office in the Chamber of Commerce Building in Boston. D. B. Goode has been made executive secretary and Henry C. Eaton chief combustion engineer. Mr. Eaton is engaging a staff of demonstrators which will be enlarged as occasion requires.

The association, says R. H. Gross, chairman of the executive committee in charge of this feature of the work, is planning to open stations in Worcester, Springfield, Hartford, New Haven and Providence "in order to more effectively and promptly demonstrate to the householder of New England the value of Pocahontas and New River coals." The campaign launched was approved by the association at a meeting held at Boston on Nov. 6.

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## California Dealers Enjoined Against Unfair Methods

The Federal Trade Commission has issued a cease and desist order directed to the California Retail Fuel Dealers' Association, of Oakland, Calif., and others, in which the respondents are required to discontinue certain business practices found by the Commission to be unfair methods of competition. The Commission found that the respondents combined among themselves and co-operated together and with others to prevent certain co-operative associations from obtaining adequate or sufficient supplies of coal for their business from producers in Utah, Wyoming and elsewhere.

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## Penn State Loses Engineering Extension Director

Prof. N. C. Miller has resigned as head of the Pennsylvania State College engineering extension department to become director of extension at Rutgers University, New Brunswick, N. J.

While at Penn State Mr. Miller organized extension night schools in Wilkes-Barre, Scranton and Pittsburgh, where most of the courses are devoted to subjects pertaining to engineering work in the coal mines.

Professor Miller also developed a home study plan combining correspondence instruction with local supervision of students. This immensely increased the popularity and general usefulness of the elementary subjects already offered by the department to mining men. The later addition of college-grade subjects still further broadened the range of educational activities in this direction.

## Open-Shop Operations Spread in Union Hotbed Of Upper West Virginia

Another hotbed of the United Mine Workers in Northern West Virginia was invaded Nov. 17, when mines Nos. 88, 89 and 90 of the Consolidation Coal Co., at Wyatt, Harrison County, resumed operation. A force of men was put to work cleaning up the three mines, which dump coal over the same tipple. For years Wyatt has been one of the principal strongholds of the United Mine Workers.

Officials of the Consolidation Coal Co. reported last week that satisfactory progress was being made in the operation of mine No. 63, at Monongah, and O'Donnell mine, No. 57, in Fairmont, the only mine that the company has on the Monongahela Ry.

A new scare was thrown into the operators of northern West Virginia, when producers in the Logan and Kanawha fields tapped by the Chesapeake & Ohio Ry. began incursions into the trade territory of northern West Virginia. The C. & O. operators ask the Interstate Commerce Commission for an all-rail rate over the C. & O. via Charleston, Rencenverte and Durbin and thence over the Western Maryland by way of Elkins and Cumberland. Another tariff asked is to Charleston on the C. & O. and thence over the B. & O. by way of Gassaway. Buckhannon and Grafton and thence over the Allegheny Mountains east of Grafton to points in the East and New England.

If the rate is granted, which probably would carry a differential of $1.10 over the Fairmont rate, it will open up to the C. & O. operators the industrial sections and centers of population tapped by the Philadelphia & Reading through the Shippensburg and Rutherford (Pa.) gateways, and permit coal to move to Hershey, Lebanon, Harrisburg, Lancaster, Reading, Allentown and other cities in northern and northeastern Pennsylvania. Retail coal yards along the Western Maryland have asked for smokeless coal and if this rate is granted it will open up the markets of Hagerstown, Md.; Chambersburg, Gettysburg, York, Pa.; Baltimore and other commercial and industrial sections to the C. & O. operators.

### Labor Shortage in Strike Zone

In a statement issued recently, Bittner said that for the first time since the strike started, April 1, there was a labor shortage in the northern West Virginia fields. "Many men who have been working in the non-union mines of northern West Virginia," said he, "are now leaving and going to other fields, principally the Connellsville coke region."

In the first three days of last week 5,002 cars of coal were produced at non-union mines compared to 5,325 cars in the corresponding period of the previous week. The drop in open-shop tonnage is believed to be due to the recent heavy pay day. Union mines in the first half of last week produced 883 cars, compared to 781 cars in the first three days of the previous week.

## *1,000 More Frick Ovens In; Labor Trouble Appears*

Labor troubles at the mines of the Hillman Coal & Coke Co. and the W. J. Rainey Co. in the Connellsville (Pa.) field had the effect of curtailing shipments last week, although not to any great extent, it is asserted. It is known, however, that one or two consumers of coke had to buy current supplies in the open market because of the interrupted flow. The H. C. Frick Coke Co. started 1,000 additional ovens in the Connellsville field during the week and it is feared that this interest will draw so much of the available man power in the coke field that the independents might be forced to take cognizance of the men's demand that they pay the Frick wage scale, which is $7.50, compared to their $5.

The exact number of men that are out on spasmodic strikes in the coke field is unknown, but estimates place the number from 500 to 1,500.

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Louis Fodor, of Logan, entered a plea of guilty of using the mails to defraud in the federal court at Elkins, Nov. 18, and was sentenced to serve four months in jail in Ohio County. He had been in jail in Fairmont for some time. Fodor, it was alleged, received $500 from the New England Fuel & Transportation Co., which operates mines at Grant Town and Everettsville, for the purpose of furnishing miners, which the company claims he failed to do, or to return the cash.

### Hearings Are Postponed

Hearings of conspiracy charges against Ettor Del Guzzo and James Feeley, international representatives of the United Mine Workers, and six union miners were postponed until the next session of the Taylor County Criminal Court in April, according to information received from Grafton Nov. 20. The bail was reduced from $3,000 to $1,000. The state asked for the continuance.

The United Mine Workers announced Nov. 20 that they are now engaged in erecting barracks at Ida May, Carolina, Baxter, Watson, Gaston, Montana, Hutchinson and the West Fairmont Shaft, places where plants of the Consolidation Coal Co. are located.

Van A. Bittner, chief international representative of the union in northern West Virginia, on Nov. 20 sent the following telegram to James J. Davis, Secretary of Labor:

"The Consolidation Coal Co., which abrogated its wage agreement with the United Mine Workers, is evicting hundreds of miners and their families who have been locked out since April 1. This should demonstrate to the American government that the flimsy excuses made by Clarence W. Watson, president of the Consolidation Coal Co., that the company was enforcing the 1917 wage scale by an agreement with the miners are not founded upon truth and are without foundation in fact."

## Many Oppose Further Northeast Rate Cuts; I. C. C. May Decide Soon

Opposition to an extension of the Interstate Commerce Commission's order establishing lower through-rail rates on soft coal from West Virginia fields to New England and adjacent states was voiced before Commissioner Campbell, in Washington, Nov. 19 and 20, at the concluding sessions of hearings on this subject, which were begun in New York City. A rather early decision is expected from the Commission and it would not be surprising to see the order extended, to some extent, perhaps as a temporary measure. The smokeless field of West Virginia already has lower rates on lump and egg to the Northeast. An extension was urged to include mine-run and to open up routes from other fields as well.

The opposition was expressed by the carriers, led by the Baltimore & Ohio and the Pennsylvania railroads, by representatives of the bituminous operators of the Pittsburgh, central Pennsylvania and Somerset fields, and by Attorney General Woodruff and Chairman Ainey, of the Public Service Commission, officially representing the State of Pennsylvania.

The main point of opposition was that there is no necessity for an extension of the order, as there is ample soft coal in Pennsylvania to fill the requirements of New England and sister states at a lower freight rate. To transport coal from the Southern fields across the Pennsylvania fields would be a waste of car capacity and other transportation facilities, it was argued. There are 741 idle soft-coal mines on the lines of the Pennsylvania R.R., the spokesman for that carrier testified, of which more than half are in the low-volatile field of Pennsylvania. The same spokesman said there are 1,200 cars of coke at Perth Amboy awaiting consignment for lack of demand.

In the final hours of the hearing spokesmen for the carriers, while not relenting in opposition to any extension of the order, asked that if an extension be declared, it be made temporary, with a definite date of expiration without prejudice to future proceedings toward a permanent order.

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## Gets Five West Virginia Mines

Basil H. Lucas, of Shinnston, W. Va., representing Eastern capitalists known as the Acme Coal Co., has taken over the mining interests of J. Edgar Long, of Clarksburg, W. Va., according to reports. These include the Burke mine of the J. E. Long Coal Co., Kester mine of the Long Fuel Co., South mine of the Interstate Fuel Co., Nancy mine of the Castle Fall Coal Co. and Rex mine of the Hamilton Industrial Corporation. Newspaper reports indicate that Mr. Long was East recently working out details. It is reported that he will continue his connection with the J. E. Long Coal Co., a wholesale firm, with M. C. Raikes in charge. It is reported that he will devote more time to the interests of the Union Explosives Co., of which he is president and treasurer.

# President Coolidge Warns Against Extravagance and Inefficiency of Government Activity in Business

National and world service opportunities open to American business were eloquently discussed by President Calvin Coolidge in an address to the Chamber of Commerce of the State of New York at the Waldorf-Astoria Hotel, New York City, Nov. 19. Something far above "a sordid desire for gain" was the foundation of true business, the President told his audience. How business may best measure up to its opportunities and how the national government can co-operate in advancing those aims were themes which were emphasized again and again during the course of the speaker's remarks.

A better understanding of the problems of government by business and of business by government is much to be desired, said the President. Even more important, however, is "the largest possible independence between government and business. Each ought to be sovereign in its own sphere. When government enters the field of business with its great resources, it has a tendency to extravagance and inefficiency, but, having the power to crush all competitors, likewise closes the door of opportunity and results in monopoly." Business attempting to run government leads to the setting up of special privileges.

"It is always a problem in a republic," continued the speaker, "to maintain on the one side that efficiency which comes only from trained and skillful management without running into fossilization and autocracy, and to maintain on the other hand that equality of opportunity which is the result of political and economic liberty without running into dissolution and anarchy." The economic and social status of the citizens of the United States shows that this country is advancing along the right road in its efforts to maintain this balance and to preserve both economic and political freedom.

### Defines "True Business"

"True business represents the mutual organized effort in society to minister to the economic requirements of civilization. It is an effort by which men provide for the material needs of each other. While it is not an end in itself, it is the important means for the attainment of a supreme end. It rests squarely on the law of service. It has for its main reliance truth and faith and justice. In its larger sense it is one of the greatest contributing forces to the moral and spiritual advancement of the race."

Because business plays such a big rôle, the promotion of its success has been a constant aim of the federal government. The effort has been to reduce interference to the minimum. Except for safety, health and taxation, the law has entered little into the work of production. Legislation has been more exacting in the field of distribution because "the whole policy of the government in its system of opposition to monopoly and its public regulation of transportation and trade has been animated by a desire to have business remain business.

"It is my belief that the whole material development of our country has been enormously stimulated by reason of the general insistence upon the part of the public authorities that economic effort ought not to partake of privilege and that business should be unhampered and free. This could never have been done under a system of freight-rate discriminations or monopolistic trade associations. These might have enriched a few for a limited period, but they never would have enriched the country, while on the firmer foundation of justice we have achieved even more ample individual fortunes and a perfectly unprecedented era of general prosperity."

The more favorable public attitude toward large production units leaves the government free to advance from the problems of reform and repression to those of economy and construction. Through the Department of Commerce great strides have been made in the elimination of waste. The government has aided in the post-war regeneration by a program of economy in its own operations. "By an enormous reduction in taxation, it has released great amounts of capital for use in productive effort." As a result of this devotion to efficiency and economy, wages have been advancing and the commodity index declining.

### Not a Selfish Prosperity

American prosperity, maintained the President, has not been a selfish prosperity. Out of surplus savings the United States has advanced vast sums for Old World, South America and Far East refinancing. Such loans, "if rightly directed, ought to be of benefit to both lender and borrower. If used to establish industry and support commerce abroad, through adding to the wealth and productive capacity of these countries, they create their own security and increase consuming power to the probable advantage of our trade. But when used in ways that are not productive, like the maintenance of great military establishments or to meet municipal expenditures which either should be eliminated by government economy or supplied by taxation, they do not appear to serve a useful purpose and ought to be discouraged."

The efforts and accomplishments of the United States to assist in European rehabilitation, "whether they be appreciated at home or received with gratitude abroad, which have been brought about by the business interests of our country, constitute an enormous world service. Others have made plans and adopted agreements for future action which hold a rank of great importance. But when we come to the consideration of what has been done, when we turn aside from what has been promised to examine what has been performed, no positive and constructive accomplishment of the past five years compares with the support which America has contributed to the financial stability of the world. It clearly marks a new epoch."

## *New York Central Orders 3,000 Gondolas*

Orders for 4,500 freight cars to cost approximately $9,000,000 have been placed by the New York Central Railroad, one of the largest equipment orders placed this year. The Pullman Company will supply 1,000 gondolas of this order, the General American Car Co. 1,000, the Standard Tank Car Co. 500 and an additional 500 has been ordered from the Illinois Car & Manufacturing Co. An order for 1,500 55-ton new steel box cars has been placed with the American Car & Foundry Co.

## Seek Institute's Suffrages

On the official ballot of the Coal Mining Institute of America for the election of Dec. 7 appear the names of W. C. Hood, assistant general superintendent of mines, H. C. Frick Coke Co., Uniontown, Pa., and R. Dawson Hall, engineering editor, *Coal Age*, for president, only one of whom may be elected.

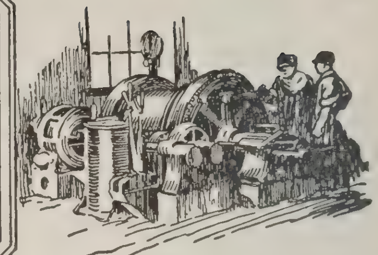
Vice-presidential condidates are: Thomas G. Fear, general manager, Inland Collieries Co., Indianaola, Pa.; A. C. Fieldner, superintendent, Pittsburgh Station, U. S. Bureau of Mines, Pittsburgh, Pa.; J. J. Rutledge, state mining engineer, Baltimore, Md.; A. C. Callen, professor in charge of the mining department University of Illinois, Urbana, Ill.; Frank R. Lyon, operating vice-president, Consolidation Coal Co., Fairmont, W. Va., and N. D. Levin, engineer, mining department, Jeffrey Manufacturing Co., Columbus, Ohio, only three of whom can be elected.

For secretary-treasurer H. D. Mason, Jr., mining engineer, Ebensburg, Pa., and J. J. Maloney, salesman, Goodman Manufacturing Co., Pittsburgh, Pa., are nominated. Twenty names are submitted for managing directors, only ten of whom can be elected. Other names for any or all these offices can be added to the ballot if the voter so wishes.

## C. & O. to Lease 6,000 Cars

Anthracite strike conditions making available an additional supply of empty cars, the Chesapeake & Ohio Ry. will in the near future, it is reported, obtain at least 6,000 idle cars under lease in order to forestall any car shortage. The road, it is stated, has already made application for these cars and it is believed that the order will be approved within a few days. There has been no serious complaint as to the way mines are being served along the Chesapeake & Ohio although certain type of equipment has run short at week-end periods.

# Practical Pointers For Electrical And Mechanical Men



## Changing Location of Arrester Remedies Trouble Caused by Storms

At the Nuttallburg (W. Va.) mine of the Fordson Coal Co. nearly every severe electrical storm caused trouble with the 2,300-volt synchronous motor of the automatic underground substation. This substation is fed by a 1,000-ft., three-conductor, lead-and-armored cable which is carried down through an airway slope. A two-mile pole line extending along the top of the mountain from the head of the slope to the power company's substation is located where it is much exposed to lightning.

Originally the arresters were located on the pole where the armored cable terminates. The choke coils can be seen in Fig. 1. The ground lead of the arrester was connected to the armor of the cable and to a ground wire extending about 150 ft., along the surface, to a connection in moist earth.

### ARRESTERS MOVED AWAY

This did not afford the proper protection, so an attempt was made to remedy the situation. The ground connection was cut loose from the armor and the arresters moved to a point about half a mile from the slope where they were installed on a pole which stands beside a small stream of water. The new location is shown in Fig. 2. Instead of a wire leading down from each line to each respective arrester, strain insulators are used in the line and a loop brought down the pole. The arresters are connected to the bottom of the loops.

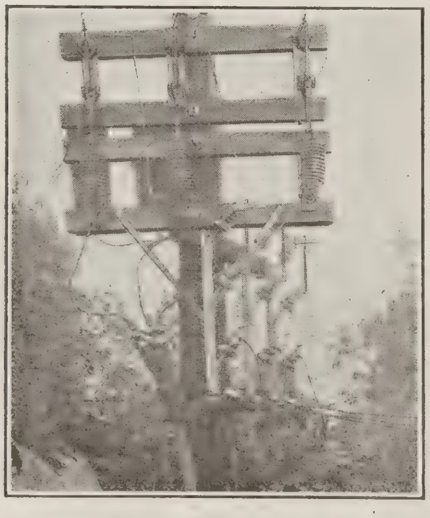


**Fig. 1—Arresters Were Ineffective Here**
The 2,300-volt armored cable which enters a slope at this point feeds an automatic substation inside the mine. Almost every severe electrical storm caused trouble in the substation.

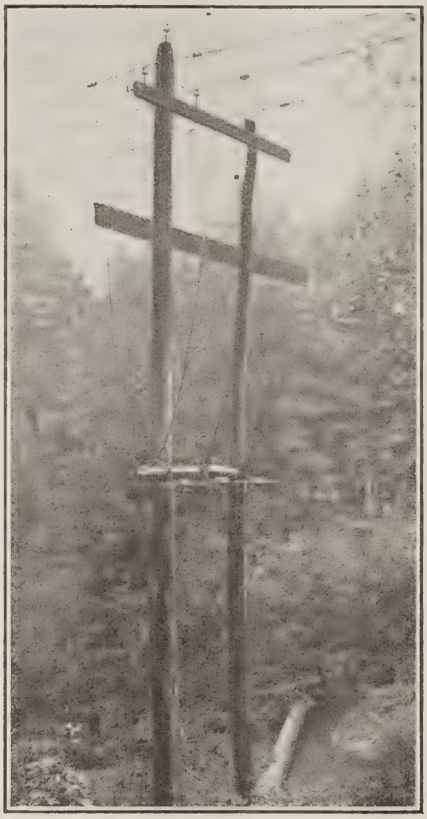


**Fig. 2—Good Grounds Prevent Troubles**
This place is about half a mile from the slope. The line wires loop down to the arresters which are not over 13 ft. from a ground connection made in the stream of water.

Since the location of the arresters was changed many severe electrical storms have visited the locality but have had no apparent effect on the substation equipment.

## Machine Relieves Lathes of Armature Banding

Wherever armatures are rewound in the mine shop they must be banded before the repair job is complete. As a rule such work is done in an engine lathe, this machine being operated in a reverse direction with the back gears thrown in. Banding is thus a process that requires some care and considerable time. If done in an engine lathe it keeps this machine from performing other and possibly equally essential work.

At one of the mines of the Old Ben Coal Corporation down in southern Illinios a special banding machine has been built that completely relieves the shop lathes from this kind of work. This machine is constructed along the general lines of a lathe and operates in a similar manner. The bed is built up of structural shapes and plates, as is also the tail stock. The headstock consists of a worm or spiral reduction gear from an old mining machine. To this gear a small motor is attached. The main shaft on this reduction gear has been provided with a slotted face plate and the end turned to a point or center.

### CARRIAGE NOT NECESSARY

A long threaded shaft extends through the tail stock, its forward end being threaded through a block or nut and its rear end sliding through a similar but unthreaded block provided with a set screw to hold it rigidly in any desired position. The banding wire is held on a spool attached to the wall some distance in rear of the bander. The wire is, of course, passed through a suitable tension. No carriage is required on this machine and motion is transmitted from the face plate to the armature shaft in the usual manner, that is, by means of a single bent or crooked-tail dog.

This bander was comparatively inexpensive to build and performs the work it was designed to accomplish as accurately as could a far costlier lathe. Best of all it relieves the other machines in the shop where it is installed from the time-consuming job of banding armatures, allowing them to proceed with the work of metal cutting for which they are primarily intended.

## Two-Wire Circuits Require Fewer Frogs

An unusual practice but one which has several advantages is that of eliminating trolley frogs and instead using two trolley wires. This practice is followed at the Balkan mine of the Southern Mining Co., at Balkan, Bell County, Ky.

**No Trolley Frog Needed**

From this point to the tipple a feeder would be required if there were but one trolley. The two wires are connected at frequent intervals so that one acts as a feeder to the other.

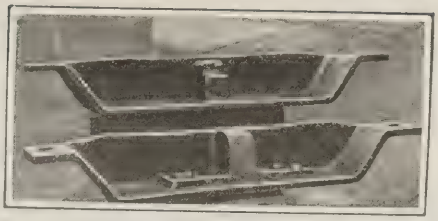
Where two tracks converge at a point from which a conductor of greater carrying capacity than No. 0000 is advisable, two trolley wires are continued a few inches apart. Tie connections are made at frequent intervals. The hanging of the extra trolley wire differs little in cost from the hanging of a feeder on the same supports as the trolley.

Eliminating the trolley frog cuts out delays caused when the pole comes off and also eliminates delays caused by poles being broken when catching in the frog. Torn down trolley wires are also not so frequent. Other advantages of the double-trolley construction are, greater safety to the motormen, and the elimination of the expense of frog renewals.

## Suspension Lugs Are Made Strong as the Bar

While the armature of a spur-geared locomotive is exerting a torque in one direction the field is exerting a torque in the other. The field frame or motor box is kept from rotating by a suspension bar which also supports the weight of one side of the motor. The frequent and sudden starting and stopping of the locomotive imposes severe strains on this bar.

The accompanying illustration shows how, at the mines of a big West Virginia coal mining company the strength of the suspension-bar lugs of the locomotives, has been increased. The upper bar in the illustration is equipped with a type of lug formerly used. It consists of a small block of steel fastened to the bar by two ⅝-in. rivets and also electrically welded around the edges.



**Lugs of the Old and New Types**

The old type lug shown in the upper part of the illustration was the weak spot in these suspension bars. Two angles placed back to back, with a filler between, and attached with rivets and arc welding describes the improved type.

The lower bar has on it a new type lug. This is formed by two short pieces of 4x6x¾-in. angle iron pieces placed back to back, with a ½-in. welded filler between. On each side there are three ⅝-in. rivets, and the whole lug is arc welded around the edges. This lug apparently will stand as much strain as the rest of the bar. A weak detail of construction is thus effectively eliminated.

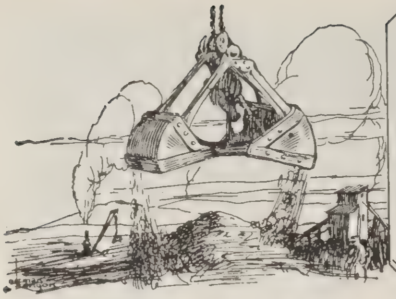
## Use of Colors Simplifies Armature Winding

Cable-reel armatures of the gathering locomotives used by the Island Creek Coal Co. are of the ring-wound type. The work of rewinding these armatures in the company's shop was looked upon as a tedious job, and one in which mistakes were easy to make. The use of colored wire, however, has been found to reduce the chances of error. On a popular type 500-volt armature pictured here there are eighty turns per slot. It is not practical to put on all of these turns at one winding because the space is limited, and if attempted a smooth job cannot be obtained. Consequently, the coils are wound upon the laminations, six turns at a time, that is, all coils which go through one section of the spider are each given six turns. This procedure is repeated until the section is complete.

The large number of coil ends involved makes the work tedious and it is difficult to find the right coil end each time. The work has lately been simplified by the use of magnet wire with two different colors. When an armature is rewound the colors are alternated in the various slots. Before the two colors were adopted errors, whenever made, were due to interchanging the ends of adjacent coils. The use of different colored wires eliminates this chance and saves much time in winding.

**Cable-Reel Armature Wound with Wires Having Two Different Colors Makes Work Easier**

To do a smooth job in the limited space for the winding, the coils must be put on a few turns at a time. It was a tedious and difficult job to select the proper coil ends to complete the winding before the scheme of using two colors was put into use.



# Production And the Market

## Coal Market Develops Halting Tendency Due to Rumors and Mild Weather

A reactionary tendency has appeared in the coal market during the last week, due in large measure to uncertainty brought about by rumors that the anthracite strike is nearing an end. A definite basis for such a belief is rather hard to find in view of the fact that predictions that the suspension will drag until well toward spring are not lacking. Retail dealers and domestic consumers are showing a hesitant attitude, however, compared with the activity of a few weeks ago. The tapering off is still most marked in screened and sized coals, whereas mine-run continues to move quite freely and prices retain considerable firmness. The steam trade is fairly stable, industrials taking full quotas in most instances on contracts, but showing no disposition to increase orders.

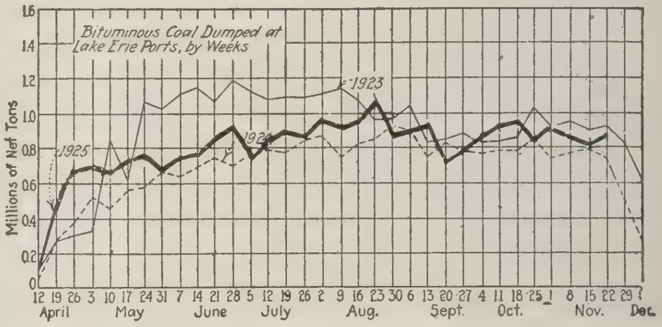
West Virginia smokeless is in less demand in Midwestern markets, dealers in many instances having switched to less costly West Virginia splint and Kentucky grades. Eastern demand for smokeless is still strong, however, though the Pittsburgh district notes a further decline in business from that quarter. Movement from central Pennsylvania is in good volume, but prices on prepared sizes have sagged a little.

Mild weather has been an additional handicap in Midwest producing fields. Franklin County (Ill.) producers have advanced prices 25c. on all sizes, but new business has been scarce and "no bills" are plentiful. The Indiana market is extremely quiet.

Coal traffic through the Cincinnati gateway registered a sharp upturn last week, when 14,437 cars went through, an increase of 1,426 cars over the preceding week and 3,192 over the corresponding week of last year. Headed for the lakes were 2,414 cars, a gain of 311 over the previous week. The trade is faced with the usual disturbing problem at this time concerning the effect of the cessation of lake shipments.

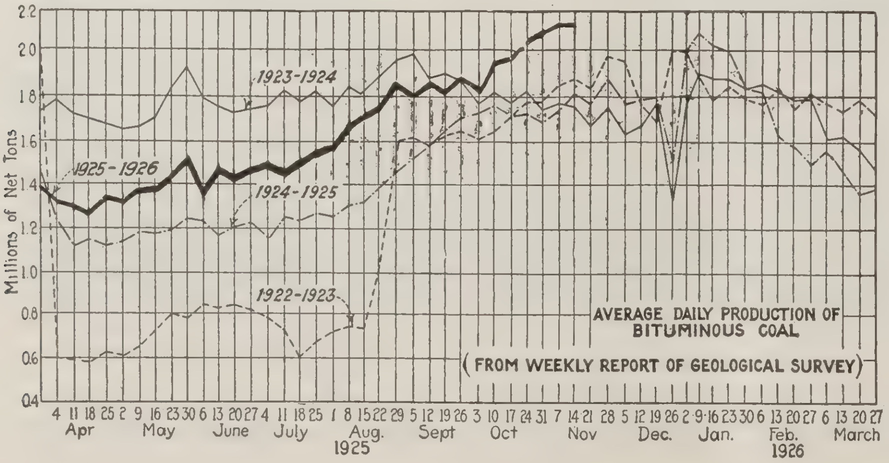
As anthracite has almost totally vanished from the wholesale market and retail stocks are fast diminishing the use of substitutes is likely soon to become general, unless, of course, something should come of the efforts to end the suspension. Coke still seems to have preference, though it has suffered from the mild weather and the restraining influence of strike-settlement rumors.

Output of bituminous coal in the week ended Nov. 14 is estimated by the Bureau of Mines at 12,167,000 net tons, compared with 12,171,000 tons in the preceding week. Anthracite production in the week ended Nov. 14 totaled 32,000 net tons, an increase of 4,000 tons over the previous week.



*Coal Age* Index of spot prices of bituminous coal on Nov. 23 stood at 192, the corresponding price being $2.32, compared with 190 and $2.30 on Nov. 16.

Dumpings of coal at Lake Erie ports during the week ended Nov. 22, according to the Ore & Coal Exchange, were: Cargo, 822,130 net tons; steamship fuel, 40,684 tons—a total of 862,814 net tons, compared with 803,796 tons in the preceding week. Hampton Roads dumpings in the week ended Nov. 19 totaled 332,720 net tons, against 402,152 tons in the previous week.



### Estimates of Production

(Net Tons)

| BITUMINOUS | 1924 | 1925 |
|---|---|---|
| Oct. 31 (*a*) | 10,405,000 | 12,485,000 |
| Nov. 7 (*a*) | 9,695,000 | 12,171,000 |
| Nov. 14 (*b*) | 10,466,000 | 12,167,000 |
| Daily average | 1,869,000 | 2,135,000 |
| Cal. yr. to date | (*c*) 412,355,000 | 443,716,000 |
| Daily av. to date | 1,538,000 | 1,650,000 |
| **ANTHRACITE** | | |
| Oct. 31 | 1,444,000 | 18,000 |
| Nov. 7 | 1,592,000 | 28,000 |
| Nov. 14 | 1,674,000 | 32,000 |
| Cal yr. to date | (*c*) 78,920,000 | 61,801,000 |
| **COKE** | | |
| Nov. 7 | 140,000 | 292,000 |
| Nov. 14 | 150,000 | 295,000 |
| Cal. yr. to date | (*c*) 8,372,000 | 8,781,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Market Has General Let-Up

In the past week there was a general let-up in the Midwest coal-producing fields. While it was good news that the Franklin County operators had advanced prices 25c. on all grades and sizes, orders have been so scarce that it is doubtful whether southern Illinois operators will benefit. Quite a number of these producers, whenever they have a chance to get an order, are willing to sell at the old prices. Plenty of orders are still booked for 6-in. lump, but there is little demand for egg, and No. 1 Franklin County nut, unless the operator has contracts to take care of this size, is a drug on the market.

The Indiana market is very quiet. Two weeks ago not a car of 6-in. lump was to be had. Fourth and Sixth Vein Indiana coals, which are important in the domestic trade, are again offered freely without any increase in price. There is no demand whatsoever for Fifth Vein coal and operators are cutting each others' prices in an effort to move a few cars of lump coal to take care of the screenings contracts they may have. Western Kentucky coal is again a day to day proposition, all orders having been cleaned up, and prices are not quite as firm. We understand there is considerable consignment coal around again and the operators are willing to take almost any price offered.

While prices on eastern Kentucky and West Virginia stuff are firm, the coa's are offered at such low prices by jobbers who have the coal bought and have it in transit that the consumers, of course, will take any good coal that is offered cheap. Car supply has improved slightly and old orders are being cleaned up, but very few new ones are coming in. The general outlook is not very promising, and it would not be surprising if prices were cut in an effort to move coal.

It seems as if buyers have gone on a strike. Pocahontas lump has been sold recently at $5 direct to dealers, although as a rule the quotations to wholesalers are $5@$5.25. Dealers in many instances have turned to cheaper high-grade West Virginia splint or western Kentucky coal instead of Pocahontas, because the public was unwilling to pay the prices recently prevailing.

The weather has been seasonable in southern Illinois but there was no unusual demand last week in the Williamson-Franklin County field except for lump, and that was on old orders. New orders are not coming in. Egg is beginning to slow up and nut and screenings have been heavy right along. The advance on lump has not taken very well with the country trade and the talked-of increase on egg and nut is not stimulating business as it was hoped it would. The shaft mines are still getting four and five days a week but they all have "no bills" every day and some mines are unable to work occasionally on that account. Railroad tonnage is fairly good. The strip mines are getting good time in and railroad tonnage is good and they are making prices to meet competition from west Kentucky.

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Nov. 24 1924 | Nov. 9 1925 | Nov. 16 1925 | Nov. 23 1925† |
|---|---|---|---|---|---|
| Smokeless lump.......... | Columbus.... | $4.25 | $5.25 | $6.25 | *$5.00@$5.50* |
| Smokeless mine run...... | Columbus.... | 2.00 | 2.35 | 3.10 | 3.00@ 3.25 |
| Smokeless screenings..... | Columbus.... | 1.25 | 2.05 | 2.60 | 2.50@ 2.75 |
| Smokeless lump.......... | Chicago..... | 3.85 | 6.25 | 5.75 | *5.00@ 5.25* |
| Smokeless mine run...... | Chicago..... | 1.85 | 2.50 | 2.50 | 2.25@ 2.75 |
| Smokeless lump.......... | Cincinnati... | 4.00 | 5.50 | 5.50 | *5.00@ 5.50* |
| Smokeless mine run...... | Cincinnati... | 1.85 | 2.55 | 2.50 | *2.25@ 2.50* |
| Smokeless screenings..... | Cincinnati... | .95 | 2.00 | 2.00 | *1.75@ 2.00* |
| *Smokeless mine run..... | Boston...... | 4.25 | 4.95 | 5.00 | **5.25@ 5.50** |
| Clearfield mine run....... | Boston...... | 1.95 | 2.10 | 2.05 | **1.90@ 2.40** |
| Cambria mine run....... | Boston...... | 2.30 | 2.40 | 2.35 | 2.10@ 2.60 |
| Somerset mine run....... | Boston...... | 2.05 | 2.20 | 2.20 | **2.00@ 2.50** |
| Pool 1 (Navy Standard).. | New York... | 2.80 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pool 1 (Navy Standard).. | Philadelphia.. | 2.70 | 2.95 | 2.95 | 2.80@ 3.10 |
| Pool 1 (Navy Standard).. | Baltimore.... | 2.30 | 2.15 | 2.15 | **2.20@ 2.25** |
| Pool 9 (Super. Low Vol.). | New York... | 2.10 | 2.25 | 2.30 | 2.15@ 2.50 |
| Pool 9 (Super. Low Vol.). | Philadelphia.. | 2.15 | 2.30 | 2.30 | 2.20@ 2.45 |
| Pool 9 (Super. Low Vol.). | Baltimore.... | 1.70 | 1.95 | 1.95 | **2.00@ 2.05** |
| Pool 10 (H.Gr.Low Vol.).. | New York... | 1.85 | 2.00 | 2.00 | 1.85@ 2.20 |
| Pool 10 (H.Gr.Low Vol.).. | Philadelphia.. | 1.75 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pool 10 (H.Gr.Low Vol.).. | Baltimore... | 1.55 | 1.80 | 1.80 | **1.90@ 1.95** |
| Pool 11 (Low Vol.)....... | New York . | 1.60 | 1.65 | 1.70 | 1.65@ 1.75 |
| Pool 11 (Low Vol.)....... | Philadelphia. | 1.45 | 1.90 | 1.90 | 1.85@ 2.00 |
| Pool 11 (Low Vol.)....... | Baltimore... | 1.45 | 1.55 | 1.55 | **1.60@ 1.70** |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.).. | New York... | 1.50 | 1.55 | 1.55 | 1.50@ 1.65 |
| Pool 54-64 (Gas and St.).. | Philadelphia | 1.50 | 1.60 | 1.60 | 1.55@ 1.70 |
| Pool 54-64 (Gas and St.).. | Baltimore.... | 1.45 | 1.55 | 1.55 | **1.65@ 1.70** |
| Pittsburgh sc'd gas....... | Pittsburgh .. | 2.40 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pittsburgh gas mine run.. | Pittsburgh .. | 2.10 | 2.35 | 2.35 | 2.25@ 2.50 |
| Pittsburgh mine run (St.). | Pittsburgh... | 1.85 | 2.20 | 2.15 | 2.10@ 2.25 |
| Pittsburgh slack (Gas).... | Pittsburgh... | 1.15 | 1.30 | 1.45 | 1.40@ 1.50 |
| Kanawha lump.......... | Columbus.... | 2.55 | 2.60 | 3.10 | 2.75@ 3.50 |
| Kanawha mine run....... | Columbus.... | 1.55 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings...... | Columbus.... | .90 | 1.20 | 1.20 | 1.15@ 1.25 |
| W. Va. lump........... | Cincinnati... | 2.55 | 3.25 | 3.50 | *3.00@ 3.50* |
| W. Va. gas mine run..... | Cincinnati... | 1.40 | 1.80 | 1.65 | *1.50@ 1.75* |
| W. Va. steam mine run... | Cincinnati... | 1.40 | 1.60 | 1.55 | *1.40@ 1.60* |
| W. Va. screenings....... | Cincinnati... | 1.00 | 1.35 | 1.35 | *1.15@ 1.25* |
| Hocking lump.......... | Columbus.... | 2.55 | 2.75 | 3.10 | 3.00@ 3.25 |
| Hocking mine run........ | Columbus.... | 1.60 | 1.65 | 1.65 | 1.50@ 1.85 |
| Hocking screenings....... | Columbus.... | .80 | 1.20 | 1.25 | 1.20@ 1.30 |
| Pitts. No. 8 lump........ | Cleveland.... | 2.30 | 2.55 | 2.55 | 2.10@ 3.00 |
| Pitts. No. 8 mine run..... | Cleveland.... | 1.85 | 1.90 | 1.95 | 1.90@ 2.00 |
| Pitts. No. 8 screenings.... | Cleveland.... | 1.20 | 1.40 | 1.40 | **1.50@ 1.60** |

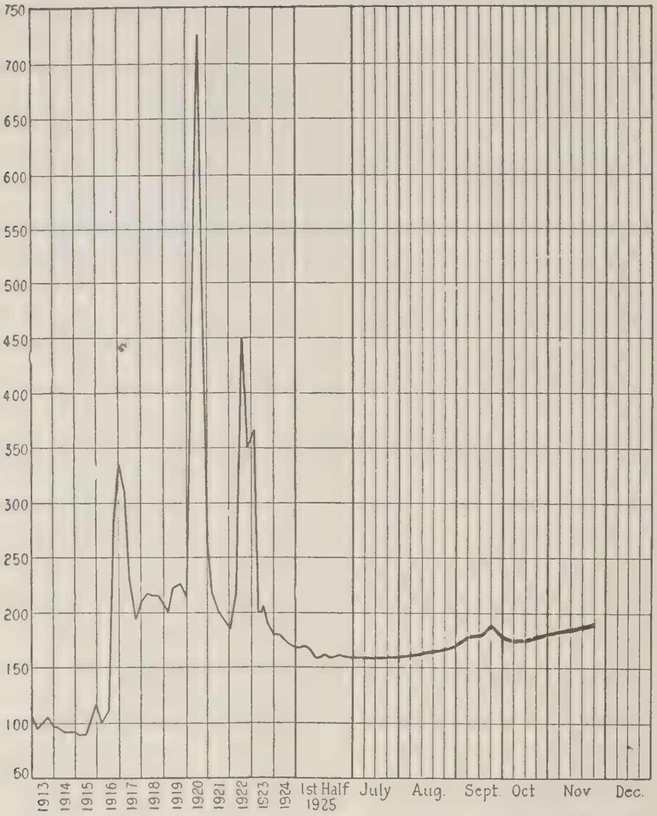
| Midwest | Market Quoted | Nov. 24 1924 | Nov. 9 1925 | Nov. 16 1925 | Nov. 23 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump....... | Chicago..... | $3.35 | $3.25 | $3.50 | **$3.75** |
| Franklin, Ill. mine run.... | Chicago..... | 2.35 | 2.35 | 2.35 | **2.50@ 2.75** |
| Franklin, Ill. screenings.... | Chicago..... | 1.45 | 1.60 | 1.60 | **1.75@ 2.00** |
| Central, Ill. lump......... | Chicago..... | 2.85 | 2.85 | 3.00 | 3.00 |
| Central, Ill. mine run..... | Chicago..... | 2.20 | 2.20 | 2.20 | 2.15@ 2.25 |
| Central, Ill. screenings..... | Chicago..... | 1.30 | 1.55 | 1.40 | 1.35@ 1.50 |
| Ind. 4th Vein lump ..... | Chicago..... | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run... | Chicago..... | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings.. | Chicago..... | 1.55 | 1.80 | 1.80 | 1.75@ 1.90 |
| Ind. 5th Vein lump ..... | Chicago..... | 2.75 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run... | Chicago..... | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings.. | Chicago..... | 1.20 | 1.40 | 1.40 | 1.35@ 1.50 |
| Mt. Olive lump. ........ | St. Louis..... | 3.00 | 2.85 | 2.85 | 2.75@ 3.00 |
| Mt. Olive mine run...... | St. Louis..... | 2.35 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings..... | St. Louis..... | 1.10 | 1.75 | 1.75 | 1.75 |
| Standard lump ......... | St. Louis..... | 2.75 | 2.25 | 2.40 | 2.35@ 2.50 |
| Standard mine run....... | St. Louis..... | 1.95 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings...... | St. Louis..... | .65 | 1.15 | .85 | .75@ 1.00 |
| West Ky. block......... | Louisville.... | 3.00 | 2.10 | 2.10 | 2.00@ 2.25 |
| West Ky. mine run...... | Louisville.... | 1.60 | 1.35 | 1.35 | 1.25@ 1.50 |
| West Ky. screenings...... | Louisville.... | .90 | .80 | .80 | .65@ 1.00 |
| West Ky. block......... | Chicago..... | 2.75 | 2.35 | 2.35 | 2.25@ 2.50 |
| West Ky. mine run...... | Chicago..... | 1.55 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump.. ...... | Birmingham . | 3.10 | 2.25 | 2.25 | **2.25@ 2.50** |
| Big Seam mine run....... | Birmingham.. | 1.70 | 1.75 | 1.65 | **1.75@ 2.00** |
| Big Seam (washed)....... | Birmingham.. | 1.85 | 1.85 | 1.85 | **2.00@ 2.25** |
| S. E. Ky. block.......... | Chicago..... | 2.75 | 3.35 | 3.75 | 3.50@ 4.00 |
| S. E. Ky. mine run....... | Chicago..... | 1.60 | 1.95 | 2.15 | 2.00@ 2.35 |
| S. E. Ky. block.......... | Louisville.... | 3.00 | 3.50 | 3.60 | 3.25@ 4.00 |
| S. E. Ky. mine run....... | Louisville.... | 1.60 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings...... | Louisville.... | .90 | 1.35 | 1.35 | 1.25@ 1.50 |
| S. E. Ky. block.......... | Cincinnati... | 2.75 | 3.35 | 3.75 | *3.25@ 3.50* |
| S. E. Ky. mine run....... | Cincinnati... | 1.45 | 1.75 | 1.60 | *1.40@ 1.75* |
| S. E. Ky. screenings....... | Cincinnati... | .95 | 1.35 | 1.25 | 1.15@ 1.40 |
| Kansas lump............ | Kansas City.. | 5.00 | 5.00 | 5.00 | 5.00 |
| Kansas mine run......... | Kansas City.. | 3.35 | 3.25 | 3.10 | **3.25** |
| Kansas screenings........ | Kansas City.. | 2.30 | 2.30 | 2.30 | 2.25@ 2.35 |

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Nov. 24, 1924 | | Nov. 16, 1925 | | Nov. 23, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken............ | New York ........ | $2.34 | ............ | $8.00@ $9.25 | ............ | $8.20@ $8.95 | ............ | $8.20@ $8.95 |
| Broken. ........... | Philadelphia........ | 2.39 | ............ | 9.15 | ............ | ............ | ............ | ............ |
| Egg............... | New York......... | 2.34 | $8.75@ $9.00 | 8.75@ 9.25 | ............ | 8.65@ 8.90 | ............ | 8.65@ 8.90 |
| Egg............... | Philadelphia........ | 2 39 | 9.45@ 9.75 | 8.80@ 9.25 | ............ | ............ | ............ | ............ |
| Egg............... | Chicago*.......... | 5.06 | 8.17@ 8.25 | 8.14@ 8.20 | $9.50@ $ 0.00 | 8.03@ 8.25 | $9.50@ $10.00 | 8.03@ 8.25 |
| Stove............. | New York......... | 2.34 | 10.00@ 10.50 | 8.75@ 9.50 | ............ | 9.15@ 9.40 | ............ | 9.15@ 9.40 |
| Stove............. | Philadelphia........ | 2.39 | 10.10@ 10.75 | 9.15@ 9.50 | ............ | ............ | ............ | ............ |
| Stove............. | Chicago*.......... | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@ 11.00 | 8.48@ 8.80 | 10.00@ 11.00 | 8.48@ 8.80 |
| Chestnut........... | New York ........ | 2.34 | 9.75@ 10.50 | 8.75@ 9.25 | ............ | 8.65@ 8.95 | ............ | 8.65@ 8.95 |
| Chestnut........... | Philadelphia........ | 2.39 | 9.85@ 10.50 | 9.15@ 9.25 | ............ | ............ | ............ | ............ |
| Chestnut........... | Chicago*.......... | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@ 11.00 | 8.50@ 8.75 | 10.00@ 11.00 | 8.50@ 8.75 |
| Pea.............. | New York......... | 2.22 | 5.00@ 5.50 | 5.50@ 6.00 | ............ | 5.00@ 6.25 | ............ | 5.00@ 6.25 |
| Pea .............. | Philadelphia........ | 2 14 | 5.75@ 6.00 | 6.00 | ............ | ............ | ............ | ............ |
| Pea .............. | Chicago*.......... | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 |
| Buckwheat No. 1.... | New York......... | 2.22 | 2.00@ 2.50 | 3.00@ 3.15 | ............ | 2.50@ 2.75 | ............ | 2.50@ 2.75 |
| Buckwheat No 1..... | Philadelphia........ | 2.14 | 2.50@ 3.00 | 3.00 | ............ | 2.50@ 3.00 | ............ | 2.50@ 3.00 |
| Rice .............. | New York ........ | 2.22 | 1.75@ 2.15 | 2.00@ 2.25 | ............ | 2.25 | ............ | 2.25 |
| Rice.............. | Philadelphia........ | 2.14 | 2.00@ 2.25 | 2.25 | ............ | ............ | ............ | ............ |
| Barley............ | New York ...... | 2.22 | 1.25@ 1.50 | 1.50 | ............ | 2.25 | ............ | 2.25 |
| Barley............ | Philadelphia........ | 2 14 | 1.50 | 1.50 | ............ | ............ | ............ | ............ |
| Birdseye.......... | New York........ | 2 22 | 1.40@ 1.60 | 1.60 | ............ | ............ | ............ | ............ |

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Nov. 23 | Nov. 16 | Nov. 9 | Nov. 24 |
| Index . . . . . . . . . . . . . . . . . . | 192 | 190 | 185 | 170 |
| Weighted average price. . | $2.32 | $2.30 | $2.24 | $2.06 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with repect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

In the Duquoin field conditions are similar to those in the Carterville district except in the matter of price. There has been a slowing up in the tonnage moving from this field, however. The Mt. Olive field continues to show activity. This coal is coming into its own because it is a middle grade coal. In the Standard field conditions are bad. Screenings are down, with no chance of them coming up, and there are "no bills" of all sizes at most mines every night and prices bring barely the cost of production. Working time ranges from three to five days a week. Railroad tonnage is reported good. Prices are unchanged.

Domestic trade in St. Louis is fairly active for middle grade and some of the Standard low grade is now beginning to move. High grade Illinois is fair, coke is good, but smokeless and anthracite are slow. Country domestic has slumped off except for cheaper coals and these are moving slowly. Local wagonload steam is good. Carload is fairly good, everything considered, and country steam is unusually quiet. Some coal, both steam and domestic, is moving through to the Omaha market and Kansas City is fairly active. An increasing tonnage is beginning to move northwest to the Minnesota and the Chicago market. No change in prices.

### Kentucky Movement Broadens

It is reported that movement of coal from eastern Kentucky to the lakes has started to slow down, and that stop orders have been placed on unshipped portions of some of the orders. If coal now at the lower end of the lakes is cleared before bad weather stops traffic, the shippers will be lucky. Cessation of lake shipping should release a lot of cars, prevent cars from being held under load so long and materially improve conditions for shippers who haven't been fortunate enough to handle lake business, but it will mean stronger competition for other business.

Domestic coal has been moving quite well to the North, with some movement toward Atlanta, and fair steam business in all sections, including Southeastern textile districts, which are busier than for some time past. Southern movement has been picking up and there has been better waterway shipping as a result of good boating stages. Some Kanawha River coal from West Virginia came into the Louisville market last week, and some shipments have been made from western Kentucky to points on the Mississippi from Memphis southward.

Prices are generally fairly firm all along the line, no changes being reported over the week, except that little eastern Kentucky block coal is moving at over $3.75 a ton, more going at $3.50. Some off-grade stuff can be had at $3.25 and a few specialty coals are moving at $4 or probably a trifle higher. Talk of $4.50 coal, however, is foolish, in view of the grade of coal to be had at $3.50@$3.75. The eastern Kentucky market is graduated down from $3.25 as the low on block, by 25c. stages to $1.25@$1.50 for screenings, mine-run being $1.50@$1.75; nut, $2.50@$2.75; egg, $2.75@$3, and lump, $3@$3.25. Western Kentucky pea and slack is 65c.@85c.; nut and slack, 85c.@$1; mine-run, $1.25@$1.50; nut, $1.35@$1.50; egg and lump, $1.75@$2, and 6-in. block, $2@$2.25.

Continued mild weather is holding back retail demand; the retailers have fair supplies in yards and are waiting for a slump before placing additional business in Louisville.

Car supply continues troublesome, there being plenty of cars apparently, but much congestion at terminals, slow movement and poor distribution.

### Northwest Trade Strong

While lacking the rush during the cold weather of a couple of weeks ago, the Duluth-Superior coal trade is strong, more orders for forward shipment being on hand than in some time. Industrial operations are increasing and business from the Minnesota iron ranges is expanding.

Bituminous coal is still moving this way from the East in larger volume than shipments, so that supplies on the docks are gaining moderately. Stocks of soft coal on commercial docks at Duluth and Superior are placed at around 5,650,000 tons, of which 2,000,000 tons is estimated to belong to the railroads. Twenty-eight cargoes, including one of anthracite screenings, were unloaded at the docks last week and fifteen were en route.

Operators are now limiting anthracite shipments as far as possible to regular customers. Pocahontas and other smokeless coals are being booked in heavy volume by former anthracite consumers, who appear to be satisfied in making the switch. No changes are reported in anthracite quotations on this market and the market in all lines of bituminous except Pocahontas and Kentucky coals is exactly where it stood several months ago.

Pocahontas has been moving up this way more freely and all the docks are now well supplied. Quotations are moderately easier as a result, prepared sizes now running at $8.50@$9; mine-run at $5.25@$5.50 and screenings at $4.25. Domestic coke is firm at $8.50 and briquets are $9. Makers of these substitutes are booking good orders.

Except for industrial demand, which is quite steady, the fuel market in Milwaukee fluctuates with the temperature. Consumers are doing the best they can in the absence of anthracite, and are buying with reluctance and in accordance with weather conditions. Coke and the better grades of bituminous coal are firm at higher prices than usual.

### Southwest Trade Softens

In the last week a slight softening in the Southwestern coal market has been apparent, but operators still report two weeks' accumulation of orders for Kansas lump. Deliveries of Kansas nut are a week slow, the demand for Kansas screenings and mine run being about equal to the supply. There is no surplus of screenings, but there is a more noticeable inclination to shade the prevailing quotation of $2.35 a ton to $2.25 on large contracts.

The coal business in Utah is showing more strength, due to a cold snap, but operators and dealers say it is not what it ought to be yet. The state has too many mines in operation to make business entirely satisfactory except during below-zero weather, which does not visit this region very often. The consumer is not storing coal this winter yet, feeling that there will be plenty of fuel when he needs it. Leading industries such as the metal mines and smelters, transportation, sugar manufacturing and a few others are taking a normal amount of coal, if not a little more. Coal for heating purposes is moving rather well too. Operators report all sizes moving, with the larger sizes the most active. The labor situation is good and prices are as steady as ever.

In Colorado there seems to be no letting up to the increase in demand for domestic coal. Orders are coming from all sections and prices compare with those of the war period. Labor is improving daily and there are no transportation difficulties.

### Movement Heavy Through Cincinnati Gateway

At Cincinnati the closing of lake navigation, chiefly in connection with the car shortage on the Louisville & Nashville Ry., was the chief topic of interest last week. Though the American Railway Association promised 100 per cent car supply, the mines worked only four days. The report of car movement shows that 14,437 loads of coal passed through the gateway, an increase of 1,426 cars over last week, and 3,192 over same week last year. Included in the movement were 2,414 cars en route to the lakes for transshipment via boats. This is an increase of 311 cars compared to last week.

Prices on high volatile remain practically stationary, with the exception of the specialized coals from Elkhorn and Big Sandy as well as those from the Jellico district, which in some cases reached the high point of $4.50 for block. Egg stiffened a trifle and the better grades sold at $2.75@$3 under heavier buying orders from the North, with Canada as the ultimate destination. After a little spurt mine-run has settled back to the old figures of the past several weeks. Screenings and slack are weaker, due to the fact that the lakes, big takers of this, are about through with the late rush. About $1.20 was the week's average figure.

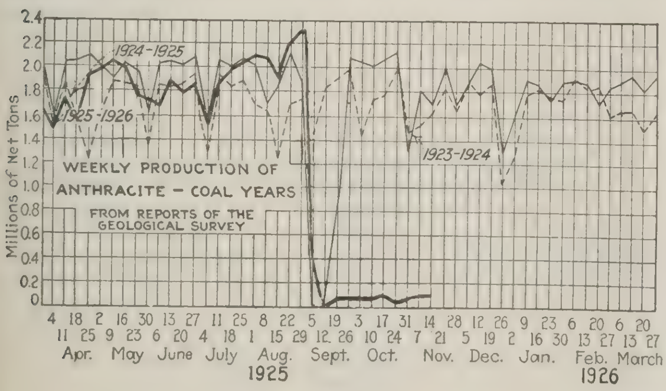
In the smokeless market there has been a crumbling of the high market to the west. The top now is about $5.50 for best Pocahontas lump. New River stuff is selling around $5@$5.25. Mine-run is 25c. off from last week's quotations and shows signs of drooping, while slack, without active byproduct bidding, has slipped 25c. on the range.

Retail business here is much in the same position as for the past two weeks, with no change in quotations. River business holds up well with good shipments going south as far as Louisville.

Softness is developing in some lines of the domestic coal trade in Columbus, due largely to warm weather. Smokeless suffered a decline of about $1 a ton during the week, most customers preferring splints and Kentucky block at much lower prices. Pocahontas has been offered at $5.50 on the local market with few takers, but for other grades of smokeless prices continue rather firm. Retail prices are generally maintained at recent levels.

Buying of steam sizes is spotty and there is no sustained buying to give strength to the market. Large users are pretty well supplied with reserves and consequently are buying current needs only. Quite a few smaller steam users are content to buy on the open market and are thus not entering into contracts. There is little distress coal on the local market, as shipping on consignment is not practiced to any extent.

The only significant change in the eastern Ohio market during the week has been the decided stiffening in the spot price on slack and nut-and-slack of about 15c. per ton in the open market, slack being quoted at $1.50@$1.55 and nut and slack at $1.55@$1.60. The shutting off of lump production for lake shipment has caused a shortage of auxiliary fuel. Railroads continue to take 100 per cent on contracts and additional coal as well, but the rank and file of industry is buying mostly for immediate requirements. The domestic market is dull and retail yards are pretty well stocked. Pocahontas lump is quoted here, f.o.b. mines, $4.75@$5.50, a drop of 50 to 75c. per ton as compared with a week ago.



### Local Demand Stronger at Pittsburgh

In the Pittsburgh market Eastern demand has had only a slight further decrease, while demand from the regular territory has increased a trifle. Railroad demand runs steady and industrial demand has increased somewhat. Demand for domestic coal has increased somewhat. Eastern demand is spotty, running chiefly to egg, for which there also is demand from the North, including Buffalo territory. Prices are very irregular, as sellers get what they can, and must sell. The average is perhaps about $3, but sales last week were at much below and at much above that figure. Otherwise prices are fairly steady and unchanged from a week ago.

Coal loadings in central Pennsylvania are now averaging 3,300 cars a day. Prices on prepared sizes have fallen a little. Operators are inclined to place the blame on retailers in the East who fail to stock up, in the hope that the anthracite strike will end soon. Lump is quoted at $3.75@$4; egg, $4@$4.25; nut, $3.75@$4. Mine-run prices are as follows: Pools 11 and 18, $1.60@$1.80; pool 10, $2@$2.10; pool 9, $2.25@$2.40; pool 71, $2.40@$2.50; pool 1, $2.65@$2.80. Slack is quoted at $1.50.

The bituminous coal trade at Buffalo has sagged off. Local members of the trade who are in the house-fuel industry are trying to make up the loss by selling bituminous lump for $4 or so, mine price, but as a rule the producers want about all there is in it. Bituminous prices are rather weak at $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run and $1.25@$1.40 for slack; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, $1.30@$1.60 for slack; $1.75@$2 for Allegheny Valley mine-run.

### New England Absorbing Output Better

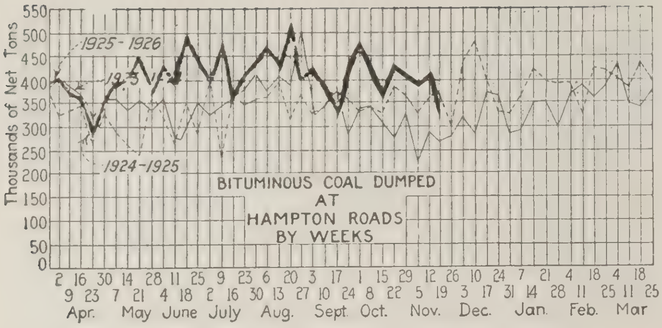
In New England there has been a marked lift in prices of steam coal during the past week. While inquiry has improved only very slightly it is clear that accumulations at the shipping piers are less and that current output is being absorbed in better volume than has been the case heretofore this season. At tidewater there is demand for only occasional cargoes, but on the line and especially in the West the steadiness is impressive. Coastwise movement is only average, and, as usual, the great bulk of the tonnage is being applied either on contract or is shipped to rehandling factors who are closely allied with operating interests.

At Hampton Roads apparently there is more than the usual range of price, the actual level depending upon the individual situation of the shipper. We have heard No. 1 Navy standard Pocahontas quoted at $5.25, while certain of the New River agencies are asserting that for the present their figure is firm at $5.50, in each case per gross ton f.o.b. vessel. Actual sales are reported at as high as $5.40, but at these prices the volume changing hands is as yet relatively small.

For delivery inland from Boston and Providence $6.50 per gross ton on cars seems to be the ruling quotation. Stocks are seasonable in every direction, and no merchandiser of smokeless coals is without adequate reserves.

The Pennsylvania coals via the all-rail route are practically unchanged. Screened lump and egg are being urged on retail dealers, but the tonnage actually absorbed is not large. Prices on prepared have eased off to $5.25@$5.50 in most cases where the grade is good low volatile, and even the Pocahontas and New River shippers have about made up their minds the New England market will hardly stand much in excess of that, with the higher through tariff that applies from N. & W. and C. & O. points. The latter roads are not finding this territory at all easy to manage as to the return of empty cars.

Coastwise freights have firmed recently in response to the demand for transportation for general merchandise to Florida points. This will be an interesting development to watch.



## Mine-Run Moves Easily at New York

Mine-run grades of bituminous coal continue to move easily in the New York market. Industrial consumers are taking full requirements but are not increasing orders. Demand for screened soft coals is good, but not up to expectations. A factor in the situation is the frequent peace rumors emanating from the hard-coal fields and other sections. These invariably are followed by cancellations of orders.

Screened high-volatile coals are quoted at $2.75@$3.25, with quotations for screened low-volatile ranging over the wide range of $4.50@$7. Mine-run quotations continue on the basis of the past several weeks, with practically no change.

At Philadelphia the stoppage of buying in the domestic trade has been felt in the spot market, particularly by concerns handling prepared sizes. In mine-run the effect on prices has been slight, although a decided weakness is evident. While low-volatile producers have felt the decline in buying, the hardest hit are those producing high volatiles. Some sizes which sold at $5 a month ago are easily obtainable now at $3 and under. General business conditions, however, are better, most agree, than at the same time last year.

At Baltimore ordinary trading is somewhat firmer and prices a little stronger, while there has been a distinct drop in the price of prepared sizes as a result of failure to maintain a rush demand for quick delivery of these fuels. Excellent prepared coals are offering to the trade at $5@$5.50 per net ton f.o.b. mine compared with $7 two weeks ago. Mine-run coals of better grade, though not in heavy call, are being influenced by a firmer market, and prices are probably 10c. or so stronger than a week ago. Coke has fallen off sharply, grades that were held around $11 two weeks ago now offering around $7. Two coal loadings were reported from the Custom House on foreign account during the past week.

## Buying Active at Birmingham

Coal buying has been active of late at Birmingham and all mines are pretty well booked up for some weeks. Indications point to a strong and steady market for some time to come for all grades of steam coal and mines are operating full time with a heavy movement. Industrial requirements continue heavy and railroads are using the maximum tonnage on contracts and in some cases more. The movement of bunker coal is much heavier than normal. Many of the high-grade producers of domestic coal are sold up for weeks ahead, although practically all tonnage moving is on spot business booked.

Quotations have stiffened some on steam and domestic grades, Big Seam mine-run being quoted $1.75@$2; washed, $2@$2.25; lump, $2.25@$2.50; Carbon Hill mine-run, $2; washed, $2@$2.25; lump, $3.25@$3.50; Cahaba, $2.25@$2.50; washed, $2.25@$2.75; lump, $4.25@$5; Black Creek mine-run, $2.25@$2.50; washed, $2.50@$3; lump, $4.50@$5; Corona mine-run, $2.50; washed, $2.75; lump, $4; Pratt mine-run, $2.50; Montevallo-Straven lump, $5@$5.50; Montevallo seam, $5.75 per ton mine.

A large tonnage of coke is being sold for consumption at Northern and Eastern points, with a strong, steady market in local territory. Quotations on foundry sizes are $5.50@$6.50 ovens. Gas coke at $5@$5.50 per ton is enjoying an active market.

Operations have suffered some delays on account of car shortage with indications of a more acute situation soon. Operations, especially those in outlying districts, complain of labor shortage also.

## Hard-Coal Substitutes Soon in General Use

Stocks of anthracite in the yards of retail dealers in and around New York City are steadily diminishing and the time is drawing near where the use of substitutes will become general, except in the case of consumers who put in their winter fuel before Aug. 31.

The local harbor contains some boats of independent pea and buckwheat coals, but the movement is not rapid because of the quotations asked. Some retailers are advertising a mixture of soft coal and buckwheat. Some of the larger companies are filling orders and contracts for buckwheat, but are not accepting new orders.

Coke seems to have the inside track in the New York market so far as house owners are concerned and demand has been heavy. The market, however, responds quickly to weather conditions and demand fluctuates accordingly. Quotations for Connellsville run-of-oven coke range $6@$7, with foundry coke quoted $7.50@$8. German byproduct coke, some cargoes of which have reached this harbor, is quoted around $12 gross ton, alongside.

Mild weather at Philadelphia has almost checked the sale of substitute fuels. Few dealers have any hard coal to offer. The dealers' only hope is for a stray car of pea or buckwheat and one is almost as welcome as the other. The storage yards of the companies are almost cleaned up, although there were a few fortunate dealers recently who had the luck to get a car of nut coal. Coke, which ten days ago was selling at $11 and $12 at the ovens, is now obtainable at a reduction of $3.

Baltimore hard-coal dealers are devoting their attention to selling prepared sizes of bituminous, but this is confined to demands from consumers who failed to lay in any anthracite stocks. Dealers here did not enter into competitive buying with those cities which bought up the greater part of the reserve stocks of anthracite at the mines after the strike started.

At Buffalo the supply of small anthracite sizes is giving out, so the soft-coal trade will soon be the whole thing, it seems. Coke of good quality can be had, though some of it is not up to the average appearance. It will no doubt burn, though. The only prospect of relief in this direction is that the production of coke is increasing fast and as soon as high-priced sellers get caught up with their orders they probably will find prices so reduced that they will have to come down too.

## Connellsville Coke Market Sags Further

The Connellsville coke market has declined further. Eastern demand has continued light. As recent selling was only for prompt shipment, every day has brought additional occasion for producers to sell, and this by itself weakens the market. Realizing the situation, some operators began more than a week ago to restrict production, not by putting out ovens but by lengthening the coking time.

The market is now quoted in the trade at $5@$5.50 for regular run-of-oven blast-furnace coke, but offerings at $5 go the rounds to such an extent that there is little justification for quoting a market range above that figure. Some offerings to blast furnaces have not been taken up, though it seems quite possible that if coke continues weak furnaces will buy some spot or prompt lots for reserves. As their contracts are chiefly at around $3 they receive no more on contract than is absolutely essential.

Blast furnaces are not disposed to negotiate for first-quarter coke. They assume that coke will be much cheaper in March than in January, whatever actual prices may be, hence they can buy for January alone, or bank for that month.

Foundry coke is off 50c. in sympathy, being now quotable at $6.50@$7.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Nov. 7, 1925 | 1,063,332 | 189,212 |
| Previous week | 1,091,273 | 194,255 |
| Week ended Nov. 8, 1924 | 995,279 | 172,764 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Nov. 7, 1925 | 103,969 | 37,726 | ...... | ...... |
| Oct. 31, 1925 | 111,619 | 42,949 | ...... | ...... |
| Nov. 18, 1924 | 116,448 | 60,097 | ...... | ...... |

# Foreign Market And Export News

## British Coal Market Develops Stiffer Tone Due to American Demand

The outstanding feature of the Welsh steam coal trade of late has been the substantial development of American demand. The Americans required anthracite, but the Welsh anthracite collieries were overbooked already and were unable to accept further business. Dry steam coals are an excellent substitute for anthracite and purchases are on a considerable scale, steamers having been chartered representing shipments in the course of the next ten days of at least 50,000 tons from Cardiff. This business has had a stiffening effect on the market for dry steams, but other trade has been quiet.

Apart from drys, prices show further relaxation for all classes of large, especially Monmouthshires. Small coals are somewhat steadier. It is hoped that weather conditions will soon permit of the regular arrival of steamers and enable arrears of shipments to be overtaken, so that the coal trade as a whole can settle down on a steadier basis. Outlook for Welsh steam coals is more favorable.

The collieries in Durham and Northumberland are heavily booked for a few weeks ahead, some to the end of the year. Therefore, work is proceeding steadily at the pits and docks. Inquiry too is promising. Cargoes continue to be bought for shipment to America, Mediterranean business is on a larger scale and so are shipments to the coaling stations. Prices are firmly held and slightly higher for all November shipments. All classes of coke are in good demand and poor supply, with little available to sell for November delivery. Gas coke is firm and higher. Contract business at the moment is quiet.

Production by British coal mines during the week ended Nov. 7, according to a special cable to *Coal Age*, totaled 4,790,000 gross tons, compared with 4,835,000 tons in the previous week.

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## French Industrial Coal Trade In Fair Position

The French coal market is in a fairly good position, especially in the matter of national products, as industry has improved and is demanding more, and foreign coals can easily be displaced by those of France because of the depreciation of the franc. An instance is seen in the case of Swansea anthracite, import quality, first choice, which recently was priced at the prohibitive figure of 410 fr. at Rouen.

Although consumption of domestic coals has been light lately because of the mild weather, dealers are still restocking sized products. French nuts in all categories are still scarce, deliveries from the mines being dilatory. In the Parisian area retail prices were not changed Nov. 1, except for an increase of 15 fr. per ton on anthracite nuts from South Wales to 520@535 fr., and 10 fr. on cobbles, at 480@500 fr.

Complaints about the tardy arrival of empty wagons at the mines have almost disappeared and freight is unchanged.

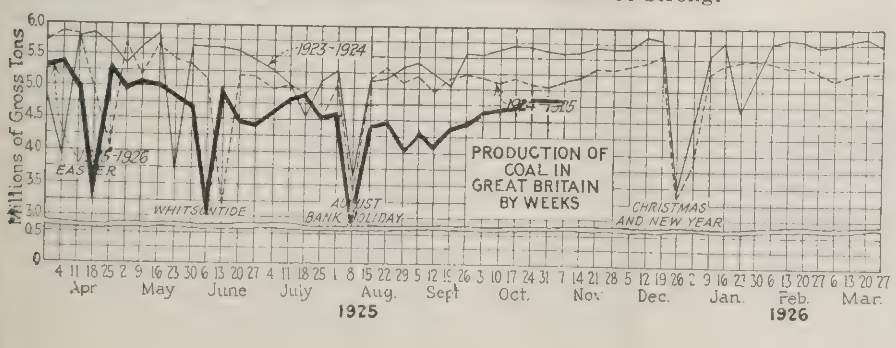
Receipts of indemnity fuels from the Ruhr during the first twenty-four days of October included 330,500 tons of coal, 185,200 tons of coke and 23,900 tons of lignite briquets. On reparation coals, the prices of anthracitic sized, dry and semi-bituminous for domestic uses on Nov. 1 were advanced 10 fr. and those of lignite briquets 5 fr. per ton.

During October the O.R.C.A. received from the Ruhr 227,450 tons of coke and in the first three days of November it received 11,646 tons.

## Tendency to Drag Hits Trade At Hampton Roads

The coal business at Hampton Roads began to drag somewhat last week, with the market holding its own fairly well though demand scarcely normal. Inquiries for foreign business were dropping off and bunker trade was only fair.

Domestic trade occupied chief attention in the business, with soft coal retailing at $13 a ton, and anthracite very scarce at $16.50 and in some cases more. Coastwise business was fair, but all-rail rates through to New York and New England were still having a tendency to weaken the demand for coastwise shipments. The tone of the market was not strong.



## Belgium Faces Foreign Menace

The Belgian industrial coal situation is still extremely strained; in the Borinage district the effects of the low rate of French exchange are beginning to be evident and British competition does not slacken. New concessions are noted on the prices of bituminous coals and coking smalls.

In domestic coals the tendency remains firm and certain sellers are slightly inflating prices. Some dealers seem to wish to force their French clients to pay in Belgian francs, which the latter absolutely refuse to do.

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## Export Clearances, Week Ended Nov. 21, 1925

| FROM HAMPTON ROADS | Tons |
|---|---|
| For Bermuda: | |
| Amer. Schr. William H. Harriman, for St. Georges | 2,323 |
| For Barbados: | |
| Nor. Str. Bueland, for Bridgetown | 4,913 |
| For Brazil: | |
| Br. Str. Gretaston, for Rio de Janeiro | 6,000 |
| Br. Str. Eastway, for Rio de Janeiro | 7,597 |
| For Italy: | |
| Ital. Str. Aquitania, for Bagnoli | 6,516 |
| For Trinidad: | |
| Nor. Str. Nils, for Port of Spain | 2,513 |
| For France: | |
| Ital. Str. Masaniello, for Marseilles | 6,397 |
| FROM PHILADELPHIA | |
| For Cuba: | |
| Br. Str. Baron Eilbank, for Havana | —— |
| FROM BALTIMORE | |
| For Brazil: | |
| Br. Str. Shannonmede, for Paranagua | 5,930 |
| For Porto Rico: | |
| Am. Str. Mary, for San Juan | 661 |
| Am. Str. Millinocket, for Guanica (coke) | 70 |

## Hampton Roads Coal Dumpings*

| | Nov. 12 | Nov. 19 |
|---|---|---|
| N. & W. Piers, Lamberts Pt.: | | |
| Tons dumped for week | 133,542 | 97,460 |
| Virginian Piers, Sewalls Pt.: | | |
| Tons dumped for week | 89,515 | 86,410 |
| C. & O. Piers, Newport News: | | |
| Tons dumped for week | 136,008 | 113,383 |

*Data on cars on hand, tonnage on hand and tonnage waiting withheld due to shippers' protest.

## Pier and Bunker Prices, Gross Tons

| | Nov. 14 | Nov. 21† |
|---|---|---|
| Pool 1, New York | $5.75@$6.00 | $5.75@$6.00 |
| Pool 9, New York | 5.00@5.25 | 5.00@5.25 |
| Pool 10, New York | 4.65@5.00 | **4.75@5.10** |
| Pool 11, New York | 4.55@4.70 | 4.55@4.70 |
| Pool 9, Philadelphia | 5.05@5.30 | 5.05@5.30 |
| Pool 10, Philadelphia | 4.80@5.10 | 4.80@5.10 |
| Pool 11, Philadelphia | 4.50@4.75 | 4.50@4.75 |
| Pool 1, Hamp. Roads | 5.25@5.35 | *4.85@5.00* |
| Pool 2, Hamp. Roads | 4.85@5.00 | *4.60@4.75* |
| Pools 5-6-7, Hamp. Rds. | 4.65 | *4.50* |
| BUNKERS | | |
| Pool 1, New York | $6.00@$6.25 | $6.00@$6.20 |
| Pool 9, New York | 5.25@5.50 | 5.25@5.55 |
| Pool 10, New York | 4.90@5.25 | **5.00@5.35** |
| Pool 11, New York | 4.80@4.95 | 4.80@4.95 |
| Pool 9, Philadelphia | 5.30@5.55 | 5.30@5.55 |
| Pool 10, Philadelphia | 5.10@5.35 | 5.10@5.35 |
| Pool 11, Philadelphia | 4.75@5.00 | 4.75@5.00 |
| Pool 1, Hamp. Roads | 5.25@5.35 | *4.85@5.00* |
| Pool 2, Hamp. Roads | 4.85@5.00 | *4.60@4.75* |
| Pools 5-6-7, Hamp. Rds. | 4.75 | *4.50* |

## Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Nov. 14 | Nov. 21† |
|---|---|---|
| Admiralty, large | 22s.6d.@23s.9d. | **23s.@23s.6d.** |
| Steam smalls | 10s.6d.@11s. | *10s.5d.* |
| Newcastle: | | |
| Best steams | 15s.6d.@15s.9d. | **17s.6d.@18s.** |
| Best gas | 16s.6d. | 16s.6d. |
| Best bunkers | 14s.6d. | **15s.@16s.3d.** |

† Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items
## From
## Field and Trade

### ALABAMA

The Alabama By-Products Corporation has resumed operation of its Clipper Mine, located near Dora, Walker County, which had been on the idle list for some time.

A new slope mine is being developed by the Brookside-Pratt Mining Co. at its Warrior River operations, in Walker County, near Carbon Hill, which will increase the daily output of prepared coal to between 1,500 and 2,000 tons. In order to handle the increased tonnage new jigs are being added to the washery and the tipple capacity is being enlarged. The coal from the new opening will be brought out on a conveyor belt to the tipple. The entire plant has been electrified and additional electric locomotives will be added to the inside haulage. The head offices are located in Birmingham.

The Sloss-Sheffield Steel & Iron Co. has started up its Ivy Mines, near Dora, which had been idle for some time. Its coal and coke requirements have been increased by the blowing in of another furnace. Domestic coal, for which there is a good demand, also is produced from this operation.

### COLORADO

The Pikeview mine of the Pikes Peak Fuel Co. was again operating Nov. 10 at normal capacity, with all men back at work, following a one-day walkout. The decision of the men to return to the mine followed a compromise between the miners' demand for a return to the 1919 scale and the operators' proposed wage reduction to approximately the 1917 scale. The new scale gives day laborers $5.75, machine miners will receive 61c. a ton on production, while pick miners will continue to receive 76c. a ton on a contract basis. The company's former wage gave laborers $5.25 a day, machine miners 57c. a ton, while the pick miners were not affected.

### IDAHO

Coal shipped to Boise City over the new railroad is selling at $13 per ton, while last year the same grade of coal freighted in by trucks retailed at $23 per ton.

### ILLINOIS

The Assumption Coal Co., with a capital of $150,000, has been incorporated and will begin operation of the mine at Pana, which has been idle for more than a year. The incorporators are: O. D. Hedrick, C. C. Cazalet and M. J. Fitzgerald.

Preliminary work has been started for the opening of Mine No. 7, of the Peabody Coal Co., at Kincaid. The mine has been closed since May, 1925. When operating at capacity it gives employment to over 900 men.

The Weaver mine of the Old Ben Coal Corporation began work Nov. 4, after having been idle since last February. When this mine is working at full force its payroll runs from $75,000 to $80,000 a month. The mine is served by the Illinois Central and the Chicago, Burlington & Quincy railroads. With the recent resumption on full time in the No. 7 mine of the Consolidated Coal Co., at Herrin, and the reopening of the Weaver mine, only three large mines in Williamson County will be idle. These are Consolidated No. 8, at Clifford, and two Old Ben mines known as the West mine and No. 18, in Johnston City.

### IOWA

C. W. Duro, Des Moines, has acquired the interests in the Madrid Coal Co. owned by W. H. Evans and H. E. Evans, of that city, placing practically all of the stock in that company in possession of three men, Mr. Duro, E. O. Preston and C. W. Springer. Mr. Duro is now connected with the Great Western Coal Co. and Mr. Preston and Mr. Springer are the owners of the Beaver Coal Co., Des Moines.

The Central Iowa Fuel Co. began the sinking of a new shaft Nov. 2 about six miles northeast of Chariton, on the Peter Lawson farm. The mine is fitted with all modern equipment. As it is only a short distance from the Olmitz and Tipperary coal road, the expenditures for track extension will not be great.

### KANSAS

The first Kansas chapter of the Joseph A. Holmes Safety Association was organized in West Mineral Nov. 10 and was named the "James Sherwood Chapter," in honor of the state mine inspector. It starts with twenty charter members. Formation of other chapters throughout the district will be pushed as rapidly as possible.

Two hundred Kansas coal operators, men in other phases of the industry and representatives of insurance companies at a dinner in Pittsburg on Nov. 12 discussed means for reducing liability rates, which operators assert have reached an exorbitant level in this field. Insurance representatives expressed the belief that rates might be lowered if proper effort were put forth by the companies to promote safety of employment and also guard against fraudulent claims. Increase in insurance rates from $3.40 per $100 payroll to $6.40 since the compensation law went into effect was attributed by operators to fraudulent claims.

Nineteen of 150 union coal miners, who last summer refused to return to work when operators of local mines issued an ultimatium suspending the wage scale then in force, returned to work and accepted a $5 a day scale, C. N. Fish, manager for the Home Riverside Mining Company, has announced. Fish said he expected more of the miners to return in the next few days.

The Kansas mining district had 238 mines working in early November, an increase of 103 over the same time last year, according to figures compiled by James Sherwood, state mine inspector. As this includes a number of "dinky" mines, working only a few men each, the total of employees is not proportionately increased, but it is estimated that 6,000 miners are now working, compared with slightly more than 3,000 a year ago. A number of large mines have swung into action this fall after being idle two or three years. For the first time in three or four years a majority of the "dinkies" are working. Inspector Sherwood predicts that tonnage figures for November and December will set a high record for recent years and that the 1925 total will be substantially larger than the 4,491,069 tons in 1924.

John R. Stanley, of Rocky Ford, Colo., recently recorded a coal lease option on Montgomery County land near Independent. While this option covered only 80 acres it is reported that Stanley has taken options on 3,000 acres south and east of Independence. Reports from Independence state that a railroad company is interested in the project and is backing Stanley. A few months ago the Pittsburg-Midway Coal & Mining Co. took leases on thousands of acres in Labette County, adjoining Montgomery County, for the Missouri-Kansas & Texas Railway Co.

A referendum election on moving the headquarters of District 14, United Mine Workers, from Pittsburg is indicated for an early date, district officials state. Arma has made an offer of $18,000 cash toward erecting a headquarters building in that town and Frontenac has offered to give a theatre building, valued at $50,000, which can be remodeled for offices.

William Harkes, general superintendent of the Central Coal & Coke Company during a visit to Pittsburg on Nov. 11 directly denied a persistent report that the Central is preparing to reopen its mine No. 50. The two mines it is now operating have a daily production of 2,000 tons, he said, which is ample to meet present market conditions. The Central's mines in the district other than the three referred to are being operated under subleases.

A proposal to subscribe to blanket insurance for all members of District 14, United Mine Workers, soon will be submitted to a referendum vote by district officials if no opposition to the plan develops in response to an inquiry sent locals by district officials Nov. 14. The proposal is for a blanket policy of $500 a man, to cost between $1.10 and $1.15 a month each. The plan has the approval of district officials, but a referendum will be necessary to add a clause to the district constitution authorizing the executive board to purchase the insurance.

A new shovel mine will be opened soon near Mulberry on 160 acres of land leased from J. G. Miller and Miss Ada Miller by a group of men headed by E. M. Roberts, of Pittsburg. Other members of the company are Frank Thomas, of Mulberry, and Hy McCullough, Boyd Spencer and H. H. Hughes, all of Pittsburg. The coal is in a 38-in. seam, from 10 to 20 ft. from the surface. A caterpillar type steam shovel has been ordered by the new company.

## MICHIGAN

Receivership for the Cooper Coal Co., organized to operate coal mines in Saginaw and Shiawassee counties, was asked in an action brought last week in Circuit Court at Saginaw by John Winship, who alleges there is $3,425 due him on a note brought from William Carmichael securing a loan made to the company.

## MINNESOTA

An extra 25c. delivery charge on consumer deliveries in the outskirts of Minneapolis and St. Paul, which has been in force for some years, has been absorbed. When it was made it was because of the long distance from the coal yards to the outlying sections. But the coal business has been decentralized, and coal yards exist within a mile or so of every section of the city. The change was made through the influence of the Twin City Coal Exchange.

The Pittsburgh Coal Co.'s No. 1 dock, one of the landmarks at Duluth, is being dismantled. It was built in 1881 by the Ohio Coal Co. and later was taken over by the Pittsburgh Coal Co. In 1895 the old wooden bridges on the dock were replaced with six new steel bridges and in 1897 two additional steel bridges were built. Power was supplied from a central steam plant of five 100-hp. boilers. In its day the plant was regarded as one of the most efficient at the head of the lakes, having a daily average capacity of 4,000 tons in unloading vessels. It had been out of commission since 1917, the Pittsburgh interests having built a modern new dock.

## OHIO

Operations were resumed at the Lincoln mine of the Lorain Coal & Dock Co., at Lansing, about three miles west of Bridgeport, on Nov. 9. The mine had been idle since November, 1924, owing to a fire which had raged for several weeks. Within a short time it is planned to have about 500 men at work.

Work of cleaning up the Fort Pitt mine, just across the river from Moundsville, W. Va., was started during the week beginning Nov. 9, and operations will be resumed within a short time. This mine when operating employs about 300 men. It has been closed down for about a year. A few weeks ago the tipple was destroyed by fire but repairs that will permit operation can be made quickly.

Dumpings at the Toledo docks of the Hocking Valley Ry. for the week ending Nov. 18 totaled 201,912 tons, as compared with 230,502 tons during the corresponding week last year. The loadings at the docks during the present season up to Nov. 18 were 7,857,230 tons as compared with 6,371,138 tons in the corresponding period of 1924.

Attorneys Harry B. Arnold and Francis J. Wright have entered suit against 53 coal companies, which held membership in the Southern Ohio Coal Exchange, of Columbus, for legal services performed in fighting the so-called Ohio-Michigan case for railroad rate adjustment before the Interstate Commerce Commission. The Southern Ohio Coal Exchange was forced into the hands of W. W. Metcalfe as receiver about eight months ago and has been in process of liquidation.

Arrangements have been made to start mines Nos. 5 and 7 of the New Pittsburgh Coal Co. in about two weeks which will add materially to operations in the Nelsonville section of the Hocking Valley.

The Jacksonville mine of the Essex Coal Co., the largest of the company in the vicinity, has been opened following an idleness of almost a year. The announcement is made that the mine is opened on the Jacksonville scale. The same company is operating several mines in the Pomeroy Bend field on the 1917 scale basis.

Secretary G. W. Savage of the Ohio division of the United Mine Workers has issued a statement in which he attempts to show that mining conditions have improved materially in the Hocking Valley and southern Ohio field. He said that 60 per cent of union miners are now employed on the Jacksonville scale as compared with 30 per cent during the summer months. About 700 to 800 men are working in the Sunday Creek section of the Hocking Valley but there is not much activity in the remainder of the field. Several mines near Cambridge have been reopened and a half dozen in Columbiana and Jefferson counties have resumed.

## PENNSYLVANIA

Last-minute decision not to open the East End mine of the Chartiers Creek Coal Co., near Canonsburg, probably was due to the decline in the market. The mine was to have opened on the Jacksonville scale.

Preparations are being made to start coal stripping operations in Baggaley. John I. Irwin, who recently bought the land, has shipped a steam shovel to the operation.

John C. Graham, of Butler, has been elected a director of the Standard Coal & Coke Co., of Chicago. Mr. Graham has been producing coal in the Pittsburgh district for 10 years.

Dismissal of the petition filed Nov. 5 by Harry F. Sinclair, oil man of New York, to intervene in the proceedings between the Harrison National Bank of Cadiz, Ohio, and the Carnegie Coal Co., was asked at Pittsburgh Nov. 18 in an answer filed by the coal company, which branded Sinclair's action as superfluous, impertinent and scandalous. The oil man asked the court to replace the two receivers of the coal company. Sinclair brought suit for $125,000, which he seeks to recover on a promissory note he claims he indorsed in favor of R. B. Haverstick, treasurer of the coal company. The company's answer asserted the retention of W. M. Wilshire and C. G. McGregor is necessary to the operation of their mines.

Machinery at the Oakdale mine of the Carnegie Coal Co. was damaged considerably last week by vandals who were under the impression, it is believed, that the mine planned to start on the 1917 scale.

The Bethlehem Mines Corporation, which is endeavoring to operate the Marianna mines, near Bentleyville, on the 1917 scale, is experiencing considerable trouble in getting production started, it is learned. Snipers are firing shots at spasmodic intervals at the tipple, and windows in the power house have been broken. Early last week one man was arrested by state police. Operation plans of the company are behind schedule.

The Glen Alden Coal Co., Scranton, one of the largest anthracite companies, deferred action on its semi-annual dividend at the regular meeting Nov. 10. No statement was forthcoming from the directors following the passing of the dividend. A rate of $3.50 a share was inaugurated in May, 1924.

The Pittsburgh Terminal Coal Corporation reports net income of $173,177 for the September quarter, after all expenses and reserves for depreciation, depletion and other deductions. After preferred dividend requirements, this is equal to 94c. a share earned on the 120,000 shares of capital stock outstanding, against 22c. a share earned in the previous quarter.

## UTAH

H. C. Marchant, general manager of the Superior-Rock Springs Coal Co., with headquarters in Ogden, has been appointed assistant to P. J. Quealy, president of the Kemmer Fuel Co. Hereafter he will have his headquarters in Kemmerer, Wyo., except that for the next few months he will be in Denver, Colo.

## WEST VIRGINIA

The West Virginia Coal & Coke Co. has resumed operations at its mines and ovens at Junior, in Barbour County, and now has 52 ovens in blast there. All the plants of the company where there are coke ovens have now resumed work, and owing to the large amount of tonnage required for the burning of coke, the company is operating all its mines except one on a full-time basis. Before resuming work at Junior it was necessary to rebuild a tipple at that place, the old one having been destroyed by fire several years ago and never having been rebuilt owing to the poor demand existing for coal during the last few years. Approximately 150 men are being given employment at the Junior plant.

All coal loading records of the Norfolk & Western Ry. were broken in October when the total number of cars loaded with coal in all districts on the line reached 79,397, 3,391 more than were loaded in September. A new high record for weekly coal loadings was established in the last week of October, when 18,369 cars were loaded as against the previous high record of 18,145, made during the week ended Oct. 10.

J. T. Dunigan, president and general manager of the Coal River Collieries Co., announced that October production, 66,185 tons, was the largest in the history of the company. All of the mines of the company are now operating and arrangements are being made to open a new mine at Plant No. 2, in the Cedar Grove seam. This operation is now producing 150 tons daily and within 30 days the capacity of 300 tons will be reached. The Southside mine, at the same operation, in the Lick Creek division, will be opened soon.

## CANADA

Charles Murphy, general manager of the Western lines of the Canadian Pacific, says little or no coal is going into Manitoba from the south, and that nearly all the domestic fuel is being shipped from Alberta. As a matter of fact, it is being shipped as far east as Chapleau, in Ontario, 375 miles east of Fort William. Ninety per cent of the coal in Winnipeg, he said, came from Alberta. "I think there is no question of the market being maintained if good quality coal is shipped," he remarked. Mr. Murphy said that the railway put in heavy supplies of steam coal before the grain movement began, in order that equipment might be utilized. The company, however, was still taking from 3,000 to 4,000 tons a day.

# Traffic

## Cancellation of Joint Rate Is Upheld

Proposed cancellation of joint rates on anthracite from Lake Erie and Niagara frontier junction points to Sparland and Henry, Ill., has been upheld by the Interstate Commerce Commission in a mimeographed report on Coal from Erie, Pa., etc. The cancellation of these rates will leave in effect a combination on Chicago $1.14 per gross ton higher. The combination on Chicago is the usual basis of rate construction in this territory. Respondent carriers justified the cancellation on the non-compensatory character of the joint rates.

## Coke Rate Situation in Tangle

The rate situation on coke to the Middle West has been further complicated by the action of the Interstate Commerce Commission in revoking the permission it recently gave Alabama roads to establish rates to southeastern Michigan 50 and 75c. per ton over the Chattanooga basis on short notice. Tariffs filed to become effective Nov. 13 were rejected on the ground that certain provisions would conflict with the long-and-short haul section of the Act to regulate commerce.

Permission to establish these rates on short notice had been granted in the first instance on representations that there was a need for such movement because of the shortage in domestic fuels created by the anthracite strike. These representations were challenged by byproduct plants in Illinois and Indiana, which declared that they could take care of the market in question. At that time the protestants asserted that demand from retailers for household fuel was by no means taxing oven capacity.

Another proposal before the Commission affecting the coke adjustment in Central Freight Association Territory is that made by carriers serving byproduct plants in western Pennsylvania. These railroads propose to reduce rates from Clairton, Bessemer, Wylie, Glassport and Pittsburgh to points in Pennsylvania, Ohio, Michigan, Indiana, New York and Ontario 10 to 88c. per ton, widening the present differential of 15c. under Connellsville to as high as 63c. in some cases. Protest has been made by the Coke Producers' Association of Connellsville, which sets up that the rates proposed would disrupt rate relationships which have existed for years, would give undue preference to Clairton and unjustly discriminate against the beehive ovens.

## More Rates on Coke Approved

Additional tariffs naming reduced rates on coke for intrastate movement have been approved by the Public Service Commission of New York. Interest in the rate adjustment has been heightened by the domestic demand for coke created by the anthracite strike. The new rates and routes approved are:

Buffalo, Rochester & Pittsburgh Ry., Charlotte to Rochester, 80c. per net ton; Charlotte to Garbutt, Mumford, LeRoy, Scottville and Wheatland, $1.39; to Pavilion, Rock Glen, Warsaw and Wyoming, $1.51; to Perry and Silver Springs, $1.89; effective Nov. 10.

Genesee & Wyoming R.R., Caledonia, Retsof Jct., P. & L. Jct. and Greigsville to Fraser, Greigsville, Halite, Inverness, Retsof, Taylor and York Center, 72c.; effective Dec. 10.

Lehigh Valley R. R., Buffalo, East Buffalo and Harriet to Elmira (including points on D. L. & W. and Erie railroads where switching charge does not exceed 38c. per ton), Elmira Heights, Horseheads, Breesport, Erin, Park Station and Swartwood, $2.14; effective Dec. 7.

New York Central Lines, Charlotte to Rochester (Kent St. and Portland Ave.), 80c.; effective Nov. 7.

## Chicago District Fight Revived

Rates on bituminous coal to points in the Chicago switching district are again before the Interstate Commerce Commission in a complaint filed by the Illinois Coal Traffic Bureau attacking the rates from mines in Illinois. The adjustment of rates to this vast industrial and domestic coal-consuming district—sharing with Pittsburgh the distinction of being the largest coal-consuming areas in the world — has been before the Commission in one form or another for several years. Rates from Indiana mines to the Chicago district and to all points in Illinois and Wisconsin have been put in issue in complaints filed by the Indiana Bituminous Coal Operators' Association.

# Obituary

**Thomas Griffiths,** superintendent of the Wolf Den Coal Co., Shallmar, Md., since 1917, died at the home of his son-in-law and daughter in Cumberland, Md., on Nov. 14th. He had been in ill health for about two years but had apparently fully recovered when he suffered a relapse two months ago. Mr. Griffiths was well known to mining men in Pennsylvania, Maryland and Virginia, in all of which localities he operated for some of the largest companies, among which were the Rochester & Pittsburgh Coal & Iron Co., Berwind-White Coal Mining Co. in Pennsylvania and the Houston interests in Virginia.

**Samuel E. Stimmell,** 47 years old, for the past 12 years superintendent of the Export mines of the Westmoreland Coal Co., died in his home in Export, Pa., from typhoid fever last week. Mr. Stimmell was a mining engineer. He leaves his wife and two children.

**A. E. Moore,** aged 65, a prominent coal operator, died at his Columbus (Ohio) home recently, following a short illness. He had been a resident of Columbus since Oct. 1, when he moved from Charleston, W. Va., but had spent the greater part of his younger days in the Buckeye capital. At the time of his death he was connected with the Indian Coal Co., of Charleston, and was formerly president of the Hocking Valley Mining Co., of Athens; the Orange Gas Coal Co., of Athens, and the Coal Valley Mining Co., of Charleston. He is survived by his wife, a son and a daughter.

## Coming Meetings

**American Society of Mechanical Engineers.** Annual meeting at New York City, Nov. 30-Dec. 3. Secretary, Calvin W. Rice, 29 West 39th St., New York City.

**Fourth National Exposition of Power and Mechanical Engineering.** Nov. 30 to Dec. 5, at Grand Central Palace, New York City.

**Smokeless Coal Operators' Association.** Annual meeting, Dec. 10, at Washington, D. C. Secretary, E. J. McVann, Washington, D. C.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

**American Mining Congress.** Twenty-eighth annual convention, Dec. 9-11, Washington, D. C. Secretary, J. F. Callbreath, Munsey Bldg., Washington, D. C.

**American Wood Preservers' Association.** Annual meeting, Jan. 26-28, 1926, at Cleveland, Ohio. Secretary, E. J. Stocking, Chicago, Ill.

**Coal Club of Philadelphia.** Annual meeting, Jan. 28, 1926, at the Bellevue-Stratford Hotel, Philadelphia, Pa. Secretary, C. K. Scull, Philadelphia, Pa.

## New Companies

**British American Coke & Byproducts, Ltd.**, has been incorporated with a capital of $10,000,000 to mine, produce and deal in coal, coke and other fuels, with head office in Toronto, Ont., by Walter B. Kingsmill, Stanley S. Mills, Vincent W. Price and others.

**The H. T. W. Coal Co.** of McCarr, Ky., with a capital of $20,000, has been incorporated by John S. Hall, and J. W. T. St. Clair, both of Williamson, W. Va.

**The Cleveland Collieries Co.**, Cleveland, Ohio, has been chartered with an authorized capital of 600 shares, no par value designated, to operate coal mines and properties. Incorporators are B. D. Gordon, Samuel S. Rosenthal, A. J. Schanfarber, C. R. Berne and E. L. Mueller.

**The Macksburg Mining Co.**, Byesville, Ohio, was recently incorporated with a $10,000 capital to mine and deal in coal. L. J. Swoll, H. P. Muhlbch, E. Delille, E. Waers and George Ruskin are the incorporators.

**The Acme Coal Mining Co.**, with a capital of $50,000, has been incorporated by S. J. Peters and Arthye H. McLain, Parkinson Bldg., Okmulgee, Okla.

## Industrial Notes

**Foote Bros. Gear & Machine Co.**, Chicago, Ill., is now manufacturing Sykes gears for use in IXL continuous tooth herringbone gears and speed reducers, having installed Farrel-Sykes machinery for the purpose.

**W. J. Rainey, Inc.** has opened a sales office at 328 and 329 Oliver Bldg., Pittsburgh, Pa., for the sale and distribution of "Rainey" products in the Pittsburgh district. This office is in charge of William Firth, for several years Pittsburgh manager of the Whitney-Kemmerer Co.

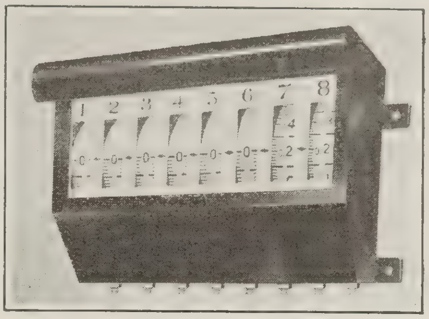
At the last meeting of the board of directors of the **Linde Air Products Co.** G. W. Mead, formerly president, was elected chairman of the board and W. F. Barrett, formerly vice-president, was elected to the presidency. In addition to these changes R. R. Browning was elected vice-president in charge of sales activities and J. A. Rafferty, vice-president in charge of engineering manufacturing and research.

At a recent meeting of the board of directors of the **Prest-O-Lite Co., Inc.**, M. J. Carney, formerly president, was elected chairman of the board; William F. Barrett, formerly vice-president, was elected to the presidency; Ralph R. Browning was elected vice-president in charge of acetylene sales activities and R. J. Hoffman was re-elected vice-president in charge of storage-battery and automotive divisions.

# New Equipment

## Multiple-Dial Draft Gage Aids In Boiler Control

In most boiler installations if continued high efficiency is to be maintained it is essential that the fireman should know accurately the draft intensity existing not only in the breeching or stack but also in the ashpit, above the fire and if possible in each pass of the boiler. Heretofore it has been necessary in most cases to employ a separate gage for each pressure desired. In order to make all of these various readings discernible at a glance as well as to render them continuously comparable one with the other the Republic Flow Meters Co., of Chicago, is introducing the instrument shown in the accompanying illustration.



**It Tells the Whole Story**

With this new multiple-dial draft gage before him, the fireman can see at a glance the draft intensity in breeching, stack and ashpit as well as above the fire and in each pass of the boiler—and he can compare them readily.

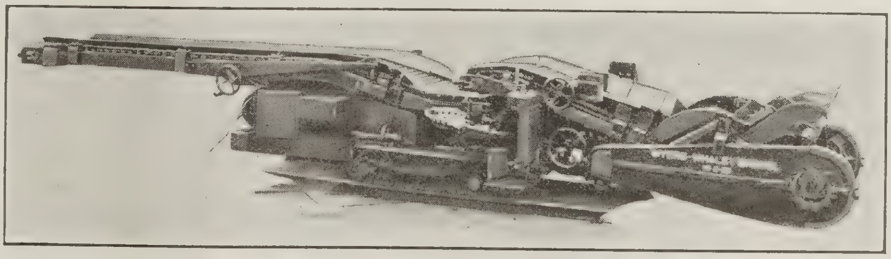
This meter is made in various sizes with units ranging from three to twelve in number. It may be placed in any convenient location, usually on the front of the boiler, each component unit being connected to the point in the boiler setting where a reading on the draft is desired. An electric light housed within the curved reflector spanning the top of the instrument illuminates all of the dials uniformly and makes them easy to read and compare.

In construction this instrument is simple. One leg of a U-tube containing a non-volatile oil is exposed to the pressure to be measured. The other leg of this tube contains a counterbalanced float, which in rising and falling actuates a gear quadrant meshing with a pinion the shaft of which carries a rotating dial. The dial somewhat resembles that of a speedometer, its readings possessing equally easy legibility. By placing the dials connected to the various points of the setting in sequence not only may the actual pressures or vacua be read directly but the relative differences between adjacent points, such as the boiler passes or the wind boxes of the stoker are at once apparent. Any marked variation from normal in these relative values indicates a change of condition within the furnace that requires investigation and usually correction. Thus the instrument aids in obtaining high efficiencies.

## This Shoveling Machine Will Work in 48-In. Coal

In order to meet the almost insistent demand for a coal loading machine that could be used in a headroom of 48 in., the Myers-Whaley Co., of Knoxville, Tenn., has recently placed on the market the loading machine shown in the accompanying illustration. This is known as the No. 2-25 underground shovel. It has a total length of 23 ft. 10 in., a width overall of 5 ft., (when the operator's seat is removed, 4 ft. 6 in.). The total height overall (traveling height) is 3 ft. 3 in. above the rail. The reach of the shovel is 8 ft. 6 in. on either side. The width of the shovel itself is 33¾ in., outside measurement, and the capacity of the machine is 34 cu.ft. per minute in loose material. Its weight is approximately 14,000 lb.

This machine will operate in a minimum height of 42 in. above the rail and can travel through places having a minimum clearance above the rail of 39 in. The first machine of this type is now in service in central Pennsylvania and shows an actual capacity equal to that of the regular No. 3 shovel, but since it is 6 in. lower than the No. 3 it can operate in that much less headroom. It is also capable of traveling through old workings or restricted passages in the mine which would be too low for the other machines to negotiate. It does not replace any of the other sizes now made.



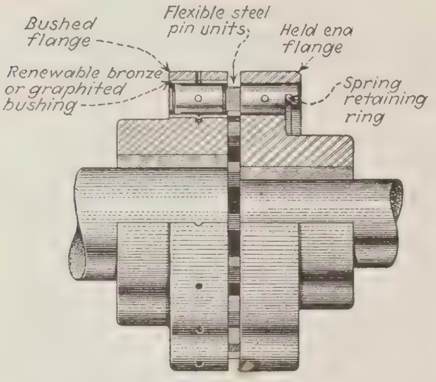
**Sturdy and Strong It Loads in Low Coal**

This coal loader is so designed and proportioned as to require 6 in. less headroom than other machines of the same type. Thus it cannot only work in a lower measure but can navigate passages through which the others could not travel.

## Self-Oiled Flexible Coupling Should Last Many Years

On Dec. 1 Smith & Serrell, of Newark, N. J., will place on the market a line of improved Francke flexible couplings intended especially for motor, turbine and engine drives. These couplings will be manufactured in 21 regular sizes and will be known as the "bushed pin type." Their ratings will range from ⅔ hp. per 100 r.p.m., with a maximum of 4,000 r.p.m., up to 3,850 hp. per 100 r.p.m., with a maximum of 490 r.p.m., and for shafts from ¾ in. to 13 in. in diameter.

As may be seen in the accompanying drawing, this new coupling retains the good features of its predecessor, known as the "heavy pattern type," and embodies several new ones of its own. Thus the end movement is easier and of greater amplitude. The power transmitting qualities are greater, as are also the bores. The new coupling also should have a longer life at all speeds. Steel flanges have been used on the small and intermediate sizes.



**Half-Section of Coupling**

The distinctive feature of this coupling which chiefly distinguishes it from all others is the renewable bronze or graphited bushings within which the flexible pin members are mounted and slide. These greatly reduce the friction of the pins and should last for years.

Graphited bronze bushings will be used in No. 850 size and larger, while bronze bushings will be employed in the smaller couplings. These bushings are removably locked to one flange and the steel-pin units are free to slide a full half inch within them. As compared with the older bushings the area of the contact surfaces is more than doubled and movement takes place between steel and bronze. Graphited bushings present self-lubricated surfaces that retain their lubricating qualities for many years.

This new coupling is capable of handling all accidental misinstallations such as the shaft being out of center or out of line and the like. The flexible pins cushion starting and load shocks and absorb vibrations. The coupling is noiseless and capable of operation in either direction. In case of excessive misalignment such a coupling acts as a safety device, obviating broken or scored shafts, bearing troubles and the like. However, if more than usual misalignment is anticipated, due to nonrigid foundations or from any other cause, two couplings in tandem with an intermediate shaft between them or a double, floating-ring type of coupling should be employed.

These new couplings are easily mounted, aligned, and fastened to the shafts they join without the aid of any special tools. They are of all-metal construction and embody no perishable material. There is no movement or wear on the shaft flanges to result in excessive renewal expense of these parts or of the complete coupling. The entire device is simple, rugged in construction and safe in operation.

## Makes Stronger Bearings

Greater strength has been put into the bearings produced by Standard Steel and Bearings, Inc., by a recent change. Balls were previously made of chrome alloy. Now they are all made of molybdenum steel. This was done not only to give the balls the toughness of armor plate but also because molybdenum is the only alloy that can be put into steel in an absolutely pure state. Molybdenum is obtainable in America in sufficient quantities for all steel purposes thus making the supply independent of foreign sources.

Street Bros. Machine Works of Chattanooga, Tenn., are now making an electric hoist in sizes above 30 hp. which have all of the refinements of the company's steam hoists with efficiency improved by an enclosed gear drive. Steel cut gears run in an oil bath and are totally inclosed in an oil-tight case.

## Trade Literature

**Small Tools.** Greenfield Tap & Die Corp., Greenfield, Mass. Catalog No. 49. Pp. 333; 5x7 in.; illustrated. Covers this company's line of small tools, including ground thread taps, spiral fluted staybolt taps, bolt and pipe threading machine. The book is well indexed for handy reference.

**Apex $CO_2$ Meter.** Uehling Instrument Co., Paterson, N. J. Bulletin 118. The principle of operation of this meter is described.

**American H. S. Fans.** American Blower Co., Detroit, Mich. Bulletin No. 6103. Pp. 31; 8½x11 in.; illustrated. Covers the various types of the American H. S. inlet fans which have been added to its line of Sirocco products. Tables of dimensions of the various types are given.

**G-E Mechanically Operated Flow Meters for Measuring Fluids and Gases.** General Electric Co., Schenectady, N. Y. Bulletin GEA-10. Pp. 43; 8x10½ in.; illustrated. Describes the flow nozzle and explains the operation of the meter.

**Belted Synchronous Motors.** Electric Machinery Mfg. Co., Minneapolis, Minn. Bulletin No. 812. Pp. 7; 8½x11 in.; illustrated. Describes synchronous motors of types designed for belted installations.

**The Link-Belt Co.,** Chicago, Ill., has issued an interesting book commemorating its fiftieth birthday. It is prefaced by notes on early conditions in some industries. The major part of the book, which consists of 47 pp., relates to the Link-Belt development.

**Carbon Circuit Breakers for Industrial Application.** Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Circular 1705-A. Pp. 24; 8½x10½ in.; illustrated. Contains a description of this breaker, points out the functions of the breaker contacts and outlines its characteristics of effective shock absorption, adjustment and equalization of brush pressure.

## Publications Received

**Standard Methods of Chemical Analysis,** edited by Wilfred Scott, Sc.D., in collaboration with eminent specialists. D. Van Nostrand Co., 8 Warren St., New York City. Fourth edition. Vol. I has 748 pp. and Vol. II, 802 pp. Both volumes are well illustrated, and the price of the two is $12.

**Industrial Chemistry,** edited by Allen Rogers, in collaboration with other specialists. D. Van Nostrand Co., 8 Warren St., New York City. Fourth edition. Vol. I has 511 pp. and Vol. II, 756 pp. Both volumes are illustrated, and their price is $10.

**Financial Statistics of States,** 1923. Bureau of the Census Department of Commerce, Washington, D. C. Pp. 147; 6x9 in. illustrated. Price, 20c.

**Radio Telephone Modulation,** by Hugh A. Brown and Charles A. Keener. Engineering Experiment Station, University of Illinois, Urbana, Ill. Pp. 49; 6x9 in.; illustrated. Bulletin No. 148. Describes results of an experimental investigation of the intensity or degree of modulation obtained with representative types of radiophones.

**A 1925 Review of the Department of the Interior,** Hubert Work, Secretary. Pp. 39; 6x9 in.; illustrated.

**A. S. T. M. Tentative Standards, 1925.** American Society for Testing Materials, Philadelphia, Pa. Pp. 876; 6x9 in.; illustrated. Price, $7 in paper; in cloth, $8.

Bulletins 118 and 118-A, describing the **Apex $CO_2$ recorder and indicator,** are now ready for distribution by the Uehling Instrument Co., of Paterson, N. J. These instruments operate on the orifice principle and do not employ chemical solutions. The principle of operation is fully explained in the bulletins.

**An Investigation of the Efficiency and Durability of Spur Gears,** by C. W. Ham and J. W. Huckert. The Engineering Experiment Station, University of Illinois. Urbana, Ill. Bulletin No. 149. Pp. 94; 6 x 9 in.; illustrated. Price, 50c. Describes the Lewis gear-testing machine and gives results of efficiency and durability tests.

**1925 Year Book of the Merchants Association of New York.** Pp. 361; 7 x 19 in. Besides the list of members and various committees the activities of the association for the year ending April, 1925, are reviewed.

**Coal Analyses of Bituminous Coal Fields of Pennsylvania,** prepared by the U. S. Bureau of Mines. Pennsylvania Topographic and Geologic Survey, Harrisburg, Pa. Bulletin M-6, Part IV. Pp. 268; 6 x 9 in. In addition to analyses of Pennsylvania coals, the mines from which the samples were taken are given.

**Statistical Abstract of the United States,** 1924. Department of Commerce, Washington, D. C. 47th number. Price, $1 (paper covers). Pp. 824; 6x9 in.; tables.

**The Geology and Coal Resources of the Coal-Bearing Portion of Lee County, Virginia,** by Albert William Giles, with a chapter on "The Forests of Lee County, Virginia," by Harry Lee Baker, the former prepared in co-operation with the U. S. Geological Survey and the latter in co-operation with the Office of State Forester. Virginia Geological Survey, University of Virginia, Charlottesville, Va. Pp. 216; 7x10 in.; illustrated. Topographic and geologic maps.

**Trade Marks, Trade Names, Unfair Competition.** Richards & Geier, 277 Broadway, New York City. Third Edition. Pp. 46; 6x9 in. Covers trade marks in the United States and foreign countries; also schedule of charges.

**Patents—Law and Practice.** Richards & Geier, New York City. Third edition. Pp. 56; 6x9 in. Digest of United States law and practice and practice in foreign countries; schedules of charges in United States and on foreign patents.

**Second Annual Report of the Maryland Bureau of Mines,** under the supervision of the State Board of Labor and Statistics. Pp. 95; 6x9 in.; illustrated.

COAL AGE

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Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. Dawson Hall
*Engineering Editor*

Volume 28 NEW YORK, DECEMBER 3, 1925 Number 23

## What Does It Mean?

GOVERNOR PINCHOT, living up to predictions made last summer, has at last come forward with an eleven-point program for a settlement of the anthracite strike. From the public standpoint, the outstanding features of this program are the proposal to prohibit any increase in the price of coal, a long-term agreement and an immediate resumption of operations. That last proposal already has been invalidated by the declaration of Mr. Lewis that resumption will follow agreement—not the reopening of negotiations.

Mr. Lewis and his associates, agreeing to nothing, promising nothing except a readiness to discuss the Pinchot program with the operators, nevertheless emerge from the situation with the blessings of Gifford and more public approbation than has been their lot at any time since the head of the United Mine Workers so brusquely ended negotiations with the anthracite producers last August. The operators, who have been gathering favorable opinion to themselves because of the justice of their cause, are again entering a cloud of public disfavor. For this they have nobody to blame but themselves. Their refusal to attend the governor's Harrisburg party last Saturday, their plea for advance knowledge of what he would propose reveal anew a pitiful incapacity for gaging public sentiment.

As for the Pinchot program, the more it is examined the less it appears in the public interest. The first proposal is that there shall be no increase in price "by reason of this agreement." That provision contemplates, in essence, a concerted maintenance of prices which is clearly illegal. Moreover, it is a denial of the demand that the cost of anthracite be lowered to a point enabling hard coal to compete with soft. In view of that denial, the later provision for a study "to recommend methods for increasing the efficiency and reducing the cost of operation of the mines" suggests no public participation in the benefits of such a procedure. As a matter of fact, the attitude of the miners has been that those benefits shall be wiped out by wage increases.

In the light of what has taken place in the bituminous regions, a long-term agreement with no machinery for modification is not in the interest of either the miner or the operator. Nor is the public served if the inflexible wage basis fixed prove uneconomic, since the cost of industrial losses must ultimately be absorbed by the public at large—indirectly, if not directly. That which the public most desires—an uninterrupted supply—is not guaranteed beyond the life of the new agreement. Another "study" is to be added to the wearisome bibliography on how to avoid strikes, but neither party is pledged to acceptance of the recommendations made.

The only possible public gain promised by the governor's activities was an immediate resumption of operations. Mr. Lewis has made it plain that that gain is not to be had. The other promises in the Pinchot program are too illusory to justify enthusiasm.

## Father of Parliaments

ON DECEMBER NINE the Coal Mining Institute of America holds its annual meeting. Organized in 1887, it has had a long and laudable career—not only in what it has done itself, but in the institutions to which it has served as a model. None that have patterned after it have had, of course, so long a life nor indeed so vigorous a one. Located as it is, the Coal Mining Institute of America has been able to draw members as the city in which it meets has been able to attract citizens. Pittsburgh is a convenient center for a live and flourishing institute.

Many have friends and past acquaintances in Pittsburgh, and the annual meeting accordingly serves for them as an "old home week" where many coal men who have not come in contact for years greet each other once more and exchange confidences.

The Pittsburgh coal men have gone east, west, north and south and some have wandered into foreign climes, but the Coal Mining Institute of America is their first love, even though they may have others, and whenever they have an opportunity they slip back to greet familiar faces and talk over old times and modern developments. At its sessions they are sure to find those who will welcome them after their travels and inform them as to the health and progress of their cronies.

Thoroughly practical the institute has always been. Yet of late years it has kept a higher standard than in years past. In earlier days the budding politician occasionally found a chance at the summer banquet to try out his oratory on the patient members, never being quite clear whether he was addressing the United Mine Workers of America or a technical society. But those days when we used to hear about Tubal Cain and King Solomon are gone. We eat our meat today with better talent, and we digest it with greater comfort.

No institute, not even the American Institute of Mining and Metallurgical Engineers, has a better record for 100 per cent attendance at committee meetings. No programs are prepared with more care. So long as this condition obtains the life and vigor of the Institute will be assured.

The thirty-ninth annual meeting assembles next Wednesday. Let no consideration prevent the attendance of any coal man living within reasonable distance.

## Setting the House in Order

HERBERT HOOVER in his annual report of the Department of Commerce for 1925 gives a glowing and yet truthful appraisal of the financial and economic condition of the United States, showing that the wealth and well-being of the average worker never stood any higher than today. The railroad improvement is mentioned as one of the main underlying stones of the present economic structure. And here, we cannot avoid alluding to bituminous coal; the low price throughout the year, too low all will admit, has been kept from rising to undue levels by the excellent service of the railroads.

Many of the inflations of coal prices in years past have been due to the inability of the roads to handle traffic. It has been said that the transportation units of this country should not be planned to meet the unreasoning demands of the public. That is true, but when the railroads come nearer to supplying the public need, the public ceases to become panicky and no longer orders goods for long periods in advance of needs or annoys and hampers the railroads by complaints about delayed shipments and losses. Exits at theaters are made large for use in case of panic, but when there are plenty of exits the panics do not occur. So when there are many railroad cars there will be less anxiety, and no duplication, triplication and other multiplications of orders.

Standardization and simplification, as Mr. Hoover says, have done much to reduce waste. In the industries which cater to the coal mines standardization is difficult and makes slow progress, but it should be more rapid than it is. Greater standardization of the product of coal mines would be of great assistance. Nevertheless, the advantage of the movement is less in coal mining than in other lines, so that such immense savings as are reported in other industries seem amazing. Some day when every one burns small sizes of coal, savings like these will have been effected. But the process is slow as it involves large quantities of new consumer equipment and is not determinable on an act of will as is the size of a paving brick or the thickness of a plank.

The nation owes Mr. Hoover a debt of gratitude for his continued efforts toward greater efficiency. We are all of us laboring hard at jobs that simplifications would shorten and make lighter. The many items of Mr. Hoover's report will furnish many suggestions to the industrial operator, be he in coal or in any other business.

## Bringing Tools to the Work

GREAT ECONOMY in operation is rarely possible where the tool has to be brought to the work rather than the work to the tool. This is why all forms of excavation or the turning over of the ground have not been as economical of effort as manufacturing. To move the heavy tool around cannot result in as much efficiency as is attained when a light material is brought to a heavy tool. This is why farming, excavation and mining have not duplicated the economies of manufacturing.

With machinery, production is cheaper despite increasing wages, but no such result has been possible where the tools have to be taken to the work. At the mines there are examples of great economies of operation. But here in every instance the material moves to the tool. If coal were carried on the backs of packers up a 300 ft. shaft a ton per man per day would be a good day's hoist, perhaps. But now one engineer can hoist with modern equipment 11,000 tons per day if the material hoisted is delivered to it. Similarly pumps receive their material and effect prodigious economies, but where machines have to run around to get a chance to do their work no economies like those attained by the manufacturer are possible, though such economies as are attained are certainly worth-while. Those who declare that they did well in the old mule and hand-pick days exaggerate the results attained under such conditions and forget that the mines were small and near the tipple, that hours were longer and men worked harder and even then did not perform as much. To return to those days would double or triple the cost of our coal.

## Safety the First Consideration

WHEN THE NATIONAL government was formed, few anticipated that it would undertake to instruct industry in technique. It found too much difficulty in raising money by taxes to do anything but maintain the courts, a small army, Congress and the administration. But as time wore on, the Federal government gradually became wealthy and found that it could interest itself in the technique of industry, first with regard to farming and then broadly through an extension of the Bureau of Standards. Later the Geological Survey formed a technological branch which dealt largely with technique of coal.

So far nothing had been done federally for safety. At length a number of distressing explosions caused Congress to urge that the technological branch of the Geological Survey undertake an inquiry into the technique of safety, a study more germane to the duties of government than the development of mining and manufacturing processes. Surely the safety of the worker is a primary public interest, a form of technique more consonant with the fundamental purposes of government than any other. The U. S. Bureau of Mines was formed out of the technological branch largely because the need for safety had become imperative.

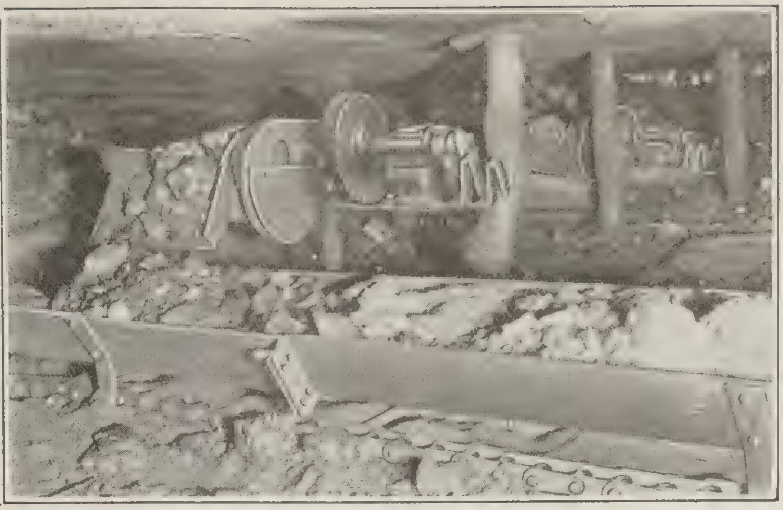
Had the Bureau taken up the matter in any half hearted, negligent or insufficient manner, its safety work might have been allowed to die without protest. But it succeeded so well that despite new hazards of increased depth, more gas, greater production, more machinery, more men in a single mine and larger and heavier transportation units, the growth in accidents not only did not increase but actually declined. For awhile safety drove out the greater part of the other activities of the Bureau. It became almost exclusively an institution for the study and promotion of safety. It branched out into mine rescue work. It trained men to perform the work of first aid and mine recovery.

The public has confidence in its work. It questions whether, if that work were left to each of the many states, it would be done as well. It notes with regret that state positions occasionally are held by men whose qualifications are political and not technical. It is confident that the Bureau of Mines is doing a more efficient work than the many mining states would do if left to themselves. So excellent has that work been that some states have sought co-operation of the Bureau in their inspectional activities and every coal operator who has tried to maintain good first-aid and mine-rescue teams has sought the Bureau's aid in keeping them in a high state of efficiency.

We hope that the Bureau's researches may some day be extended, but hold that not a dollar should be taken from safety work for the study of coal or metallurgical processes. It would be sad indeed if the Bureau should take as its motto the slogan, "Safety is not the first consideration." Such a decision would controvert the purposes for which that governmental activity was established.

# Conveyors Double Output per Man In Room Workings

## Raise Average to 16.23 Tons—Five-Man Units Can Cut, Drill, Shoot and Load Four Falls a Day and Do Dead Work Too



**By Alphonse F. Brosky**
Assistant Editor, *Coal Age*,
Pittsburgh, Pa.

IN TWO MINES under "Knickerbocker" management in Cambria County, central Pennsylvania, great concentration and speedy recovery are facilitated by conveyors in a room-and-pillar layout. These are the Telford mine of the Telford Coal Co. and the Jasahill mine of the Jasahill Coal Mining Co. By this means an appreciable saving in the production cost is effected. Once started, a room is driven to its limit and its complementary pillar brought back without delay.

The cycle—in and out again—has been completed in a minimum of 16 and a maximum of 21 consecutive shifts of 8 hr. each by five men who cut, drill, shoot and load the coal, besides handling draw slate, setting timbers and moving the conveyors. An average of three cuts from a room and as many as four from a pillar are taken each shift. And despite the fact that conditions are not the best, each miner has produced an average of 16.23 net tons per shift as against 7.28 tons under the old system. It would appear, furthermore, that the limit of productiveness has not even yet been reached.

Under the plan followed, each unit is composed of certain definite pieces of equipment and the complement of men necessary to operate them. Each crew is composed of five men. The equipment consists of: A main conveyor, 250 ft. long made up of 6-ft. sections. This is extended in driving a room and shortened in drawing a pillar. Two face conveyors, each 12 ft. long, discharge into the main conveyor (a complete description of these conveyors, known as the "Suppes," appeared in last week's issue of this magazine). One undercutting machine; a distributing or booster fan and canvas tubing; a 5-hp. hoist and the necessary wiring and lighting materials complete the outfit.

**Gravity Plane and Tipple at Jasahill Mine**

In accordance with the common practice where the coal bed lies above the railroad track in central Pennsylvania, at this mine loaded cars are utilized to pull the empties back up hill. As a result no power is consumed.

A strong conviction that long-face mining involves disadvantages outweighing its benefits has fortified the "Knickerbocker Mines" management in the belief that mechanization yields best results in a room-and-pillar layout. The simplicity of roof control in this system of mining as compared with that in longwall operations, especially when a room and pillar never attain a month's age, is sufficient justification for the retention of this system. The management holds that transportation is the most important factor limiting the productivity of any mining method. Light, sectional conveyors solve this problem in one system as well as in another.

The management believes it is not wise to concentrate mining areas without likewise condensing the phases of the mining cycle. Thus it maintains that in non-gaseous mines, at least, not only should every phase of a mining cycle be completed in one shift but that two, three or even four, such cycles should be consummated on each face in this same time interval. A

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The headpiece accompanying this article shows two independently-driven lateral conveyors arranged in tandem to discharge into a main conveyor which extends from a room face to the entry. By the aid of these conveyors four men mine three 6-ft. cuts, 35 ft. long, from a room in 8 hr. This is 30-in. coal in the B seam, Jasahill mine.

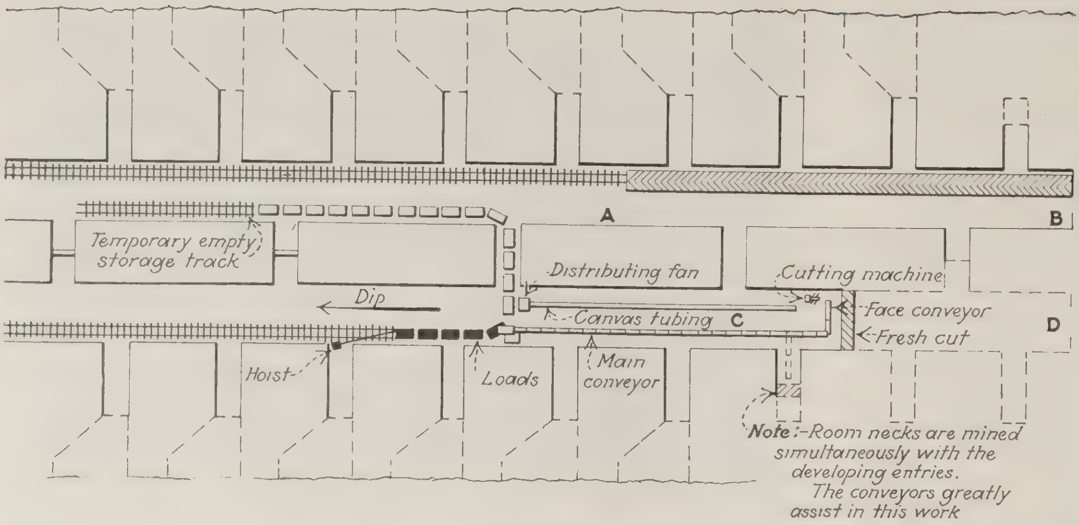

A
B
Temporary empty storage track
Distributing fan
Cutting machine
Dip
Canvas tubing
C
Face conveyor
Fresh cut
D
Hoist
Loads
Main conveyor
Note:-Room necks are mined simultaneously with the developing entries.
The conveyors greatly assist in this work

FIG. 1

**Conveyors in Entry Work**

After the upper entry is advanced from *A* to *B* the equipment is moved to the lower passage which is driven 220 ft. from *C* to *D*. Thus the driving process is alternated between the two entries. While the lower entry is being mined rock is being taken to provide haulage height in the stretch from *A* to *B*. Room necks are developed along with the entry.

mining cycle, of course, comprises those operations (phases) which are required to complete one cut—undercutting. drilling, shooting, timbering and loading out. These considerations dictated a choice of the mechanized room-and-pillar system.

The general layout is as follows: Room headings, consisting of two entries 25 ft. wide on 80-ft. centers, are driven at 90 deg. off the mains leaving a 500-ft. room-and-pillar territory or panel between them. Rooms on 53-ft. centers are turned right and left or off both entries of a room heading. These rooms are 35 ft. wide and 250 ft. long, with 18-ft. pillars between them. Room headings will be approximately 2,750 ft. in length or long enough to accommodate 50 rooms upon either side. It is the intention to drive the room headings to their limits advancing and to mine the rooms and pillars retreating. It is highly desirable that the rooms and pillars on one entry of the cross heading be mined advancing while those on the other shall be mined retreating. In closed-lamp mines a triple-entry cross heading would be required where rooms are driven off both sides of a room heading. Another modification, that could be worked successfully, would be that of driving rooms off only one side of a two-entry heading, using only one conveyor unit to advance the headings to their limits and to mine the rooms and pillars on the retreat.

Inasmuch as entry driving precedes room-and-pillar work, it is well to consider development methods first, even though greater significance may attach to the mode of later recovery. In a sense, however, both plans are based on the same fundamental principles of quick recovery by the use of conveyors, wide places (where conditions will permit) and intensive mining accomplished by taking at least three cuts from one place in each shift.

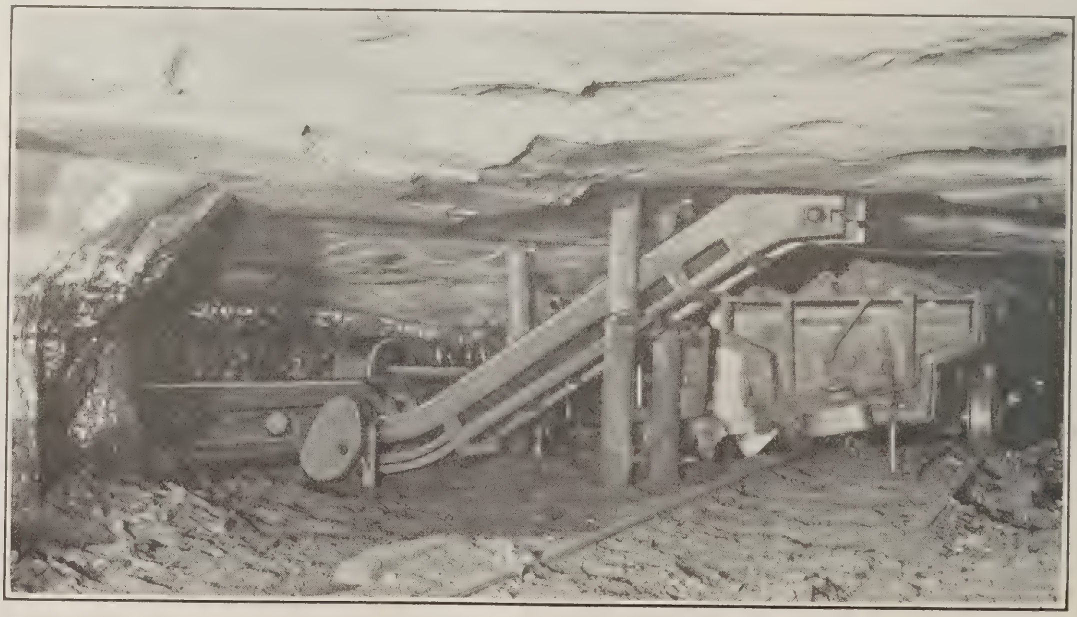
In Fig. 1 is indicated the plan by which an entry face is advanced at the rate of approximately 18 ft. per shift. The two entries of a room heading are extended by one mining unit, that also mines crosscuts through the chain pillar and develops the room necks.

The thickness of coal in both the Telford and Jasahill mines is not enough to provide sufficient height on the entries; consequently top or bottom, or both, must be taken. Brushing top and lifting bottom are operations performed entirely apart from that of mining coal from an entry. Having developed the upper entry from *A* to *B* (Fig. 1) the equipment is moved to the lower passage which is then advanced from *C* to *D*. The length of each step, that is, from *A* to *B* and from *C* to *D*, is about 220 ft. While the lower entry is being developed from *C* to *D*, rock is being taken down and the track extended in the upper entry from *A* to *B* as indicated by the herringbone hatching.

Sufficient rock is taken to provide from 5½ to 6 ft. of headroom over the haulway which is about 9 ft.

**Loading Boom on an Entry**

One man is stationed at the loading boom. He loads and spots mine cars in trips of 25. From 1½ ft. to 2 ft. of top or bottom must be taken on the entry for haulage purposes, indicating the thickness, or rather the thinness, of the seam. Roof is also brushed to give head room for the loading boom which must be elevated to clear the cars.



wide, leaving the remaining width or about 16 ft. of the entry for gob space. Furthermore, a pot hole is made at the mouth of each room neck to assure ample clearance above the loading boom of the conveyor during the room-and-pillar mining operation. Where the bed pitches, room headings as far as possible are for obvious reasons driven on the rise.

Entry driving, like room and pillar mining, is expedited by an adequate supply of mine cars. These are made up into trips of 25, into which the conveyor discharges a steady run of coal. In every second chain-pillar crosscut track is laid connecting the permanent track of the entry being advanced with a temporary track laid on the gob side of the parallel entry. A portable hoist, driven by a 5-hp. motor and remotely controlled from the loading station, is used to spot the cars composing a trip. The haulage arrangement is clearly shown in Fig. 1. As the direction of movement of the loaded cars during spotting is toward the dip, brakes must be set to hold them. The hoist moves the trip without these brakes being released.

The conveyor equipment can be used advantageously for handling rock. It has been thus applied in the driving of a stretch of the Fourth Main heading in the Telford mine, where bad roof was encountered under a stream. Here the entries, which customarily are driven 25 ft. wide have been narrowed down to 10 ft. At this point about 2 ft. of comparatively loose slate overlies the bed. This slate is temporarily propped up while the coal in each cut is being loaded out, after which it is taken down, loaded onto the conveyor and delivered to mine cars for outside disposal.

In panels *A*, *B* and *C* of Fig. 2 are indicated respectively the dimensions of rooms and pillars and the methods followed in driving the rooms and drawing the pillars. In panels *B* and *C* are shown also the arrangement of the conveyors and other equipment which provides quick recovery. As already explained room necks are turned and developed when the entries are driven. One mining unit advances a room heading to its limits; two such units, or one on either side, are utilized to mine the rooms and pillars in a full retreat.

### Arrangement of Conveyors in Room

Imagine for the moment panel *B* in the earliest stage or room driving. The room neck has already been mined 10 ft. wide and 30 ft. deep. At the mouth of this neck and extending over the entry track is placed the loading boom. Onto the rear end of the loading boom are added as many 6-ft. sections of main conveyor (about four) as are required to reach the face of the room neck. Here the widening-out operation commences. In three consecutive cuts, made in one shift, the room is flared out to its full width of 35 ft. In each shift thereafter at full room width the face is advanced a distance equivalent to the depth of three 6-ft. cuts until its limit, which is 250 ft. from the entry, is reached. As each breakthrough projection (on about 105-ft. centers) is reached the room pillar is pierced in three consecutive buttoff cuts. Mining operations here alternate between the room and the crosscut faces until the pillar is mined through. When the limit of the room is reached, the pillar is, of course, broken through at its extremity, completing the mining of the room proper.

The main conveyor is so laid as to maintain a clearance of about 7 ft. from the pillar and extends almost to the face. The roof over the gob area is supported by means of props on 5-ft. centers in lateral rows 6 ft. apart. The posts in the line flanking the main conveyor nearly touch it.

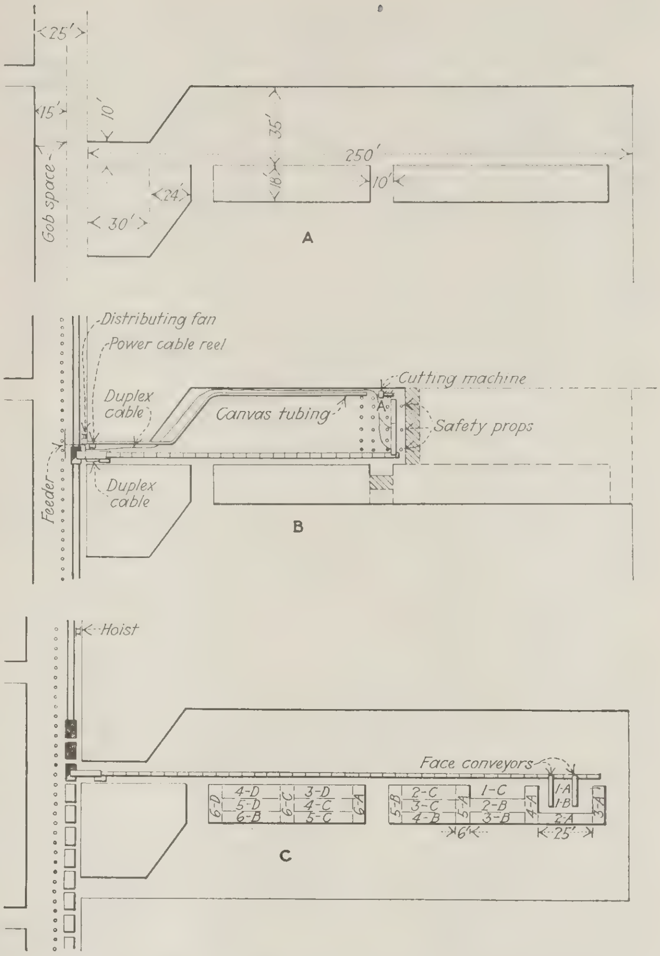


**Fig. 2—Room and Pillar Layouts**

Panel *A* simply gives the dimensions of rooms and pillars. Panel *B* shows the arrangement of equipment in an advancing room, and panel *C* indicates the method by which a pillar is drawn.

Within 2 or 3 ft. of the shot-down face are set in tandem the two 12-ft. face conveyors extending at 90 deg. to the main conveyor. The effective length of these two conveyors when in tandem is about 22 ft. so that they are within shoveling distance from the furthermost corner of the room. Where the roof shows weakness three safety props are set between the lateral conveyor and the face, within 18 in. of the coal. These timbers are set in position in the wake of the undercutter before the cut is shot. They interfere with loading to only a slight degree.

Four men out of the 5-man crew work at the face, the fifth man being stationed on the entry to load, trim and spot cars. As in entry driving, the spotting of cars in conjunction with room-and-pillar mining is accomplished by means of a 5-hp. hoist remotely controlled from the main control panel in the room neck. All electrical taps are made on a duplex cable. This is carried overhead across the entry from the feeder to a cable reel of the mining-machine type set up in the room neck. Branch circuits lead from this connection to the main conveyor drive and to a small fan which by the aid of canvas tubing delivers air to the face.

As the room face is advanced the cable is unwound from the reel. The end of this cable terminates at a junction box at the face. From this point electrical connections are made to the cutting machine, to the two independently driven transverse conveyors and to a flood lamp which illuminates the face.

A fuse on the mining machine and another on the main control panel in the room neck jointly guard all this equipment against overloads. The main conveyor may be stopped when desired by the men at the face as well as by the operator at its heading end. A snap switch on one of the face conveyors and a no-voltage release mounted on the main control panel prevent restarting. This feature is particularly valuable when the main conveyor is being used for transporting supplies and equipment from the entry to the face. It also serves as a safety precaution when work is being done on the conveyor unit.

The four face men work on their knees in low coal. They are stationed at equal intervals along the face. Shoveling is easy in that they are enabled to load the coal by a simple toss of the shovel; or the shovel, filled with coal, may be dragged back to the conveyor, lifted above the flare board and the coal allowed to slide off. In no case is it necessary to throw the coal far upward or outward from the shovel. The men go through no unnecessary motions and the exertion involved is less than a third that required to load into the ordinary mine car. This point is important as has been proven by actual practice, for a man in 1 hr. loads without tasking himself as much coal as he could load into a mine car in approximately 3 hr. of heavy exertion.

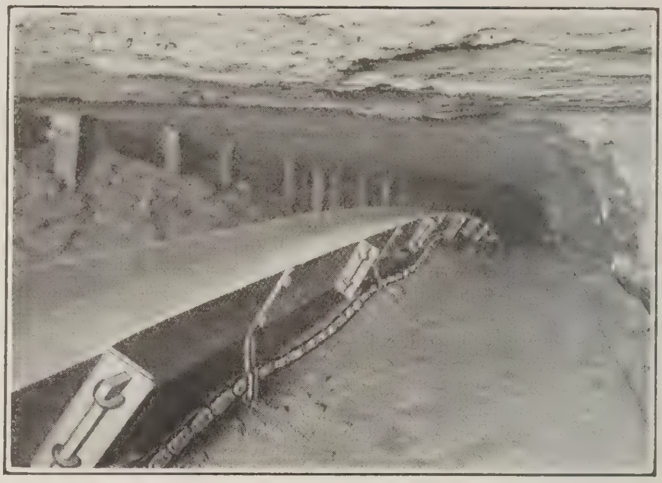
The four men load a width of face measuring about 24 ft. from the left-hand side of the room, leaving about 11 ft. on the right side. This last one-third is loaded out by two men while the other two move the undercutter from its position at *A* (panel *B*, Fig. 2) and start cutting from left to right. By the time the cutting machine reaches the center of the face the two shovelers have about cleaned up the previous cut. Having completed the clean-up the two shovelers become drillers and start on the left side to drill and charge the shot holes, in the wake of the cutting machine.

While cutting and drilling are in progress the fifth man on the entry loads onto the main conveyor the supplies and equipment necessary to extend it, reverses the direction of its travel and thus transports to the face the wherewithal for its extension along with timber and supplies. He then goes to the face where he joins his buddies in lengthening the conveyor.

The two transverse conveyors are moved to an advanced position within 2 ft. of the new face. Then while three men add a 6-ft. section to the main conveyor, the two others set a row of props behind the face conveyors. When these jobs have been completed the shots are wired and the men retire to safety on the entry. From this vantage point the charges are detonated by means of a battery. While the face is being cleared of gases and smoke by the distributing fan the men usually eat lunch. Thus one of the three cycles of room driving ordinarily completed in an 8-hr. shift is finished.

**Conveyor in a Room**

The stepped bottom is an indication of a local rise to the crest of a roll. Note that this conveyor accommodates itself to the rise and dip.



**Looking Out of a Room**

An average of three rolls are encountered in the driving of each room in the Jasahill mine, and the coal varies from 23 to 44 in. in thickness. The pronounced vertical bend in the conveyor in the background is noticeable. This room was started under the old system of mine car loading as indicated by the wall of rock taken from the bottom.

Turn now to panel *C* of Fig. 2, in which is illustrated the steps taken in drawing a pillar. Since the pillar is 18 ft. wide, three buttoff cuts, each 6 ft. in depth will pierce it. These buttoff cuts are made 25 ft. long, leaving a 6-ft. stump which is taken upon the completion of the adjoining buttoff place.

Three to four cuts are taken from a pillar in a shift. The sequence of working is indicated in Fig. 2 by a number-and-letter notation, the numbers indicating the places worked at one time and the letters the sequence of working. Thus during the first shift cuts 1-*A*, 1-*B* and 1-*C* are mined; during the second shift cuts 2-*A*, 2-*B* and 2-*C*; during the third shift cuts 3-*A*, 3-*B*, 3-*C* and 3-*D*, and so on. As shown, a room pillar can be completely drawn in six shifts. In many cases only four shifts have been required for robbing a pillar. The pillar is withdrawn only as far as the entry stump, which is left for later recovery with the chain pillar.

These abstract facts should be noted: The equipment composing a mining unit can be moved from a worked-out place to an adjacent room neck by five men in 12 hr. Toward the close of each shift it is customary to prepare at least one cut for loading at the beginning of the following shift. Each mining unit has its own cutting machine. All these arrangements lend themselves admirably to double-shifting.

Three units are installed in the Telford mine. Here the E seam being worked has an average thickness of 42 in. and is overlaid by 5 in. of draw slate which comes down or is pried loose and gobbed before the coal is loaded. Near the bottom of the bed is a 2-in. binder which is loaded with the coal. This breaks in big pieces which are easily detected and removed on the tipple. The coal is soft and friable.

One of the units here installed produced 17,371 net tons of coal in the first 214 consecutive shifts (including the time required to move the equipment from place to place), making an average of 81.17 tons per shift or 16.23 net tons per man-shift. In mining one room in which the draw slate was only 1½ in. thick this unit maintained an average production of 95.76 net tons per shift or 19.15 tons per man per shift. It mined another room and its complementary pillar, yielding 1,377.6 tons in sixteen 8-hr. shifts at an average rate of 17.2 net tons per man per shift.

### OTHER UNITS SHOW HIGH AVERAGES

The second unit installed in this mine in the first place worked, which was a 25-ft. entry, mined 1,072.96 tons in 18 shifts, an average of 11.92 net tons per man per shift. This same unit next mined a room at an average rate of 17.09 net tons per man per shift. In the third place mined by this unit, a room and a pillar, it produced an average of 16.01 net tons per man per shift.

The third unit installed in the Telford mine, with four men in the crew, mined 1,019.2 net tons from its first room in 16.8 shifts, or at an average rate of 15.16 tons per man per shift.

At the Jasahill mine the B seam varies in thickness from a maximum of 44 in. to a minimum of 23 in. Rolls, extending in any direction, are encountered at the average rate of three to a room. No draw slate occurs but a thin band of soft slate comes down with the coal.

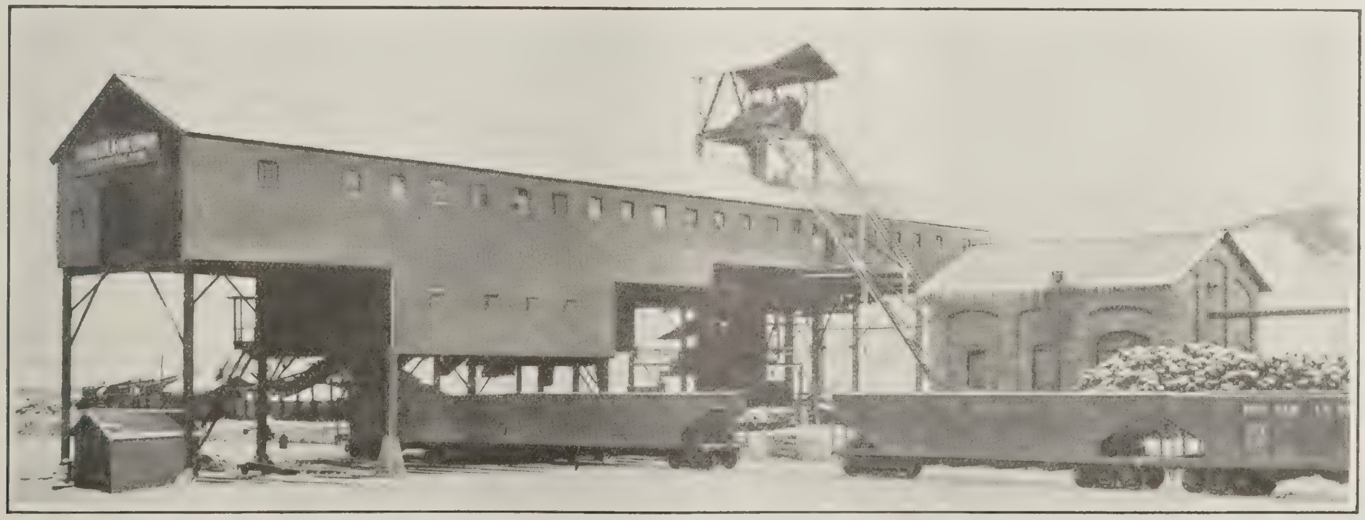
One unit is in operation in this mine. In the second place worked it produced from a room and pillar 1,258.9 net tons in 18.6 shifts at an average rate of 13.53 tons per man per shift. The average thickness of the bed in this room and pillar was 38 in.

Sixteen room-and-pillar places, five rooms without pillars and four entries (each of the latter being 220 ft. long) or 25 places in all, had been mined by the mechanical system up to Nov. 1. Neither the equipment nor the methods, therefore, is experimental.

## Top Works at Jerome Nos. 1 and 2 Mines, Hillman Coal & Coke Co. at Jerome, Somerset County, Pa.

**Jerome No. 1 Tipple Has Special Bin for Storing Crushed Refuse**

Jerome No. 1 is one of two operations at Jerome, Pa., of the Hillman Coal & Coke Co. The capacity of this tipple is 2,000 tons per day, the coal coming from the C-Prime seam. In the bin supported by steel legs, to the left of the tipple structure and to the right of the bridge, is stored crushed picking-table refuse which is burned in a steam plant. After passing through a crusher in the tipple the refuse is raised and dumped into the bin by a bucket elevator. Mine cars carry this fuel from the bin to the boiler plant which is located behind the tipple. The cross above the bin is not a part of the design of the structure. It is formed by a temporary horizontal working platform suspended from the bucket elevator housing.



**Tipple at Jerome No. 2, Where 2,000 Tons are Prepared Daily**

This tipple prepares about 2,000 tons of coal per day. The shaft is 225 ft. deep. During the winter of 1924 much of the coal from this plant and that from the Jerome No. 1 plant of like capacity went to Eastern and New England markets in competition with anthracite for domestic use. The coal comes from the low volatile, smokeless C-Prime seam of Central Pennsylvania. The slack coming from this plant ranges in sizes up to 2 in. and therefore makes excellent steam coal. Since this picture was taken this plant has been remodeled. Shaker screens, picking tables and loading booms were installed in the fall of 1924. Also the platform cages indicated by the headframe construction in this picture were replaced by self-dumping cages.

# Harmar Mine Raises Quality of Its Product By Overcutting in Impure Coal

## "Captive" Mine Shows Influence of Steel Industry—Ships by Either Land or Water—Problem of Housing in Limited Space Is Solved by Building Terraces

**By Alphonse F. Brosky**
Assistant Editor of *Coal Age,*
Pittsburgh, Pa.

WHERE DEER CREEK EMPTIES into the Allegheny River, less than nine miles northeast from the city limits of Pittsburgh, lies the Harmar mine of the Consumers Mining Co., a subsidiary of the Wheeling Steel Corp., one of western Pennsylvania's most outstanding coal properties. Several details both of surface design and operation differentiate this mine from the average run of the common herd. Thus, top cutting of the coal is practiced in preference to undercutting; the design of its houses differs radically from that usually adopted by most coal companies; the mine product is crushed before it leaves the tipple and can be shipped by either land or water. It is one of the most thoroughly rock-dusted mines in the country. The extremely interesting subject of rock-dusting practice will be treated in the Dec. 10 issue.

The shaft of this operation is 134 ft. deep, extending to the bottom of the Thick Freeport bed and hoisting is performed by means of 10-ton skips. Present production is at the rate of about 3,000 tons per day but the equipment has been designed for an ultimate capacity of 6,000 tons and this output will doubtless be attained eventually. The property comprises no less than 3,300 acres of coal which is enough to fully justify such large capacity.

This plant is all the more interesting because it is "captive," producing fuel solely for use in the parent company's byproduct coke works at Steubenville, Ohio. Being thus closely affiliated with the interests of another industry the operations at Harmar bear strong imprint of the influence which the steel works have exerted upon them. This is evidenced both in mining operations and in transportation. It is so marked in some respects as to render a number of the practices followed at Harmar distinctly different from those of neighboring operations.

The average thickness of the cover above the workings is about 450 ft.; the maximum about 650 ft. The roof directly over the coal is decidedly weak and has presented perhaps the most difficult problem encountered in mining the Thick Freeport bed, which in this mine, is about 86 in. thick and not all clean.

Entries are driven 12 ft. wide on 50-ft. centers. The main heading lies on a butt course and is composed of six entries protected by 200-ft. barriers upon either side. Cross headings, of four entries each, protected by 175-ft. barriers, are laid out at 2,490-ft. intervals. Double-entry room headings are turned every 400 ft., center to center, leaving 350-ft. strips of coal which

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The headpiece accompanying this article is a general view of the upper works at Harmarville. The output of this mine can be shipped by either rail or river. An artificial harbor has been dredged to accommodate barges of 1,000 tons capacity into which are loaded 600 tons of coal which is all that the ordinary stage of the Allegheny River will accommodate. These boats are then floated down the Allegheny and Ohio rivers to the byproduct coking plant at Steubenville, Ohio.

are mined by 21-ft. rooms 300 ft. long pitched on 80-ft. centers.

The demand for steel from the plants of the parent organization is reflected in the demand for coal on the Harmar mine. And as the coal company is not engaged in any commercial business, when times have been dull in steel, the mine has worked intermittently or not at all. This fact, coupled with a bad roof condition, accounts for the adoption of a layout of wide rooms in a region where pillars are seldom twice as wide as the openings between them.

These pillars are being machine-mined by an 18 ft. wide buttoff place protected by a 10-ft. wing which is recovered partly by machine and partly by pick. A 6x10-ft. stump is left at either end of the wing, to be drawn later by pick, and the coal between the two stumps is machine-mined. Under better-than-average conditions the entire wing may be machine-cut.

Where two men work on a pillar, which is the common arrangement in this mine, each miner has a place to himself. Consequently, two places in one pillar are worked simultaneously. When the buttoff place nearest the inby end of the pillar is just through, the miner there employer starts back with the wing pillar while the other miner starts a second buttoff place outby of the first. A concentration system of three such places on a single pillar is being experimented with and may prove successful if the roof is not disturbed to any great degree, thereby causing undue pressure on the isolated pillar coal.

### SEVERAL LAYOUTS CONSIDERED

To avoid the danger just described a proposed layout of 22-ft. rooms on 60-ft. centers is now being considered. By this plan the pillar would be drawn by two men immediately following the completion of the room. Still another layout is being schemed, in an attempt to arrive at the best. This provides for 18-ft. rooms on 40-ft. centers. Concentration would be obtained by driving a set of six rooms simultaneously on an even front, working as many sets as are required to maintain a straight break line on an angle of 45 deg. to the headings. Pillars would be drawn, without interruption, following the completion of the rooms.

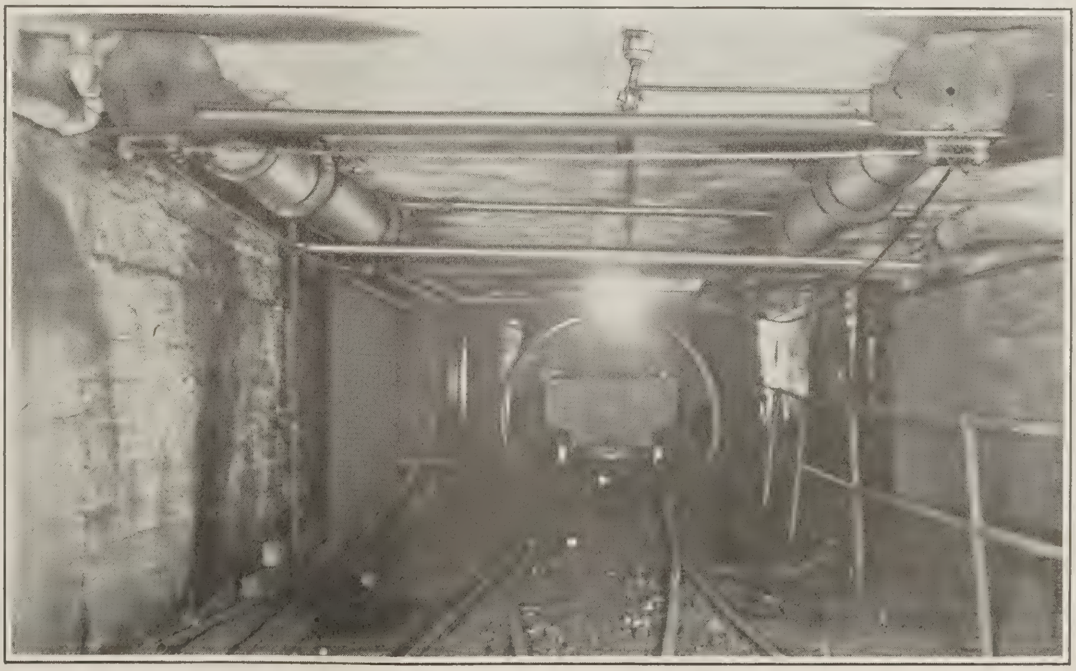
**Loaded Mine Cars at the Shaft Bottom**

Trip feeders have been eliminated from this mine by placing both loaded and empty storage tracks on a gravity grade. Thus the loaded tracks are on an inclination of 1¼ per cent. Heavy concrete piers protect the turnout points.

Within a section, mining would be pushed in a full retreat, which is the plan being applied to all the existing sections in order that splits of air may sweep the live workings first and then the goaf.

Twenty-five-pound rails are laid in rooms and butt entries. Coal is hauled in 3-ton steel cars to side tracks by storage-battery locomotives. Fifty-pound rails are laid in cross and main entries and from the gathering partings the coal is hauled in trips of 35 cars to the shaft bottom by two 13-ton locomotives. The maximum haul is about 1½ miles. If present plans materialize the main haulway will soon be laid with 60- or 70-lb. rails. This improvement will be in accord with the modern tendency toward heavier track.

Coal is discharged from the mine cars by a 2-car, air-operated rotary dump which has a continuous-performance capacity of 6 cars per minute. Inasmuch as the dumping cycle is only 6 sec. in duration, 14 sec. are available between dumps for changing cars, which is ample time. The gate equipment under the dump is capable of handling the contents of eight cars per minute. It thus will be seen that with the skip hoist-



**Rotary Dump**

Solid cars, turnover dumps and skip hoisting are all rather out of the ordinary in Pennsylvania mines. This dump is capable of discharging six three-ton cars of coal per minute with ease. It is actuated by compressed air, the operating cylinders being fastened to the roof instead of the floor as is generally the case. The dump is on a 1½ per cent grade so that the cars proceed across it by gravity without loss of time.

ing at the capacity rate of 6,000 tons per day the dumping and loading equipment would operate in a comparatively leisurely manner.

All of the shaft-bottom equipment is operated by compressed air under 80-lb. pressure. From the dump the coal is discharged into 4-ton weigh-baskets and from thence into a 38-ton bin. Fly gates, controlled by the dump operative, allow rock to be bypassed into a 30-ton rock bin. One such fly gate is arranged under each car so that one car of rock and one car of coal can be dumped simultaneously, as well as two cars of either rock or coal. Air gates on both bins regulate the feed from them to either of two measuring pockets. Manually-controlled air gates govern the passage of the coal from the measuring pockets into either of the 10-ton skips.

### Uncommon Shaft Bottom

In several respects the shaft bottom in the Harmar mine is out of the ordinary. The loaded and empty storage tracks are not parallel, as is often the case with cage-hoisting where end dump cars are shunted by a kickback from the loaded track through a shoofly to the empty storage track. A kickback layout is always a source of trouble, which might well be avoided where possible. This difficulty is surmounted in this mine by establishing the empty storage, as shown in Fig. 1, as a continuation of the loaded track but, of course, beyond the rotary dump.

Both tracks are double. Cars are fed to the rotary dump by gravity and taken away in the same manner. The loaded side has a storage capacity of 225 cars and is on a grade of 1¼ per cent. The empty side can hold 250 cars. It is on a grade of 1½ per cent within the limits of the runoff from the cage, and on a more gentle inclination from there on. In this way worries arising from inopportune breakdowns of car hauls or feeders are eliminated.

Where the mine output is dumped within the mine the danger, and detrimental effect of the coal dust upon the health and efficiency of the crew, is ever present unless some means is provided to abate this nuisance. This is accomplished in the Harmar mine by a rather ingenious control of the ventilating current in the vicinity of the main bottom.

The main intake is a concrete, man-and-supply slope which is 580 ft. long on a pitch of 14 deg. In this passage a brick curtain separates the manway from the supply compartment. The exhaust shaft is about 800 ft. from the main shaft, which is, of course, neutral, being neither a downcast nor an upcast.

At *E* in Fig. 1 is located an old shaft which formed a part of an earlier operation within the property and which is now being utilized as an auxiliary intake. The air drawn in through this shaft travels as indicated by arrows, to join that of the main intake. However, part of this air is separated from the main course, passes through crosscuts at *A* and *B* and returns along the empty track in a direction toward the hoisting shaft to a point *F*. Here a hole in the concrete entry wall, practically adjoining the shaft, connects with a crosscut which is on a secondary return to the fan shaft. In passing through this hole and crosscut in its return to the fan, this air carries with it any coal dust that may be raised in the dumping operation. A large part of this dust settles in the return between *F* and *D*. At the latter point a regulator is located.

This arrangement does not rob the mine of needed air as the fan is now producing only about 118,000 cu.ft. at a 2-in. water gage as against its rated capacity of 300,000 cu.ft. at a 3-in. water gage. With the fan working at capacity it would be possible to attain

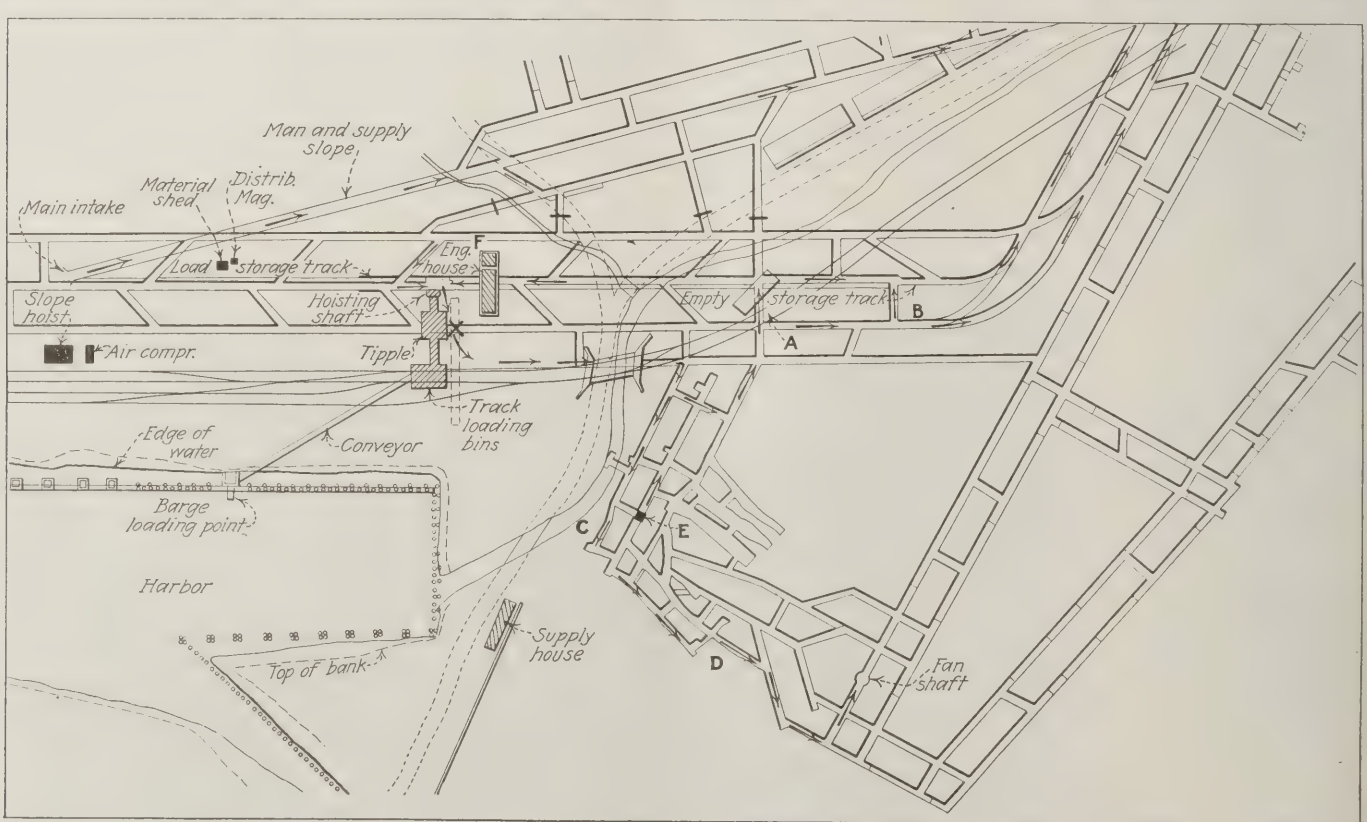
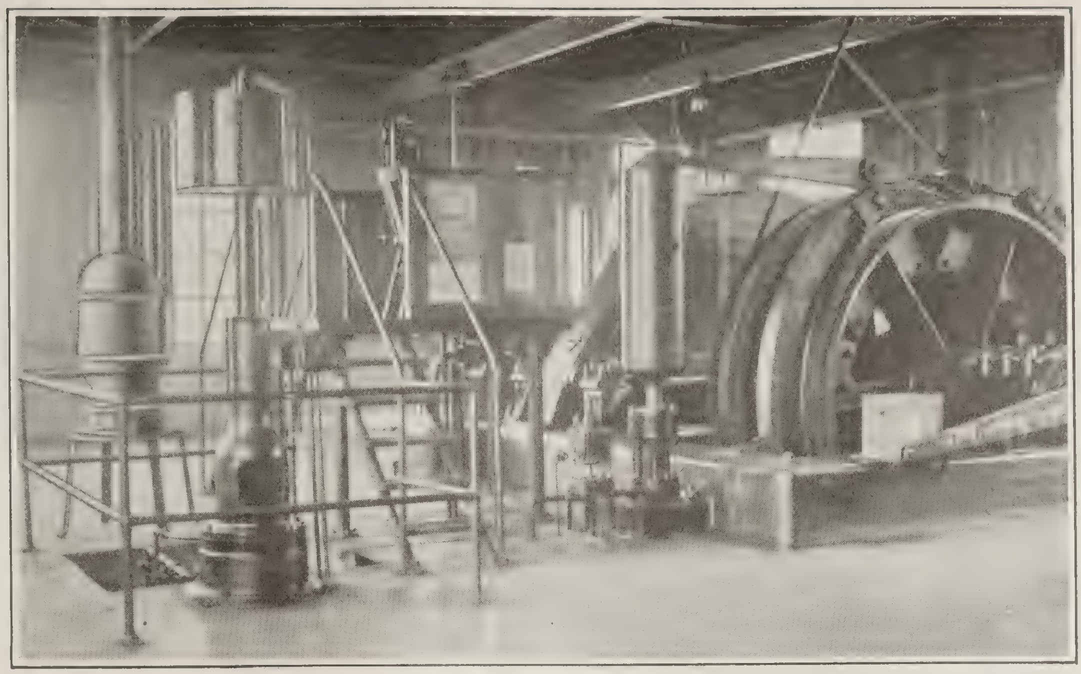


**Fig. 1—Layout of the Shaft Bottom at the Harmar Mine, Harmarville, Pa.**

This is a gravity bottom and the track arrangement, accordingly, is very simple. A small quantity of intake air travels past the shaft foot, thus carrying away the dust raised by the rotary dump.

**Main Hoist**

With the present small output the rope speed is low, being only 590 ft. per minute. The hoist is driven by a 200 hp. motor backgeared to the drum at the ratio of 40 to 1. Thus equipped this machine is capable of handling the present load with ease. It is designed, however, for the application of a 600-hp. motor which eventually will be installed when the mine is brought up to its intended capacity of 6,000 tons per day. In the meantime the smaller motor draws far lighter loads from the line than would the heavier machine.



the same result by dividing the old shaft at *E* into two compartments, installing a small exhaust fan at the top of this shaft and erecting a stopping at *C*. The air taken in through the old shaft would then follow identically the same path as already described except that on its return to *C* it would be exhausted through the old shaft instead of through the main fan shaft, as is now the case.

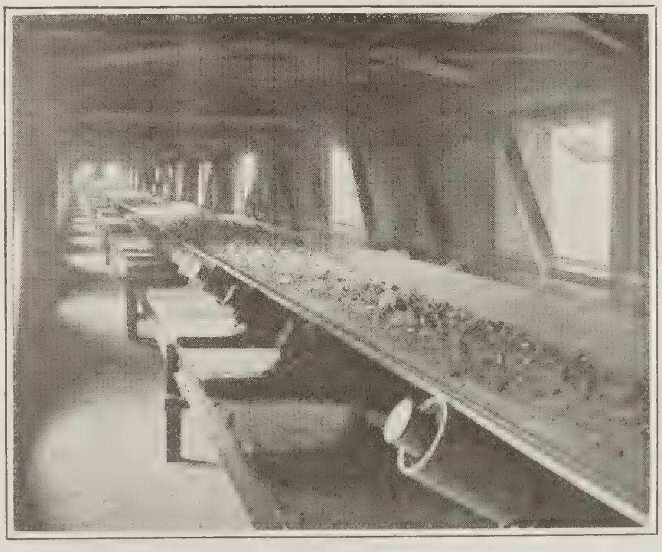
Apparently the management believes in slow-speed hoisting for it expects a maximum capacity of only 6,000 tons a day from the two 10-ton skips which have a lift of only 313 ft. between the bottom and top landings. Moreover, it does not believe in motoring the hoist to the ultimate requirements until such time as the mine is producing at capacity rate. It has installed on the hoist a motor which is smaller than that necessary to handle the capacity output of the plant. Its speed of hoisting is lower than the conservative speed at which the hoist eventually will operate.

The design of this hoist calls for a 600-hp. motor at a duty of 6,000 tons in 8 hr. Knowing that for several years at least the daily output would not much exceed 3,000 tons, a motor of only 200 hp. was installed. This machine gives a rope speed of only 540 ft. per minute by a 4 to 1 reduction to a counter shaft and a 10 to 1 reduction thence to the drum. The peak load on this hoisting equipment is about 150 amp. and the average load approximately 46 amp. The peak load with this arrangement is considerably less than it would be if a 600-hp. motor were used and a substantial economy in power is thereby effected. Simultaneously the slower speed effects a saving by lessening the wear and tear on the rope and other hoisting gear.

Coal is discharged from the skips into a 12-ton receiving hopper, whence it passes over bar screens which separate the slack from the lump. The slack may be delivered either direct to railroad cars or onto picking tables, under the lump. As a second alternative it may be delivered direct to a 1,000-ton bin. Run-of-mine either picked or unpicked can also be delivered direct to railroad cars or to the bin. The usual practice, however, is to run the picked lump through one of two 42x48-in. toothed-roll crushers, each having a capacity of 300 tons per hour, thus reducing it to sizes ranging from 2½ in. down. From the crushers this coal passes to the bin.

A steel apron feeder carries the coal from this bin to a 48-in. belt conveyor 64 ft. long which discharges either to chutes leading to railroad cars or onto a second apron feeder and thence to a second belt conveyor. The latter is 48 in. wide and 285 ft. long. It carries coal from the tipple to a barge loading station on an artificial harbor which connects with the Allegheny River at the mouth of Deer Creek. This harbor was formed by dredging out nearly 200,000 cu.yd. of material. It permits water transportation by 1,000-ton barges loaded with only 600 tons because of the low stage of the Allegheny above Pittsburgh. These boats are then towed from the mine to the byproduct coke plant at Steubenville on the Ohio River.

A vertical section from top to bottom of the Thick Freeport bed in the Harmar mine is roughly as follows: An 8-in. band of top coal, high in ash and sulphur; an upper bench of clean coal 2 ft. thick which



**River Coal Conveyor**

This conveyor which is 48 in. wide and 285 ft. long center to center, transports the coal from a 1,000-ton bin to a barge loading station on the artificial harbor. It has a capacity of 800 tons per hour at a comparatively slow speed.

**Mine Fan Operating on the Exhaust System**

This fan has a capacity of 300,000 cu.ft. of air at a 3-in. water gage. At present, however, it is so operated as to produce only 117,600 cu.ft. against a 2-in. water gage. The light on the line pole is a flicker signal indicating whether or not the fan is in operation.

is separated from the 3-ft. lower bench of clean coal by an 8- to 10-in. band of bone, and lastly there is an 8-in. band of bottom coal, likewise high in ash and sulphur. It should be remembered that this bed is under a weak roof.

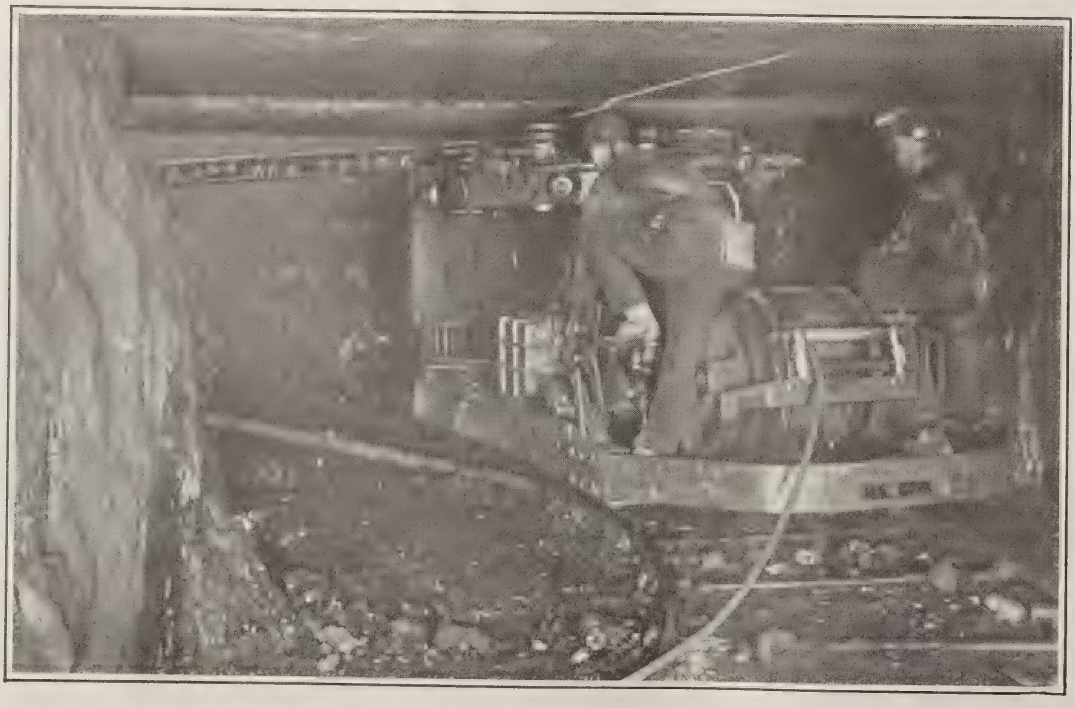
The metallurgical use to which this coal is put naturally demands a comparatively low ash and sulphur content in the raw fuel as delivered to the byproduct ovens. The bottom band of impure coal adds nothing to the output because it is not removed. The bone is separated from the coal at the face and on the picking tables. The top coal and roof material contributes largely to a high ash and sulphur content unless they are eliminated. This cannot be done well by hand seperation.

Until recently the general practice was to undercut the bed above the bottom coal. But this procedure was accompanied by the difficulties already reviewed and also entailed a heavy timbering cost. Thus in the majority of entries and rooms where the coal is undercut the roof is not self-supporting and requires the use of 4- and 6-in. I-beams, 12 ft. long, on 6- to 8-ft. centers. In addition the roof must be further supported by lagging, and cribbing wherever it has arched.

In an attempt to eliminate these difficulties a turret cutter was installed and gave such satisfactory results that a second and then a third machine of the same type were purchased. In fact, so well pleased is the company with the results obtained from these cutters that it intends to replace all of its other machines with them. But this, of course, will take time because the change will necessitate training runners, widening clearances, altering track arrangements and educating the miners to shooting top cuts instead of those made in the bottom.

The turret machine cuts below the top coal, thus avoiding its high ash and sulphur, and assisting in holding the roof. The cutterbar is 9 ft. long and makes a cut 9 ft. deep. The machine will sump in, cut across a 12-ft. entry face and sump out again in about 10 min.; it will similarly cut a room in about 15 min. The cutting is hard, especially as the upper bits come into constant contact with the high-sulphur top coal. The upper bits are changed after cutting one room or two entries and sometimes bits of all positions are changed with equal frequency. On an average, all bits are changed after cutting about 30 lin.ft. of kerf. Each of the three machines now installed cuts, on an average, 18 mixed places in 8 hr., which is a fair performance, all things considered.

In areas of solid coal, places that are top cut require no steel beams except under unusually wide spans of roof or where clay veins are encountered. It is difficult to keep the analysis of coal coming from places which are undercut, below 1.3 per cent sulphur and 9 per cent ash. Top cutting produces a coal that runs about 1 per cent sulphur and 7 per cent ash. The top coal in undercut places is loaded and paid for—an operation and cost which are avoided in the case of top cutting. A saving is realized also in the handling of slate and in the picking of refuse in the tipple.



**Top Cutting**

In this bed the coal next the roof is high in ash and sulphur. Cutting in the top stratum somewhat below the actual roof and thus leaving some coal in place, has rendered it possible to appreciably reduce both the ash and sulphur content of the mine product. But this is not the only advantage gained by top cutting. Where the coal is undercut heavy roof supports must be employed as the roof weathers readily and arches to great heights. This type of machine thus far has practically eliminated this difficulty. As rapidly as possible more machines of this kind will be added until the mine will be entirely equipped with them.

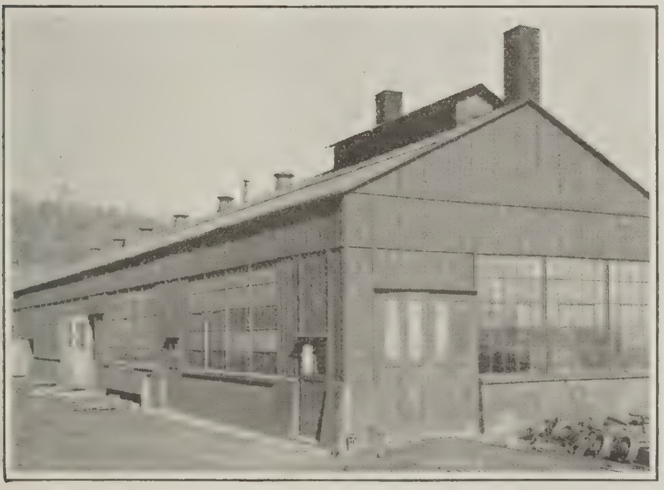
**Front View of a Terrace**

A few houses were on the property when the Consumers Mining Co., took it over. Construction of houses in rows such as here shown effected a substantial saving in end walls, which was reinvested in bath rooms and heating appliances. The wooden steps leading to the porches are soon to be replaced with concrete.

Altogether the topcutters are effecting appreciable economies.

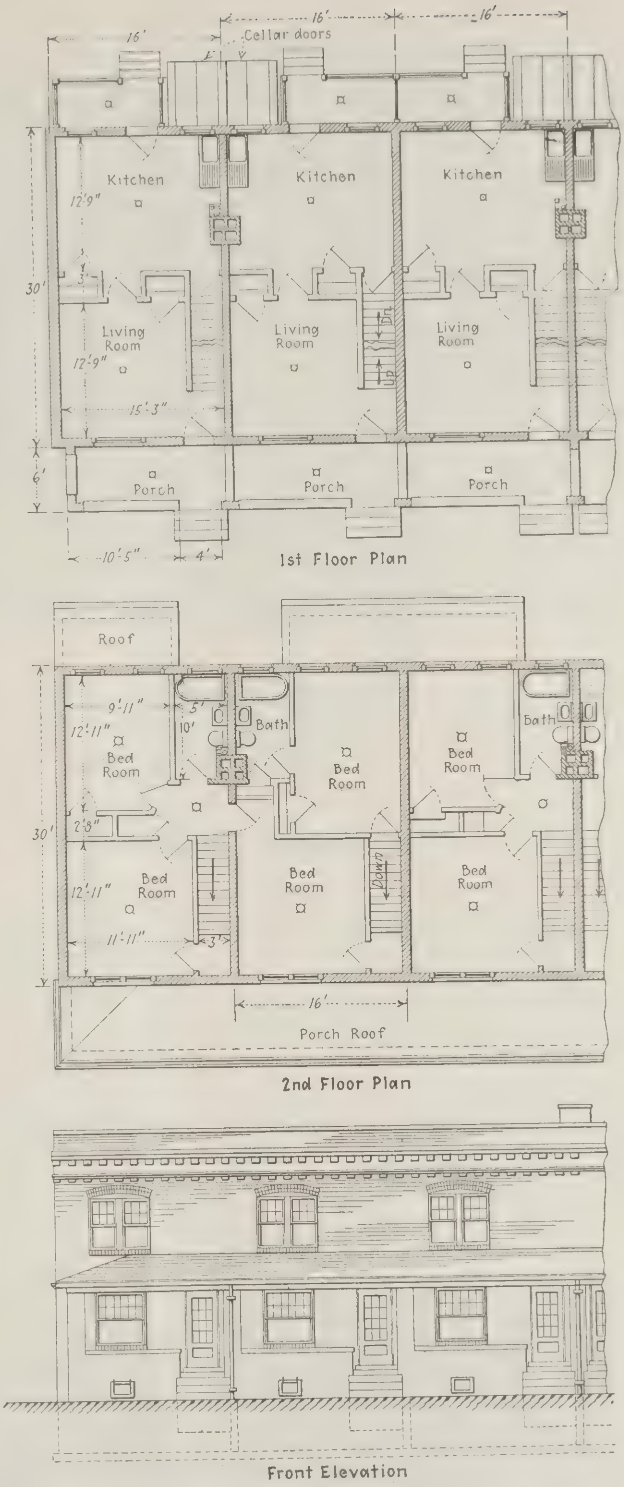
Housing at the Harmar mine is of an order at least equal to that of any coal company in the country. Dwellings are all substantially built; some of wood, some of brick and still others of stone. They are tapped to sewer lines which discharge into a sewerage disposal plant; they are provided with running water which is filtered and chlorinated before being delivered into the mains. All but 10 of the 134 dwellings at Harmarville have a bath room equipped with suitable fixtures; all are fitted with hot water heaters and all but 17 are supplied with hot air house furnaces.

This plant manifests clearly the potent influence that the steel industry has exerted upon its industrial housing. There are here 17 five-room bungalows, 16 brick rows or terraces in each of which is a combination of 3-, 4- and 5-room apartments, as illustrated in Fig. 2, which shows floor plans and a front elevation of a typical row. These 16 terraces contain 117 apartments. Fifty-three of these have four rooms, 32 have three rooms and 32 have five rooms. In addition to the above buildings there are five double stone houses.



**Portable Steel Shop Building**

Blacksmith, machine and electrical shops are all joined together and under one roof. Such buildings as this have the advantages of being light, easily erected and when worn out have a salvage value.



1st Floor Plan

2nd Floor Plan

Front Elevation

**Fig. 2—Floor Plans and Elevation of a Terrace**

Level ground is at a premium at Harmarville. Accordingly, rows of houses were built in place of the single dwellings ordinarily found at coal plants. Even with the housing facilities provided, many of the men prefer to live in nearby communities and travel to and from work by auto, trolley or train.

By no way other than that described could the men at this plant have been comfortably housed because level ground near the plant is limited in extent. Obviously, even the housing facilities provided are insufficient to the needs of all the workers of the Harmar mine. However, as the town is on a hard macadam road and is served by both a trolley and a railroad, a large number of the men prefer to make their homes in Parnassus and New Kensington, two neighboring fair-sized industrial and business communities.

Sewage is conveyed from the houses through 4-in. tap lines discharging into a 10-in. main. Partly by

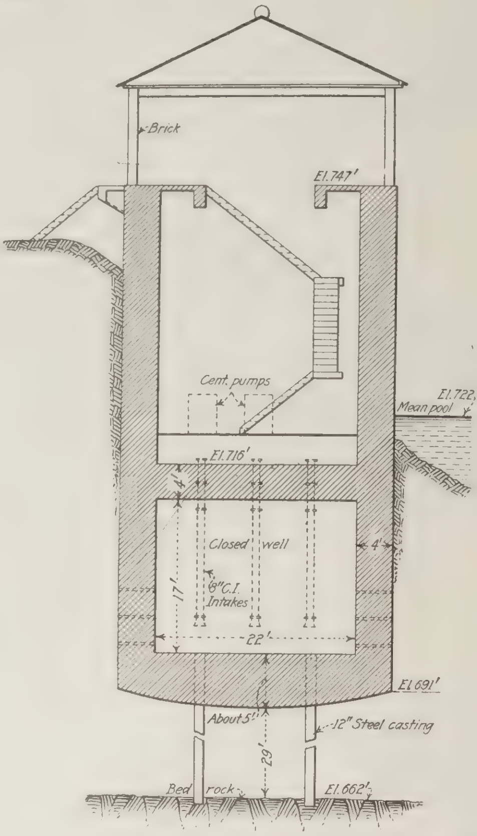


**Fig. 3—Cross-Section Through Pump House**

Water for the town of Harmarville is filtered naturally. A large circular well curbed with heavy concrete was sunk to a depth well below the bed of the river and the water allowed to reach it by flowing through the glacial drift of the river shore. Even though thus purified by the natural filtration this water is chlorinated before it is delivered to the house mains.

gravity and partly by pumping it is emptied into a syphon chamber and passes thence into an Imhoff tank where it is digested. The effluent is chlorinated before its final discharge into the Allegheny River.

Earlier in this article it was stated that Harmarville water is filtered. This is, indeed, the case, but the filtering is not artificial. Water from the under flow of the Allegheny River is forced hydrostatically by its own pressure through a considerable thickness of sand and gravel in the stream bed into an airtight well chamber lying below the bottom of the river. From this well it is pumped to a storage tank elevated well above the town.

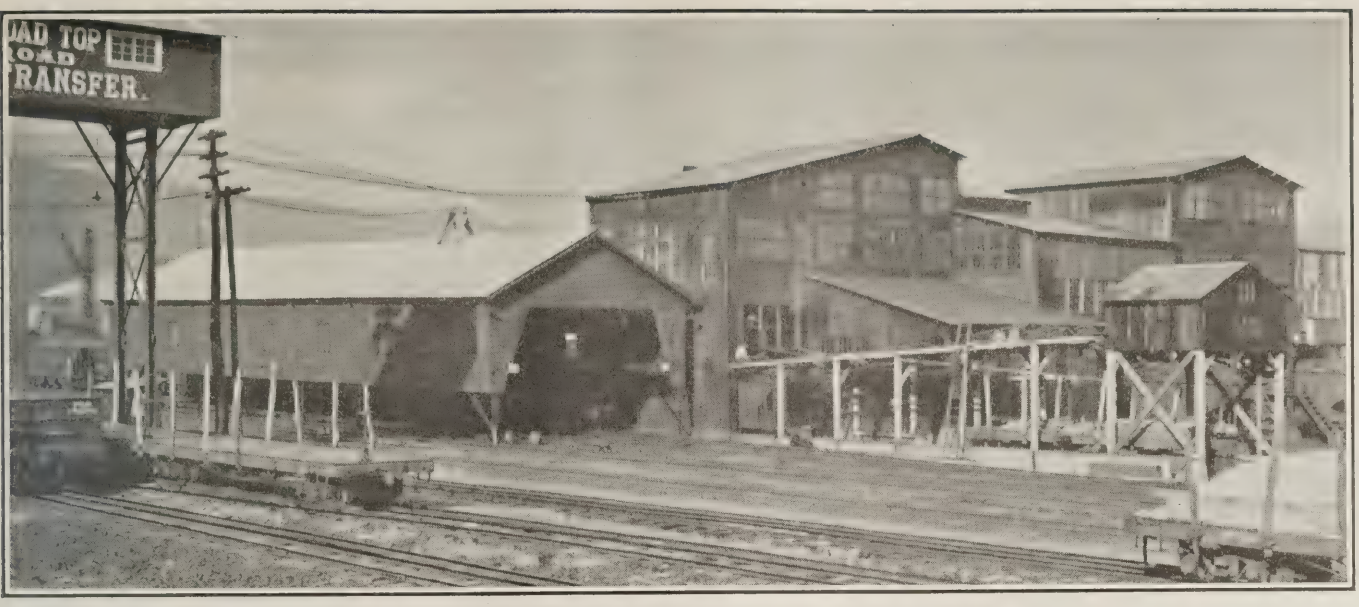
Fig. 3 is a section through this water plant. A circular well 22 ft. in inside diameter with reinforced concrete walls 4 ft. thick extends from the high water stage of the river to a point 31 ft. below its mean stage and 19 ft. below the river bottom at the point where the plant is built.

The circular concrete shell was sunk by the open-caisson method. The walls were built thick and heavily reinforced in order that they might withstand the heavy ice flows which occur on the river in the early spring. At the bottom of the shell is a concrete floor 5 ft. thick which was laid under water. In it are twelve 12x12-in. seepage holes. Also projecting through this bottom and extending downward to bed rock, are four 12-in. steel casings perforated by ⅛-in. holes on ½-in. centers and extending throughout a 10-ft. zone measured from the bed rock upward. The bottom of the well wall also is provided with 30 weep holes. These various openings are the means by which pure water from the underflow of the river finds its way into the well chamber which is air-sealed by a roof wall 4 ft. thick and placed 17 ft. above the bottom of the well. Projecting through this roof wall are three cast-iron intakes, two of which are each connected to a centrifugal pump, having a capacity of 500 gal. per minute against a 120-ft. head. The third intake is plugged at present as the water requirements of the plant and town are not sufficient to warrant the installation of a third pump.

As the water leaves the centrifugal pumps it is chlorinated and then passes through a 10-in. line to a 60,000-gal. reservoir tank. Whenever the pumps are in operation the water is delivered direct to the house lines, only the surplus going into the tank. In case of fire, water may be delivered under heavy pressure direct from the pumps to the fire plugs.

**Harmar Officials**

Kneeling, from left to right: R. E. Shaw, master mechanic, Frank M. Correl, safety inspector; Sam Yates, fire boss; James Sampson, fire boss; Frank Smith, motor boss. Standing, from left to right: Joe Middlemas, machine boss; J. F. Adamson, superintendent; A. A. Schneider, mine foreman; D. R. Snyder, fire boss; Cliff Barton, weigh master; D. Foster, assistant mine foreman; H. Couch, assistant mine foreman; Walter Giesy, mining engineer; John Beatie, assistant mine foreman; Earl Adamson, fire boss, and Charles Sneddon, coal inspector.



# Sand Flotation Process Enters Bituminous Field

## Cleaning Method Well Known in Anthracite Is Now Used in Central Plant Serving Three Broad Top Mines—Cuts Ash Content to Uniform Percentage

**By Alphonse F. Brosky**
Assistant Editor, *Coal Age*,
Pittsburgh, Pa.

A MECHANICAL bituminous coal-cleaning plant which in point of technique employed differs from all others in the bituminous coal industry is that located at Mt. Union, Pa., approximately midway between Pittsburgh and Philadelphia, on the main line of the Pennsylvania R.R. Here for the first time the Chance sand flotation process of preparation is applied to bituminous coal on a commercial scale.

This plant serves a double purpose. First, it transfers coal from the narrow-gage equipment of the East Broad Top Railroad & Coal Co., to standard-gage equipment of the Pennsylvania line; and second, it provides preparation facilities.

Coal here treated comes from the East Broad Top mines of the Rockhill Coal & Iron Co., at Robertsdale, Pa. These are in the Fulton bed, which averages 4 ft. of coal, divided into two benches by a parting of slate and fire clay. The thickness of this parting varies from about 2 in. to 5 ft. The bottom bench of coal is fairly uniform being about 1½ ft. thick, while the top bench varies from 2½ to 3 ft. in thickness.

The Broad Top deposit lies within the folded area of the Appalachian field, and consequently the Fulton bed is wavy. Its contour resembles that of a strip of corrugated sheeting. The rolls within the bed, which pitch heavily, preclude the economical use of undercutters and coal, accordingly, is shot off the solid. This breaks the parting into more or less small pieces.

In 1914 a plant combining transfer facilities and hand-picking equipment (screens, picking tables and loading booms) was erected at Mt. Union by the East Broad Top Railroad & Coal Co. to handle coal originating on its lines. The Rockhill Coal & Iron Co. took advantage of these facilities and shipped the following hand-picked sizes: Run of mine, lump (over 4½ in.), furnace (through 4½ in. and over 2 in.), range (through 2 in. and over 1 in.), and stoker (through 1 in.). Such has been the past practice of the coal company. The capacity of the plant on this basis was 250 tons per hour.

Coal from the Fulton bed is one of the lowest volatile bituminous fuels in the country, possessing a high heat value. As such it is a coal enjoying a specialty market and wide distribution in its sized form as domestic fuel.

Because of the physical characteristics of the Fulton bed and the practice of shooting from the solid, a large quantity of the binder contained in the bed is broken into pieces too small for efficient cleaning underground. Twenty-six men on the picking tables in the old plant were unable to control the ash content sufficiently to meet the requirements of the market served. When uniformly free of impurities this coal is ideally suited to the ceramic industry where kilns must be drawn through a heat of predetermined maximum intensity in a given time. It is suited also to domestic use, as well as to power plants and railroads that operate within the limits of cities which have stringent ordinances directed against smoke.

The potentialities of these specialty markets made a uniform product essential. Wide fluctuations in the ash

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Of the three structures shown in the headpiece the largest is the coal-cleaning and transfer plant of the Rockhill Coal & Iron Co. This is operated by the East Broad Top Railroad & Coal Co. in connection with its coal transfer station. The long, narrow building adjacent to the washery houses the dump pits which, together with coal-handling equipment, facilitate the transfer of coal from cars on narrow-gage railroad track to cars on standard-gage tracks. The three-rail combination tracks are easily seen. Arrangements are such that of the coal coming from the mines of the Rockhill Coal & Iron Co. in the Broad Top field, that which is under 4½ in. is conveyed into the washery for treatment. The transfer plant has been remodeled from an old structure to which a cone house has been annexed. Of course much new equipment has been installed.

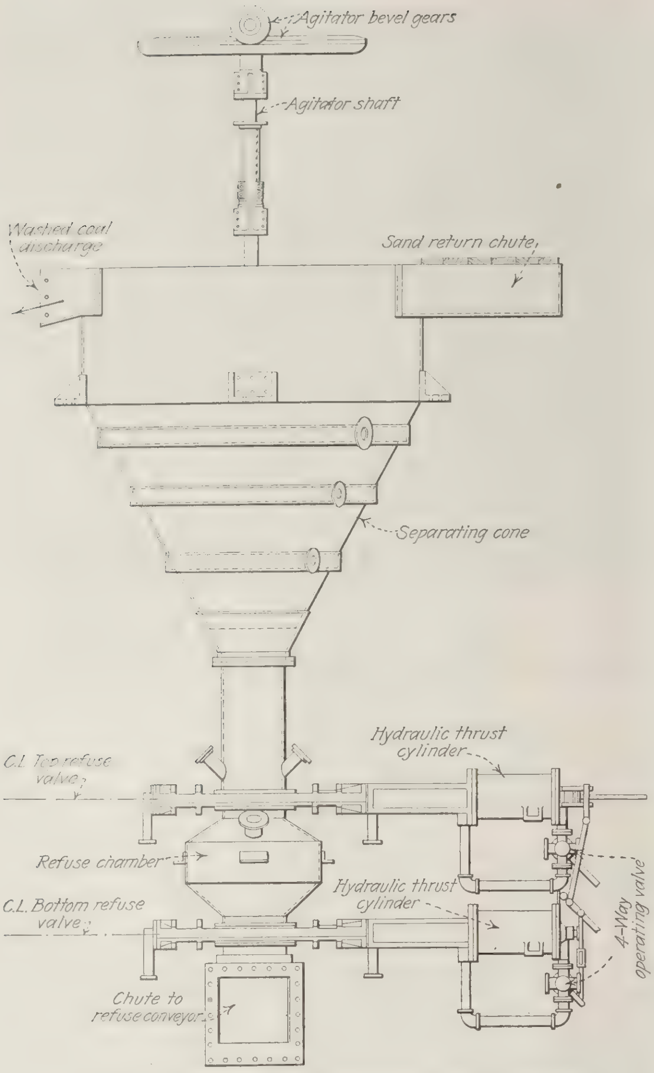


**Fig. 1.—Chance Sand Flotation Coal Cleaner**

and sulphur content of coal shipped from the mines resulted at the least provocation as, for instance, from an increase of output. Hand-picking methods were futile in any attempt to keep the ash content fixed.

Coupled with this fact, it was found necessary to increase the capacity of the Mount Union plant in order to accommodate increased tonnage produced at the mines. The results which were obtained by hand picking indicated that if a larger tonnage were to be handled and hand-picking methods continued not only would the force of pickers have to be augmented but additional picking facilities would have to be installed.

It was decided, as a result, to investigate various methods of cleaning coal with the idea of installing a suitable mechanical process which would eliminate the human element in preparation.

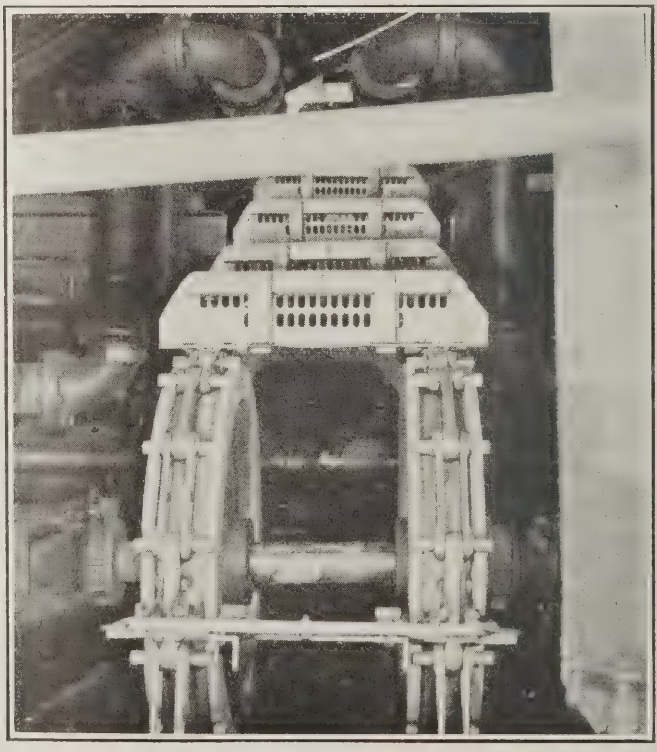
An investigation of various methods, including the sand flotation process, was carried on over a period of a year. At first the company hesitated to adopt any wet process because of the moisture which would thus be added to the coal. However, a study of shipments over a period of years disclosed the fact that an average of four days elapsed before the coal reached its destination, during which time it would likely encounter rain or snow. The mere fact that consumers had not complained of moisture derived from this source dispersed the fear of the relatively small quantity of moisture that would be added by the cleaning process.

The use of sand was not viewed with favor until after thorough tests had been completed. These showed that the sand can be completely removed from the washed coal without difficulty.

The coal to be treated was subjected to complete screen and float-and-sink tests with liquids of specific gravities ranging from 1.4 to 1.6 on all materials passing through a 1-in. square opening. It was a foregone conclusion that the coal passing through 4½-in. and over 1-in. openings would have to be cleaned, because of the concentration of impurities within this range of sizes. The results of these tests showed that the cleaning of coal smaller than ⅜ in. was unnecessary, its ash content was not high and remarkably uniform. The proportion of this small size amounts to 15 per cent of the total product.

It was decided to continue preparation of the material passing over 4½-in. openings by hand-picking methods. Its quantity, however, represents only 18 per cent of the total product. The final outcome of the investigation, therefore, was the adoption of the Chance process for the cleaning of the sizes between the 4½-in. and ⅜-in. products.

Sand flotation as here applied is "the floating of coal on a fluid mass of sand and water" through which slate and other refuse readily sinks. This flotation of the coal and sinking of the refuse is accomplished in the cone separator shown in the illustrations. The top of the separator is a cylindrical collar, in which the coal is separated from the refuse. From its bottom a cone tapers downward and conducts the refuse to a central discharge point at its extremity. This leads to a large diameter pipe known as the classifier column where the sand is separated from the refuse. Below this pipe is a trap chamber for the refuse which may be closed or opened at the top or bottom, as required, by means of two valves. Below this trap is a chute which conducts the refuse to a scraper conveyor.



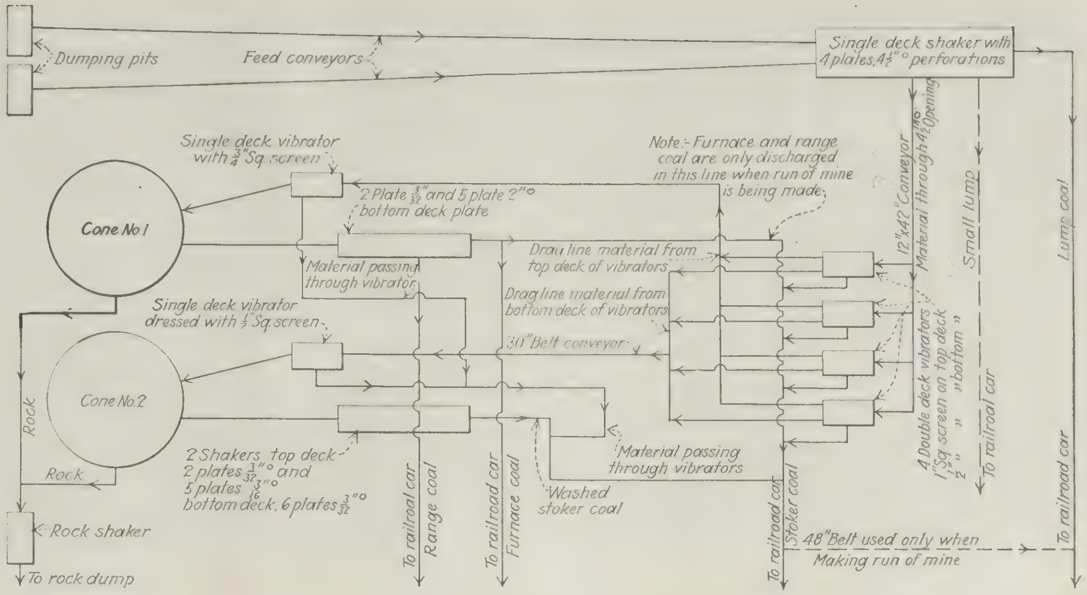
**Refuse Conveyor**

This conveyor drags the refuse drawn from the cones to the refuse desanding shakers. It is driven from the main countershaft in the cone house.

FIG. 2

**Flow Sheet**

This drawing is to indicate the course of the coal from the time the sizes to be washed are screened out, until they are fed through the two units of the sand flotation cleaner, and delivered at the discharge points. The refuse and coal are both desanded thoroughly before loading so that the actual leakage of sand out of the cleaning cycle is negligible.


Dumping pits
Feed conveyors
Single deck shaker with 4 plates, 4½"° perforations
Single deck vibrator with ¾" Sq. screen
2 Plate 3/32" and 5 plate 2"° bottom deck plate
Cone No. 1
Material passing through vibrator
Single deck vibrator dressed with ½" Sq. screen
Cone No. 2
Rock
Rock
Rock shaker
To rock dump
2 Shakers top deck 2 plates 3/32"° and 5 plates 3/16"° bottom deck, 6 plates 3/32"°
To railroad car
Range coal
To railroad car
Furnace coal
Washed stoker coal
Drag line material from top deck of vibrators
Drag line material from bottom deck of vibrators
30" Belt conveyor
Material passing through vibrators
Note:- Furnace and range coal are only discharged in this line when run of mine is being made
12"x42" Conveyor
Material through 4½"° Opening
4 Double deck vibrators 1" Sq. screen on top deck ½" " " bottom "
Small lump
To railroad car
Lump coal
To railroad car
To railroad car
Stoker coal
48" Belt used only when Making run of mine

Within the collar, extending from a level slightly below a discharge lip to practically the bottom of the cone, is a fluid mass composed of sand and water of a specific gravity greater than that of the coal but less than that of the slate, which are separated. This fluid mass is sustained by water entering the cone through the classifier column. The flow of this water through the classifier controls the specific gravity of the fluid mass—the less water the greater the specific gravity of the mixture. On entering the cone this water loses its velocity and is spread horizontally in "sheet-like layers" which percolate gently upward through the sand, displacing that water which is above it.

A spindle shaft extends into the separator coinciding with its main axis. To it are attached horizontally projecting paddles. These revolve within the fluid mass and, together with opposing injections of water from three peripheral manifolds, serve to agitate the cone's contents. These two agitating agencies serve to counteract each other and result in a tendency toward whirlpools, eddies and boiling. The fluid mass, however, literally revolves with the arms as a solid and in so doing serves to transport the floating coal through an angle of nearly 360 deg. from the point of feed to that of discharge. Overlying the fluid mass is a layer of clear water.

Over the top of this fluid mass is introduced and drawn off a gentle flow of sand and water, in a closed circuit from and to a sand sump. The separation of slate from coal takes place on the surface of the fluid mass as the coal floats in a circular path through nearly 360 deg. At the discharge lip the coal runs out of the separator in company with the overflow of sand and water. The sand and water are sieved from the washed coal on shaking screens adjoining the separator.

The Mt. Union plant as it stands today is a remodeled installation, with the addition of a building that houses the coal washing equipment. Incidentally no changes were made in the track layout under the tipple. As now arranged, this plant has a capacity of 500 tons of coal per hour, of which 335 tons per hour is washed. A flow sheet of the equipment appears in Fig. 2.

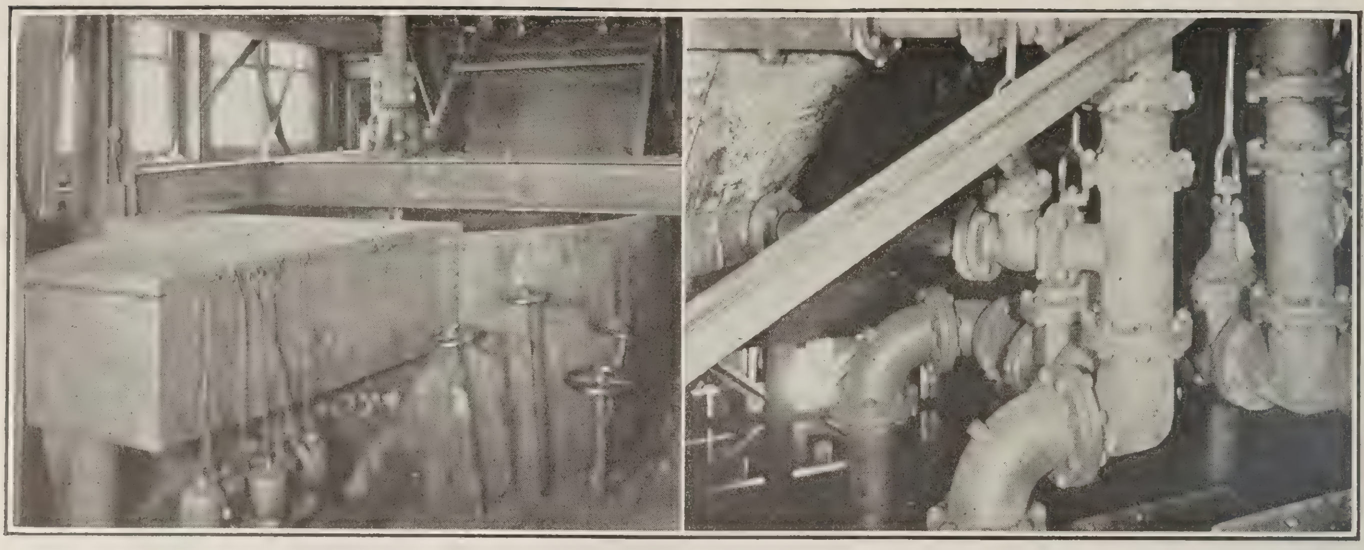
Coal is delivered to this plant from the mines 30 miles away in narrow-gage hopper cars, each of 35 net tons capacity. It is dumped into two 100-ton pits, from which it is drawn by automatic feeders discharging onto two inclined apron conveyors. These deliver the coal at a common point onto a shaking screen 6 ft. wide. This shaker is dressed with four plates 3 ft. long having 4½-in. round openings. The coal passing over these openings is discharged as large lump onto a combination picking-table and loading boom where it is picked by three men before being loaded into standard-gage railroad cars. By adding plates with 10-in. round openings to the lower end of the shaker, two sizes of lump (under and over 10 in.) can be prepared. A second or small lump picking-table and loading boom is provided for this purpose but has not been used as yet.

That coal which passes through the screen openings on the shaker is carried by a 42-in. scraper conveyor to a battery of four double-decked vibrating screens. The upper deck of each vibrator is dressed with wire screen having 1-in. openings over an effective area 4 ft. wide and 10 ft. long. The lower deck which has the same effective screen area as the upper one is dressed with wire screen with ½-in. openings. As these screens are installed on a 34-deg. slope, the effective size of their openings is about ⅞x1 in. in the upper and ⅜x½ in. in the lower deck. Each deck is composed of two 4x5-ft. screens in tandem.

Each vibrator is independently driven by a 3-hp., 1,200 r.p.m. motor through eccentrics of which there are two for each screen. These eccentrics are of small throw and are driven at high speed. Each vibrator has a capacity of 100 tons of feed per hour. Their capacity per square foot of screen area is believed to be greater than that of any other screen of the same general type yet developed.

These vibrators divide the coal into three distinct products: (1) coal over 1-in., (2) that under 1-in. but over ½-in. and (3) that under ½-in. The No. 1 product, as a combination of furnace (under 4½-in. and over 2-in.) and range (under 2-in. and over 1-in.) is washed in No. 1 cone of the cleaner. The No. 2 product is known as sized stoker and is washed in No. 2 cone. The No. 3 product in dry form is reunited with the sized stoker coal after the latter leaves the dewatering and desanding screens.

This division into three sizes is not made to facilitate a better separation of refuse from coal in the cones. No. 1 and No. 2 products are of approximately the same quantities and are equivalent to the capacity of the



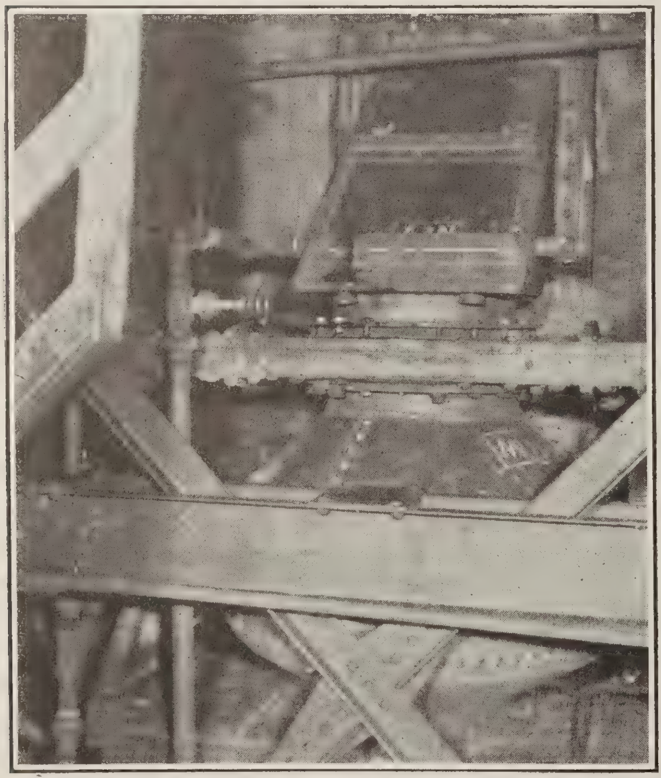
**Furnace and Range Cone Separator and Fresh Water Lines and Valves to Both Cones**

The coal is fed from the guard screen which is shown above and at the far side of the separator in the illustration on the left. Sand and water are pumped through the stand pipe in the foreground and flow gently into the separator. The refuse sinks through the fluid mass on which floats the coal. The objects hanging from the sand-and-water intake are specific gravity measuring weights. The valve stems are carried to this floor to facilitate the work of the cone operator in controlling the flow of water through the classifier column and the manifolds.

Taps from the water lines shown on the right lead to the manifolds and the classifier column. Practically all water circulated is reclaimed and reused.

separate cones. The No. 3 product, as stated above, does not require preparation. As a matter of fact, the No. 1 and No. 2 products could be cleaned in the same cone as well as separately if the capacity of the plant were less.

The No. 1 product (furnace and range), passing over the upper deck of the vibrators, is delivered onto a drag conveyor and carried to a 30-in. belt which transports in to a vibrator, of the same type as those already described but having only one deck. This is dressed with ¾-in. square-opening screens. It serves only as a guard screen for the removal of fines which in dry form are joined with the washed stoker size. The coal passing over this vibrator is fed to the No. 1 cone where the refuse is removed from it.



**Refuse Chamber and Chute**

Refuse sinks to the bottom of the separator where it is discharged at intervals of about 4 min.

On leaving this cone, the coal together with a certain quantity of sand and water flows onto the upper deck of a double-decked, balanced shaker 5 ft. wide and 4 ft. long. By this machine the fluid mixture of sand and water is sieved from the coal. The upper deck is dressed with two plates about 3 ft. long each, provided with 3/32-in. perforations. These two plates in the upper deck hang over in the clear of the lower deck and through their openings is sieved, almost all of the sand and water which accompanies the coal onto the upper deck. What little sand clings to the coal is removed by sprays of fresh water, located at intervals along the remaining length of the shaker. Adjoining the two plates of small openings on the upper deck are five plates, each about 3 ft. long, provided with 2-in. openings which separate the range from the furnace coal. The latter is then delivered over a loading boom into a railroad car.

The range coal on the lower deck passes over six plates, each about 3 ft. long, provided with 3/32-in. openings and is washed by sprays of water, removing the few particles of sand which yet adhere to it. The range coal is then delivered to the railroad car by a 30-in. belt loading boom. So much for the No. 1 coal.

The No. 2 product upon leaving the lower deck of the main battery of vibrators is discharged onto a drag conveyor which delivers it to a 30-in. belt, which carries it to a single deck vibrating screen, 4 ft. wide and 10 ft. long providéd with ½-in. square openings, which removes the fines from the sized stoker coal. The fines are reunited with the material from which it is separatd after the latter is washed. From the vibrator the sized stoker coal is fed to the No. 2 cone where its refuse is separated from it.

On leaving the No. 2 cone this coal is desanded and dewatered in the same manner as is the product from the No. 1 machine. The shaker over which this size is passed is dressed on the upper deck with two plates having 3/32-in. openings. These overhang and clear the bottom deck, and through their openings the coal is almost completely desanded. Adjoining these two plates on the upper deck are five plates perforated with $\frac{3}{16}$-in. openings under which on the lower deck are six plates with $\frac{3}{32}$-in. openings. These together with jets of fresh water serve to remove what little sand is not sieved through the two small-opening plates on the upper deck.

The product on the upper deck of this screen is blended with that on the lower deck and both, together with the dry steam sizes are fed to one compartment of a 60-in., two-compartment apron conveyor. The other compartment is used only when run-of-mine coal is made and carries blended furnace and range coal. The stoker coal is discharged from this conveyor into a small hopper and thence into a railroad car.

Run of mine is made by closing the gates over the furnace and range loading booms on the No. 1 shakers, allowing these sizes to be discharged into the 60-in., two-compartment conveyor carrying the stoker coal. All three products are thus transported to a 48-in. belt conveyor. This leads to a chute where the smaller sizes join the lump in the formation of run of mine which is loaded into a railroad car on the lump track.

The refuse sinking through the fluid mass within the cone separator is trapped in the refuse chamber, from which it is drawn off at about 4-min. intervals. The discharge of refuse from this chamber is controlled by hydraulically operated interlocking valves. The refuse is discharged into a scraper conveyor which carries it to a refuse shaker. Here it is washed to recover the sand, and discharged to a refuse car by which it is transported to and dumped upon a rock bank.

The sand and water which is sieved through the shakers is sluiced to the sand sump, which acts as a large settling tank. The settled sand is returned to the cones by means of sand pumps of the centrifugal type. The relatively clear water overflowing around the rim of the sump is collected in a small reservoir which acts as a sump for the fresh water agitation pump. This pump is a 10-in., double suction, centrifugal of the volute type, with a capacity of 2,500 g.p.m. against an average head of 60 ft. The discharge from this pump supplies fresh water to the classifier columns and manifolds of both cones, and also for the sprays over the desanding and sizing shakers.

Make-up water is drawn from a reservoir located about a quarter of a mile from the plant by a 300-gal. centrifugal pump. This machine discharges approximately 200 g.p.m. through a 5-in. line into the top of the sand sump.

Sand and water are returned to the top of the cones from this sump by two sand pumps, each of 1,050 g.p.m. capacity at 33-ft. maximum head when handling 10 per cent sand by volume. The parts of these machines which are exposed to wear are made of manganese steel.

The plant was put into operation on Oct. 1 of this year and, because of the short length of time between the start of operations and the date of this article, analyses are neither complete nor sufficiently detailed to warrant publication. However, it has been proven beyond doubt that the process as applied to the cleaning of bituminous coal produces a product of uniform quality so far as ash and sulphur content is concerned. The average of analyses received to date shows a fluctuation in ash of approximately $\frac{3}{4}$ per cent and a variation in sulphur of 0.2 per cent.

Coupled with this result analyses so far made show marked reductions in ash and sulphur content of the product, as compared to that shipped when hand picking methods were employed,—the largest reductions being of course shown in the furnace and range sizes.

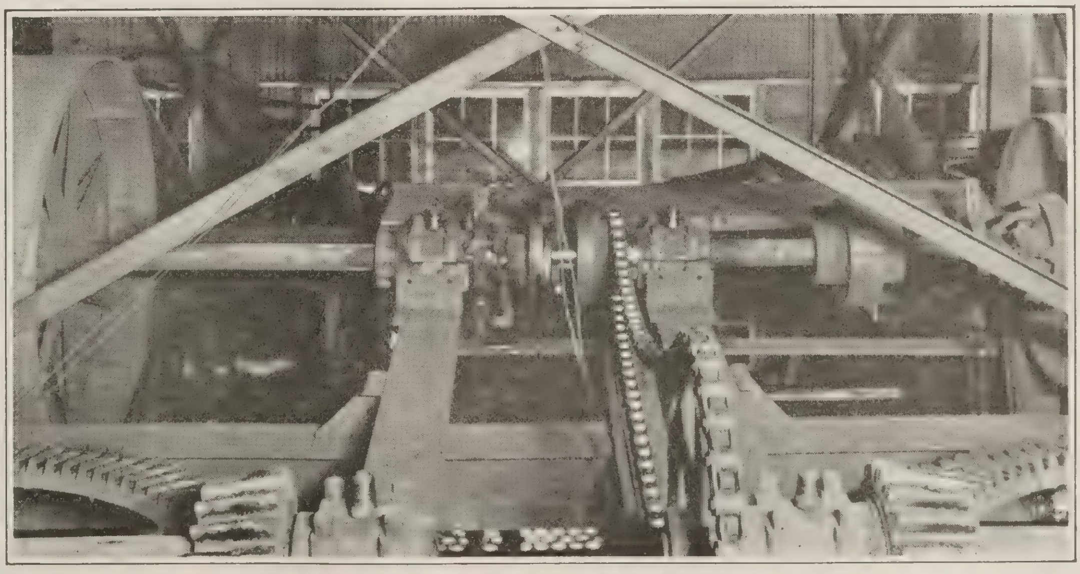
The aim underlying this installation, was naturally, the elimination of refuse from the shipped product, but this elimination is not desired at a sacrifice of good fuel. In other words, no attempt is being made to obtain a product having ash and sulphur contents equivalent to the inherent ash and sulphur of the pure coal. This would mean the elimination of fuel of relatively high value from the shipped product. The important thing which is being accomplished at this plant is the production of a coal of relatively low ash and low sulphur content, that is of uniform quality.

The best impression of the process is gained from watching the discharge of refuse from the plant. The rejected material is largely slate, mixed with bone to which adheres a little pure coal. A generous sprinkling of pyritic sulphur within the mass is readily distinguished. On the other hand, an inspection of the washed coal in the railroad cars discloses uniformly sized products which to the naked eye at least are free from mechanically included impurities. No sand was observed clinging to the washed coal.

The plant was designed and erected by the Coal Cleaning & Equipment Co. in collaboration with H. M. Chance & Co., both of Philadelphia, Pa.

**Main Drive**

It was the aim in the design of this plant to simplify the layout by locating motors at points which provided secure anchorage, and to drive combinations of units from common countershafts. This not only has simplified the drives but also has eliminated many nests of reduction gears in dangerous and inaccessible places. Also it has avoided the installing of motors and reducing gears on stilted moorings. A 75-hp. motor drives by a belt this countershaft.



# Better and Cheaper Coal Mined with Greater Safety Discussed by West Virginia Institute

LESS EXPENSIVE and more complete coal extraction, preparation that will lower impurities, shooting that will increase the quantity of large coal, flame-proof motors that will aid in eliminating gas and dust explosions and projected concrete that will keep roofs from continued scaling, formed part of a symposium on means to improve West Virginia practice in mining at the winter meeting of the West Virginia Coal Mining Institute held at Morgantown, W. Va., Nov. 24. To complete the symposium a visit was made Nov. 25 to Nemacolin, Pa., to see a mine where some of the important means suggested had been put in practice, or had been replaced by some other means tending to the same end.

R. M. Lambie, the president, occupied the chair and the meeting set down to work without the usual formalities of a welcome from the mayor and the Chamber of Commerce, the first paper being one on the "Smokeless Coals of West Virginia," by David B. Reger, of the West Virginia Geological Survey. Mr. Reger described first the semi-anthracite coals found in the Pocono series in the counties of Berkeley and Morgan, which lie in a sort of lip which projects from the northeastern portion of the state. The counties which are little known interpose themselves between Maryland and Virginia. Apparently the field which is only about 13 miles long and a mile or two wide has coal so folded and overturned and so impure as to be of little value, the impurity, however, not being part of the coal but mixed with it. The coal itself has only 6.47 per cent of ash.

Mr. Reger defined smokeless coal as that having a fuel ratio of from 5 to 2.5. Coal of this character can be found in fairly continuous, but no wholly unbroken, line from the state of Maryland in the northeast down to McDowell and Mercer counties in the south of the state and following a line about southwest. In Randolph, Pocahontas and Greenbrier counties smokeless coals certainly exist but have not yet been studied. The explored fields, consequently, divide themselves into two, one occurring in Mineral, Grant and Tucker counties in the northwest and the other in Fayette, Raleigh, Wyoming, McDowell, Sumner and Mercer counties in the South. The first field has a little over two billion tons available and the lower field in excess of eleven billion tons. The fields have been barely scratched, despite the extensive operations that have been carried on for years.

Frank Haas, consulting engineer, Consolidation Coal Co., remarked that his investigations established the fact that not all the coal in Fayette County, despite the common belief, was smokeless or semi-bituminous. Mr. Reger agreed with that statement provided it was assumed that the true dividing line could be set empirically at a fuel ratio of 2½. Still he asserted that the greater part of Fayette County could lay claim to having smokeless coals in accord with that definition. He agreed with Mr. Haas that smokelessness accorded not so much with the geological horizon as with the geographical location, though along the edge of the smokeless field certain seams were less smokeless than their geographical location would lead one to suppose.

Thomas Fraser, who is assistant professor of the mining engineering department of West Virginia University, then read a paper on the "Preparation of Commercial Coals" showing the sizes adopted for anthracite and for the southern Illinois coals, the operators in the latter district having been compelled to adopt a careful classification of coal into sizes in order to meet

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The headpiece shows some of the participants in the West Virginia Coal Mining Institute's session grouped on the steps of the Post Office at Morgantown, W. Va.

the competition of hard coal. He said that some such sizing would have to be provided for West Virginia coals if the coal of that state was to be put into successful competition with the product of the anthracite-producing districts. He showed by tables how coal of different sizes in the same mine had different ash and sulphur percentages and exhibited different degrees of beneficiation as a result of cleaning by washing and pneumatic-table preparation.

Josiah Keeley, general manager, Cabin Creek Consolidated Coal & Coke Co., Kayford, W. Va., questioned why it was that the seam sample showed an analysis always better than the purchasers found when the coal was received. Mr. Haas said that the personal equation had something to do with it. The man who sampled the coal in the mine, was always disposed to believe that the miner would reject certain obvious layers of the bone and slate. When the coal was mined, however, much of this impurity was loaded; in fact, it could not be wholly eliminated no matter what care was taken.

J. J. Forbes, of the U. S. Bureau of Mines, declared that in taking a face sample a $\frac{3}{8}$-in. binder would be rejected in the hope that the miner would throw it in the gob. That is not what happens. The miner almost invariably, when he gets it on his shovel, deposits it in the car. In France, a central bureau makes tests of the coal at the tipple, and the coal of the mine is accepted or rejected on the railroad tracks at the mine before the coal has been transported to the market.

Frank Haas then read a paper on the "Flameproof Motor as a Safety Measure." He said the first flameproof motor constructed in this country was manufactured in 1903, but such motors had been used in Europe at an earlier date. He urged on the members that it was impossible to keep a mine which generated gas in quantity entirely free from the hazard of an excess gas percentage. A stopping might be broken down by a fall of rock or a big area in a panel where the pillars were beginning to be drawn might cave a little, causing the gas to collect above the fall and to be precipitated violently into the working area when the first major fall occurred. Therein lay the need for flameproof motors.

R. L. Kingsland, chief of the power and mechanical division, Consolidation Coal Co., said that no more power was being used now per ton of coal mined with storage-battery power than when the current was conducted by wires from the power house to the face. Furthermore the demand was now far better distributed. True, there were power losses of 20 to 25 per cent in the operation of the battery, but there were losses greater still in the feed lines of a wire-equipped mine. It was not uncommon to have 175 volts at the generator and only 100 volts at the undercutter or locomotive. Furthermore, with a storage battery there was a constant voltage. Mr. Haas declared that it was not necessary to have twice as many locomotives with storage-battery operation as with other forms of mechanical haulage. The locomotives and also the cutting machines should have battery capacities to supply them the full day. The company's locomotives haul 1,000 tons in 8-hr., but the batteries are changed after a 4-hr. run.

B. C. Collier read a paper on the advantages of projected concrete, emphasizing the necessity for repairing breaks promptly and of using a sufficient thickness of the concrete to assure permanence. Less than that might do good for a while, but later it would be found that the concrete had cracked and would begin to fall. He gave many instances where the gunite had served to prevent falls, an dto act as a protection in case of mine fires.

Mr. Stockdale, general manager, Bottom Creek Coal & Coke Co., said that a long sidetrack 35 ft. wide at the Bottom Creek mine had been covered with projected concrete eighteen months ago. Though the roof was bad and before being coated looked quite unsafe it has stayed up without a break despite the fact that it was so long that each of the tracks would hold 75 cars.

"Recent Developments in Shooting Coal" was then presented by J. E. Tiffany, explosives engineer of the U. S. Bureau of Mines, Pittsburgh, Pa. He said that improved results had been obtained by using $1\frac{1}{4}$-in. instead of $1\frac{3}{4}$-in. cartridges. However, when attempts are made to use cartridges of smaller diameter, deterioration sets in and there are delays in detonation. The U. S. Bureau of Mines, he said, was not prepared to say anything for or against the use of rock dust as stemming.

J. J. Rutledge, chief engineer, Bureau of Mines, State of Maryland, Baltimore, Md., said that he had obtained better coal by the use of rock-dust stemming. He had hoped to rock dust the face with the stemming but he had not obtained that result.

At the request of the chairman, Mr. Forbes described the work of the safety instruction department of the U. S. Bureau of Mines. Mr. Rutledge then gave a description of new methods of mining in the mines of northern Illinois, in Oklahoma, at Paris, Ark., and in the Helena-Straven mine, of Alabama. Mr. Rutledge expressed himself greatly interested in the uniformity with which the breaks in the roof occurred. They overhung the goaf at an angle of about 60 deg. to the horizontal. T. F. Downing, of the Edward V. D'Invilliers Engineering Co., said that the difficulty with longwall at one place had been that the draw rock, which was 4 ft. thick and overlaid by sandstone, would break back of the coal face, leaving a most treacherous condition to be met when the mining work progressed.

In the election which followed, practically all the last year's officers were re-elected by acclamation. The offi-

**Designed to Hoist 1,500 Tons an Hour**

Today we figure in hourly capacity rather than in daily output and yet our figures are as large or larger than they used to be in earlier days. This Nemacolin headframe handles at present only 4,600 tons daily but 15-ton skips with cylindro-conical drums could easily raise 12,000 tons daily when orders come from headquarters and more men are employed.

cers for the ensuing years are: R. M. Lambie, president; Thomas J. Downing, Jr., Philadelphia, Pa.; George Wolfe, Beckley, W. Va.; C. C. Morfit, Welch, W. Va.; E. S. Wade, Power, W. Va., and R. L. Kingsland, Fairmont, W. Va., vice-presidents; Frank Haas, Fairmont, W. Va.; W. E. Fohl, Pittsburgh, Pa.; R. F. Carson, Huntington, W. Va., and W. E. E. Koepler, Bluefield, W. Va., members of the Executive Board; R. E. Sherwood, Charleston, W. Va., secretary-treasurer.

The resolutions included one urging a continuance without restriction of the safety work of U. S. Bureau of Mines.

### Outlines Progress of Rock Dusting

At the banquet, which was attended by about 200, addresses were made by C. W. Riggs, I. C. White, E. Steidle, R. D. Hall, R. M. Lambie, D. C. Kennedy, C. R. Jones and J. T. Ryan. Mr. Steidle's address was on the "Present Status of Rock Dusting in the United States" and described the rapid progress in rock dusting in the various coal-producing states of the Union saying:

"Those who have followed the rapid progress in the art of rock-dusting will agree that opinion crystallized during 1924 and 1925 in support of this remedy for coal-dust explosions. Up to 1924 only one company in America practiced rock-dusting on a large scale. At present no less than 211 mines are rock-dusted, or approximately 4 per cent of the total number of bituminous coal mines in the United States, or in other words 11 per cent of the total annual production. Of these mines 63 are in Pennsylvania, 20 in West Virginia (about 2 per cent of the total number of mines), 8 in Alabama, 3 in Colorado, 21 in Illinois, 5 in Indiana, 2 in Kentucky, 13 in New Mexico, 3 in Ohio, 2 in Oklahoma, 21 in Utah and 49 in Wyoming.

"A total of about 1,000 miles of entry have been dusted. Pennsylvania leads with about 400 miles, and West Virginia has about 100 miles of dusted entries. In each case there is a sense of security, which not only the operator feels, but the miner also. The majority of the mines rock-dusted in West Virginia are in the Fairmont district. Several mines are rock-dusted in the Logan and Pocahontas fields, whereas none, according to recent reports, have been rock-dusted in the New River field."

R. D. Hall spoke on the importance of sedulously cultivating good public relations. There were, he said, perhaps only about 150,000 persons who had investments in coal, and with their families there were perhaps only 500,000 persons. These were faced by 105,000,000 consumers. It was not well to run the business without meditating on what those 105,000,000 were thinking and without so handling our business affairs that this large mass of people would be in accord with us. This was an important matter, he added, for citizens of a democracy voted as they thought. Not so much by propaganda as by a system of operation calculated to earn public approval could fair legislative action be attained.

From R. M. Lambie came a constructive talk relative to the progress of mine-accident prevention in West Virginia. He said in effect:

A train of 50-ton cars stretching from New York City to Omaha, Neb., represents West Virginia's coal production in October, and a train of 50-ton cars reaching from Charleston to Kenova the state's daily coal output last month. In 1914 the state produced 73,999,999 net tons in the fiscal year compared to 110,000,000 net tons in 1925.

From 1914 to 1919, inclusive, the mine accidents in the state totaled 2,571. The tonnage mined in this span of years was 499,786,380 net tons, an average of 194,394 tons per fatality. From 1920 to 1925, according to the chief, there were 2,349 fatalities or 222 less than the preceding six years, and during that period 570,239,193 tons were produced, making an average production of 242,758 tons per fatality. A train 24 miles long carrying coal was produced for each fatality from 1914 to 1919, inclusive. A train 30 miles in length represented each fatality from 1920 to 1925, inclusive, which represented an increase of six miles in length compared to the previous five-year period.

The ratio of fatal accidents per 1,000 men employed inside of the mines for the period from 1914 to 1919, inclusive, was 5.83. From 1920 to 1925, inclusive, this ratio was reduced to 3.82 per 1,000, or two lives saved on every 1,000 employed.

In tracing the progress of the state's coal mining activities Mr. Lambie said that in 1863, West Virginia produced enough coal to fill a train of cars that would reach 55 miles, but during last year the train that would hold the coal produced would be 15,000 miles long.

In describing the new safety plan adopted in the state, Mr. Lambie said that by an appropriation passed at the last session of the legislature, five safety instructors are to be placed in various sections of the state, whose duty it will be to instruct the coal miners in the five different regions in safety work. Mr. Lambie said that West Virginia was the first state in the Union to inaugurate this first big forward step in safety work and added that the U. S. Bureau of Mines had assigned William Forbes, of Huntington, its division engineer, to assist in the work.

### Visits Nemacolin Operation

The institute on the second day of the meeting, Nov. 25, visited Nemacolin, taking the train to Huron and crossing by the rope ferry. The mine at Nemacolin is operated by the Buckeye Coal Co., a subsidiary of the Youngstown Sheet & Tube Co. It is planned for a tonnage as large as that attained in any mine in the country though just at present the output is only 4,600 tons daily. It can, however, hoist with its cylindro-conical drums, when the workings are brought to their ultimate production, 12,000 tons in an 8-hr. day or even more. The coal is loaded into 15-ton skips by rotary dumps. The man hoist is an electrically operated elevator controlled either from the elevator itself or the main hoist room. A rope haul operated by remote control from the tipple moves the railroad cars past the loading point.

The main shaft bottom is concrete-lined, 25 ft. wide, 17 ft. high and 1,400 ft. long. It contains three tracks for empties, one for loads and one for shunting. The car haul will handle a 100-car trip, the 100 cars passing through the rotary dumps without uncoupling.

The visitors in company with C. M. Lingle, general manager, saw the town, one of the well-appointed houses, the school, the motion-picture house, the tipple, the shaft, the big shaft bottom and the skip-filling arrangements. A bountiful lunch was served by the visitors in the passage which crosses the side track where are the dispatcher's room and the foreman's office and shower.

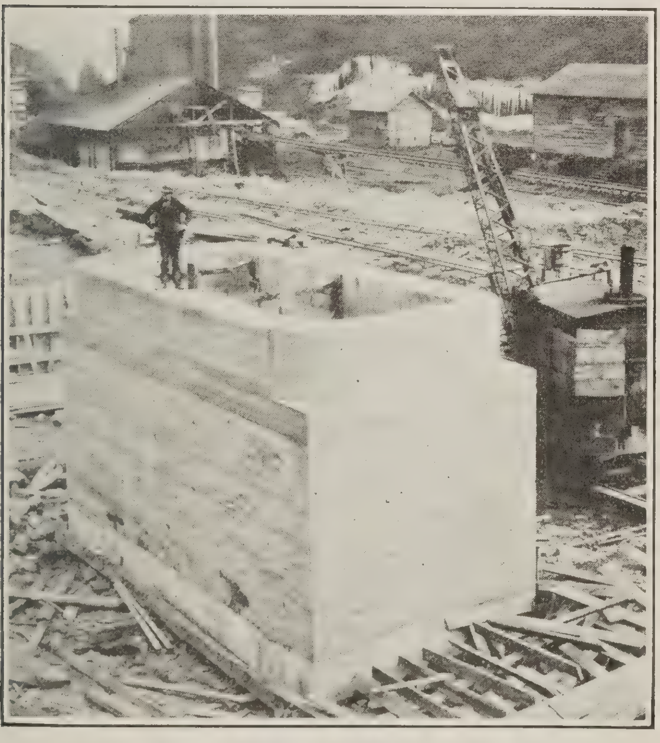
# Why Do So Many Concrete Shaft Linings Fail?

### Experts Before Engineers' Society of Western Pennsylvania Blame It on Water Percolating Through Porous Walls and Then Freezing There

THE DESIGN AND METHODS of constructing concrete linings of coal-mine shafts in this country must be changed—at least under certain conditions. The degree to which those alterations must be made depends upon the quantity of water outside the shaft and the range of temperatures below the freezing point within. This is the conclusion arrived at by the mining section of the Engineers Society of Western Pennsylvania at a bi-monthly meeting, in Pittsburgh, on Nov. 24, at which N. G. Alford, vice-president of Howard N. Eavenson & Associates, mining engineers, read a paper on "Failures of Concrete Shaft Linings at Pennsylvania Bituminous Coal Mines," covering the failure of 30 concrete shafts in a survey of 106 such openings which will appear in a later issue.

This meeting was well attended and the discussion lively, being participated in by men representing the coal, the railroad and the construction industries and also the Portland Cement Association.

In one of the typical shaft lining failures mentioned in Mr. Alford's paper, disintegration of the concrete was complete in a 4-in. curtain wall, leaving nothing but the reinforcing. H. M. Ernst, general superintendent of the Pittsburgh Terminal Coal Corporation, pointed to this fact as proof that hydrostatic pressure probably plays only a minor rôle, if any, in the failure of concrete linings. Mr. Alford thought the failure might have been due to the thinness of the curtain wall. C. H. Dorsey knows of a curtain wall erected in 1917 which has since failed though it was 12 in. thick. He believes this failure was due to the wide variation of temperatures on the two surfaces of the curtain wall which separates a downcast from an upcast. He was backed up in this statement by Mr. Hopkins who pointed to the setting up of severe stresses in the concrete by such variations.



**This Shaft Sunk on Edge of Sunny South**

Shaft sinking at No. 261 or Caretta mine of the Consolidation Coal Co. H. N. Eavenson declares that failures have been few in the southern West Virginia mines because the frost to which they are exposed is less severe than in more northern climes.

F. R. McMillan, of the Portland Cement Association, told the mining men not to be discouraged by the fact that 30 out of 106 shaft linings in Mr. Alford's survey have been reported as distinct failures. That record is little worse than that of other structures exposed to water, as reported by a committee of six which has been engaged during the past fifteen months in studying the causes of disintegration of concrete in various installations. He sees the possibility of some shaft linings being subjected to hydrostatic pressure of several hundred feet head.

He claims that practically 90 per cent of disintegration is due to the effect of frost on moisture in porous concrete, which is caused by improper proportioning of the mix and improper handling. Voids must be filled with an impermeable cement paste, which is possible only when a low water ratio is used and the paste is thoroughly manipulated. Coarse aggregate when used in large quantities, tends to segregate and produce a weak concrete.

Carl Weber, of the Weber Engineering Corporation, New York City, blames most failures upon cost-shaving, which he thinks in responsible for the construction of linings of less thickness and strength than are actually required. He has spent four years in the study of concrete linings in European countries. There, failures are almost unknown and there, also, he has seen one concrete shaft which, though forty years old, shows no signs of weakening. The shafts are of circular section and the linings are built thick. He would like to see this country follow this practice, and he doesn't see why we stick to the rectangular section which is the weakest of all the sections in use. Drawn out by a question by Mr. Hopkins, Mr. Alford stated that seven or eight of the thirty failures in his survey were in elliptical shafts.

Howard N. Eavenson believes that freezing of water within the shaft must cause most of the trouble because few failures of shafts at southern West Virginia mines have been noted whereas Somerset County, Pennsylvania, where the winters are severe, is believed to have had more failures than the western part of Pennsylvania. Protection against water is imperative. He doubts whether concrete, by and large, will last as long as wood in shaft linings judging by present indications. He feels that concrete will not do and looks to brick and wood as alternatives.

Mr. Watson believes in monolithic construction where possible, and in extending the present limits of sections where concrete structures must be built in stages. He has cast a 25-ft. high monolithic pier, embodying 175 cu.yd. of concrete, in 10 hr. He inquired as to the height of sections poured as monoliths in the construction of shaft linings and was told that 5-ft. sections are poured in general practice. He thinks the section should be increased to as much as 25 ft. When told that the forms would not stand the pressure created by sections of that height, he countered with the suggestion that the forms be made strong enough.

W. A. Weldin, consulting engineer, Pittsburgh, Pa., noted that nearly all of the concrete failures reported by Mr. Alford were in downcasts. For every downcast there is likely to be an upcast the lining of which has not been reported as having failed. For this reason freezing must be looked upon as the all-important agent of destruction and hydrostatic pressure and bending movements should be regarded with less seriousness. The fact that the linings of shafts sunk in the earlier days, when the use of water rings and bleeder pipes was universal practice, have failed to a lesser extent than those of a later period is proof that shaft linings must be completely drained. Road paving in former years met with the same relative failure until rich mixtures were employed.

### Reline Timber Shaft with Concrete

The H. C. Frick Coke Co. was represented by A. E. Duckwall. His company has thirty-seven concrete-lined shafts of which nineteen are downcasts and eighteen upcasts. The latter are more or less wet but none has failed. Of the nineteen downcasts, however, eight have failed. Six of these were constructed before 1921 and two after. He believes in relining timbered shafts with concrete though the cost of the latter is about 15 per cent more. Timber lasts about ten years in the coke region; one concrete shaft has been in since 1908. His company uses "fluxite," a compound which makes the mixture more plastic with the use of less water.

C. H. Dorsey, of the R. G. Johnson Co., shaft and slope contractors, would substitute brick for concrete in the lining of shafts at a 50 to 75 per cent greater cost. Water would tend to seep through the joints between the bricks, to be sure, but proper drainage would minimize the water trouble and the bricks (vitrified) would not spawl. Carl Weber does not favor the use of brick, partly because of the difficulty of getting a good setting but chiefly because frost might penetrate to a depth equivalent to the width of the face bricks.

F. A. McDonald, general superintendent of the National Mining Co., used brick in the relining of one of his failed shafts because only by this means could the job be completed with continued operation of the mine. In putting in the brick lining particular attention was paid to drainage although no great quantity of water was encountered. A comparatively small flow of water, however, is ultimately as serious as a large influx. He has made use of boreholes, located 4 or 5 ft. from the lining with rather satisfactory results, as a means of back-draining. He leans toward the use of concrete in preference to brick.

The Hillman Coal & Coke Co. has four concrete-lined shafts, sunk by contract, in which no failures have been noted. M. E. Haworth, chief engineer of this company, stated that a possibility exists that stresses may be developed in a shaft lining greater than those which concrete will stand.

Mr. Hopkins called attention to the possibility—which may be unlikely but which will bear investigation—of concrete in shaft linings failing by crushing due to the absence of expansion joints.

Some pointed remarks were made regarding the mixtures of concrete used in the linings which were reported in Mr. Alford's survey as having failed. These mixes varied from 1-3-5 to 1-2-4. A. C. Irwin, of the Portland Cement Association, claims that a 1-2-5 mix is not concrete. He cautioned against the use of a high water ratio and decided that the proportioning and handling of concrete in the lining of shafts must be changed since past practices have not produced an impervious concrete. E. T. Gott, Dravo Contracting Co., said that a 1-2-3 mix is coming in place of the 1-2-5 mix.

Mr. Gott mentioned the use of back-lining to stop the inflow of water into a shaft. His company sunk a shaft to a salt deposit near Detroit. The strata made several thousand gallons of water an hour during the sinking operations. By using a steel-plate jacket on the outside of the lining it was possible to cut down this inflow through the lining to 7 gal. per hour.

Mr. Weber says it is "all right to recommend" rich mixtures but the plan is of no avail without rigid inspection. This is difficult to obtain. Integral waterproofing compounds should be used. Percolation, in any case ,is hard to stop.

Someone asked whether any way has been devised to mend a spawled lining without pouring a new face—an expensive procedure that often gets doubtful results. Mr. Weber answered that the cement projecting machine offers the only known solution of this problem.

Mr. McDonald wondered whether slope linings are subjected to the same action as shaft linings. Mr. Alford remarked that two concrete slopes included in his survey are giving satisfactory results. Mr. Weber suggested the use of clay for grouting in some cases. He told of having applied two years ago a mantle of clay over a concrete slope lining at the Langeloth mine of the Langeloth Coal Co., Burgettstown, Pa., which thus far has sealed off water from the concrete. Apparently slopes can be drained easily.

### Use Grouting to Aid Sinking

In his paper Mr. Alford stated that his survey includes no reports of successful grouting operations. Grouting in one or two cases under Mr. Eavenson's observation has done no more than to chase water from one point of contact with the shaft lining to another. Grout injected through the lining of one shaft near Welch, W. Va., traveled 3,000 ft. and plugged water wells. At another shaft 1,600 sacks of cement were used in a grouting operation which did not entirely stop the flow. Several other men presented views which substantiated the conclusions that grouting should be used only as an aid to sinking.

Mr. Weber parried the condemnation of grouting which had been made by other speakers. Watery grout is not grout. It should be a plastic material applied under heavy pressure. He knows of one European circular concrete shaft 2,700 ft. deep which has been so successfully grouted as to stop all flow from strata bearing much water. The long Swiss tunnels have been made waterproof by grouting.

Mr. Weber drills grout holes at such an angle as to pierce a water-bearing stratum at a point some distance outside of the periphery of the shaft. He extends the grout as much as 40 ft. radially outside of the shaft and uses pressures up to 400 lb. In grouting lined shafts he works from the bottom up. "Grouting should not be a gamble" is his conviction.

# Coal Mining Institute of America Plans Important Meeting

UNDERGROUND COAL LOADING, mine timbering and new systems of coal mining are the principal subjects in the program arranged for the thirty-ninth annual meeting of the Coal Mining Institute of America at Pittsburgh, Pa., Dec. 9, 10 and 11. This meeting of mining engineers and others directly interested in the technical problems of coal production is expected to attract its usual large attendance of men from all over western and central Pennsylvania, parts of West Virginia and nearby coal regions. A great many questions that vex those engaged in actual operation of mines will be given full treatment at question box sessions. This program is topped off by a banquet at which Scott Turner, the new director of the Bureau of Mines, will speak.

The program in detail for the two-day meeting and the trip to the experimental mine follows:

## WEDNESDAY, DEC. 9

### Morning Session, 9 a.m.

Reports of the executive board.
Secretary-treasurer's annual report.
(Including list of deceased members for 1925)
Election of new members.
Election of six new tellers (for 1926).
Report by president on mail ballot.
Election for new officers for 1926.
Address by President Nicholas Evans.
Appointment of resolutions committee and auditing committee by the president.

### GENERAL DISCUSSION ON COAL LOADING MACHINERY

*Paper No. 1:* "Coal Loading Machinery, Its Actual Accomplishments to Date," by Walter M. Dake, Franklin, Pa., consulting engineer of the Joy Machine Co. (Accompanied by lantern slides.)

*Paper No. 2:* Same subject as above by Charles C. Whaley, Myers-Whaley Co., Knoxville, Tenn.

### Afternoon session, 1:30 p.m.

Motion Picture: "The Making of Wire Rope," showing the complete process, by John A. Roebling's Sons Co., Newark, N. J. (Through the courtesy of Frick & Lindsay Co.)

### QUESTION BOX

Leader—Richard Maize, Uniontown, Pa.

*Question No. 1:* "What new work has been done in recent years to prevent or reduce mine accidents?" From Pittsburgh, Pa.

*Question No. 2:* "Do prize competitions in first aid work, as now conducted, defeat the purpose intended, by laying too much stress on the development of crack teams, rather than general training for the mass of employees?" From Grindstone, Pa.

*Question No. 3:* "With coal lands at the maximum price per acre (in the coke region) is it economical to leave a water barrier of 100 ft. of coal adjacent to a worked-out mine which lies at a higher elevation?" From Pittsburgh, Pa.

*Papers No. 3 and 4:* "Coal Loading Machinery, Its Actual Accomplishments to Date," by E. H. Johnson, Columbus, Ohio, consulting engineer for the Coloder Co., and John M. Christline, Ford City, Pa., consulting engineer for the McKinlay Mining & Loading Machine Co. of Point Pleasant, W. Va.

### ANNUAL BANQUET
at 6.30 p.m.

At McCreery's store (ninth floor), Corner Sixth Ave. and Wood St. Toastmaster—President Nicholas Evans.

The speakers will be Jesse K. Johnston, Bolivar, Pa.; Director Scott Turner, U. S. Bureau of Mines, Washington, D. C.; Col. C. H. Birdseye, U S. Geological Survey, Washington, D. C.

## THURSDAY, DEC. 10

### Morning Session, 9 a.m.

### General Discussion on New Systems and Phases of Coal Mining Practice

*Paper No. 5:* "Recovery of the Big Vein Pillars in the Georges Creek Region," by Dr. J. J. Rutledge, chief mining engineer, Maryland Bureau of Mines, Baltimore, Md.

*Paper No. 6:* "Modern Practice in Underground Substations," by C. H. Matthews, mining engineer of the Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa.

### QUESTION BOX

Leader, Wm. L. Affelder, Pittsburgh, Pa.

*Question No. 4:* "Is the arcing of electricity between steel rails and steel ties likely to cause a mine fire?" From Pittsburgh, Pa.

*Question No. 5:* "What items should be entered on a coal company's cost sheet? What constitutes what is known as strictly operating cost?" From Huntington, W. Va.

*Question No. 6:* "Discuss ventilation in single entry work. What is the best method especially where new methods of mining are being tried out?" From Baltimore, Md.

### AFTERNOON SESSION, 1 p.m.

### General Discussion on Mine Timbers

*Paper No. 7:* "Our Mine Timber Supply in Pennsylvania, Also in Other Coal Producing States," by Prof. H. S. Newins, department of wood utilization, State College, Pa.

*Paper No. 8:* "What Some Coal Companies Are Doing to Replenish the Mine Timber Supply," by Newell G. Alford, consulting engineer, Pittsburgh, Pa.

### QUESTION BOX

Leader, Thomas G. Fear, Indianola, Pa.

*Question No. 7:* "What is the best practice for the blasting of coal for mechanical loaders? Do they have any decided effect on lump coal?" From Uniontown, Pa.

*Question No. 8:* "Is scientific management applicable to the coal mining industry and is there anything the coal mining industry should learn from manufacturers?" From Thomas, W. Va.

*Question No. 9:* "Is it safe practice to use open lights in so-called non-gaseous coal mines?" From Pittsburgh, Pa.

Treatise by J. E. Tiffany, U. S. Bureau of Mines.

## FRIDAY, DEC. 11

Inspection trip to United States Bureau of Mines Experimental Mine, Bruceton, Pa., in charge of Managing Directors J. W. Paul and A. C. Fieldner.

The program for the visit at Bruceton will include the following:

*Experimental mine*

1. Inflammation of coal dust by open flame and by electric arc.
2. Explosion of coal dust ignited by natural gas, and stopped by rock dust.
3. Demonstration of rock dust barriers.
4. Demonstration of coal dust explosion in small portable field gallery.
5. Gas ignition in 12-in. steel tube showing slow propagation when lighted at open end.

*Explosives section*

1. Permissible explosive shot in large gallery in presence of coal dust.
2. Black powder shot in gallery with coal dust.
3. Ignition of keg of powder by electric current.

*Safety service*

1. Rescue crew with three types of breathing apparatus enter mine after explosion, followed by men with all-service gas mask and safety lamps.
2. Rescue crew obtains sample of air for analysis by gas chemist.
3. Gas mask man carries CO detector and tests air and reports. Give explanation of the CO detector.
4. Show workings of Burrell gas detector and test sample.

*Exhibits*

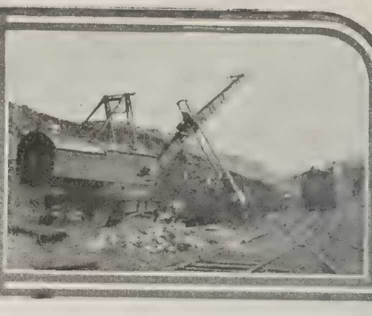
Breathing apparatus, CO detector, Burrell gas tester, Orsat apparatus.

*Flame Lamps*—Wolf and Koehler.

*Electric Lamps*—Edison, Wheat, Concordia, Eveready Flash lamp.

*Shot-firing Equipment*—Davis, duPont, MSA, Eveready.

# News Of the Industry



## Operators Reject Pinchot Plan To Terminate Anthracite Strike; Lewis Is Willing to Negotiate

Insisting that the bases suggested offered no ground for a permanent settlement, the anthracite operators, at a meeting in Philadelphia on Monday of this week, flatly rejected a program for a renewal of negotiations to end the hard-coal suspension proposed by Governor Pinchot of Pennsylvania last Saturday. The United Mine Workers had already rejected one plank in the Governor's platform which called for an immediate resumption of mining, but had agreed to again meet with the operators and discuss the formulation of a new wage contract along the lines laid down by Mr. Pinchot.

The operators in their rejection denounced the Pinchot program as a policy of expediency to which they could not subscribe. They also outlined the terms upon which they were ready to resume negotiations. These terms, submitted to the miners a fortnight ago through an intermediary, rumored to have been W. A. Glasgow, counsel for the United Mine Workers, called for an immediate resumption of mining, the submission of any points upon which agreement could not be reached within 30 days after negotiations had been started to an arbitration board, and a five-year contract, subject to annual revision — if necessary — through direct negotiation and arbitration.

The Pinchot proposals came as the climax of a week of secret conferences and rumors. The operators started with a meeting at Philadelphia on Nov. 23, but no change from the position outlined in the preceding issue of *Coal Age* was announced. The following day a fillip of mystery was added to the proceedings when Mr. Lewis and Alvan Markle, chairman of the joint scale conference at Atlantic City last summer, conferred for several hours at the Union League Club in Philadelphia. Neither would discuss the subject of the conference, although Mr. Markle denied that it had any significance in so far as the present suspension was concerned. Late that same evening, however, Mr. Lewis wired District Presidents Golden, Cappellini and Mattey to meet with him and Vice-President Murray and Secretary Kennedy in Philadelphia the following day.

On Wednesday the Governor, who had twice summoned Mr. Lewis and Major Inglis to private conferences, again called in the leaders of the two sides. Once more the veil of silence descended, but it was rent two days later when publicity was given to the fact that the Governor had asked the scale committees to meet with him at Harrisburg on Saturday afternoon. This invitation the operators declined on the ground that it was impossible to assemble their committee on such short notice. Their position was made known in a telegram from Major Inglis to Governor Pinchot, reading as follows:

> In reply to your telegram, received late yesterday [Nov. 27], as I intimated to you over the telephone, I find it impossible to get the committee together for a conference at Harrisburg today. If you so desire, I will endeavor to arrange a meeting between you and our committee after Monday next to consider any proposition you may have to make. In my opinion, such a meeting is essential in order that we may know what you have in mind before entering into any joint conference with you and the miners' representatives. I think it advisable that any plan you have in mind be held confidential until both sides have had an opportunity separately to consider it.

### Must Make Concessions

"Neither miners nor operators," said the Governor, "can expect, nor ought to expect, to see this strike settled on their own terms. Both must make concessions. If either side attempts to hold out against a reasonable settlement for mere pride of opinion, anxiety to save its face, or the determination to insist on some point too small to be weighed against the enormous losses of the public, it will justly be held responsible for those losses, and its condemnation will be as great as its offense.

The Governor declared that he was ready to propose a specific plan which he believed offered a basis for settlement with justice to all parties. The provisions of this plan follow:

> (1) The prices of anthracite coal shall not, by reason of the present suspension, or of this agreement or any part of it, be increased by the operators beyond those scheduled for the year 1925.
>
> (2) This agreement shall be for not less than five years.
>
> (3) A board of investigation and award shall be established under this agreement, and shall continue during the life thereof. It shall consist of two men chosen by the miners, two men chosen by the operators, and three others selected by the four thus chosen. All necessary expenses of the board shall be borne equally by the miners and operators.
>
> (4) The Board of Investigation and Award shall investigate and determine whether or not, all factors of cost being duly considered, the operators can reasonably pay an increase of wages without increasing the price of coal. If the board shall find an increase of wages without any increase of price is justified, such increase shall be paid in such amounts and to such classes of employees as the board in its award shall determine. If it shall not so find, no increase of wages shall be awarded.
>
> (5) The Board of Investigation and Award shall meet and organize within thirty days and make and publish its award within six calendar months after it shall organize for business. Any increase of wages so awarded shall be in effect and date back to the day when the present suspension ends.
>
> (6) The original records of both miners and operators shall be open to the Board of Investigation and Award for the purpose of enabling it to reach its decision, but the records shall not be made public in such manner as to enable the facts concerning any individual company or any local union to be separately known.
>
> (7) When its award as to wages has been made, the Board of Investigation and Award shall forthwith proceed to investigate, determine and publicly recommend the most practicable and available method for avoiding suspensions of work in the anthracite mines and for assuring to the public an uninterrupted supply of anthracite coal. It shall also investigate, ascertain and recommend methods for increasing the efficiency and reducing the cost of operation of the mines.
>
> (8) Full recognition of the union (the check-off) shall not be granted by the operators, but any operator shall honor the voluntary individual written request of any miner to assign the amount of his present union dues, not exceeding $14 per year, and including neither fines nor assessments, as

### *Commerce Commission Takes New Action on Coke Rates*

The Interstate Commerce Commission, which several days ago canceled its permit to Southern lines to file tariffs establishing new rates on byproduct coke from Alabama to southern Michigan, has again reversed itself. A permit was issued Nov. 25 allowing the publication of such rates on five days' notice. The new permit, however, requires that the rates published under it shall expire Feb. 28 and makes the rate bases 75c. and $1 per ton over Chattanooga, instead of 50 and 75c., as originally proposed.

Proponents of the new schedules declared they were actuated by a desire to relieve fuel shortages arising out of the anthracite strike. Opponents retorted that the Birmingham people wanted to get rid of an accumulation of coke thrown back upon them as the result of the loss of steel business.

The Commission also has refused to suspend tariffs reducing rates from Clairton and other western Pennsylvania byproduct ovens to stations in Pennsylvania, Ohio, Indiana, Michigan, New York and Ontario. Beehive interests had protested the publication of these rates.

assignment for house rent, coal, powder and other mining supplies, and delinquent taxes, as now practiced. (Such dues are already so assigned in certain anthracite mines.)

(9) The adjustment of working conditions, as specified in the demands of the miners, and any other matters not here specifically mentioned, shall be referred back to the representatives of the miners and operators for settlement.

(10) The Board of Conciliation, established under the Roosevelt settlement of 1903, shall proceed at once to equalize wages as agreed upon in the strike settlement of 1923. Wages shall not be reduced during the life of this agreement below those provided in the last agreement unless as the result of such equalization.

(11) The present suspension shall end and the mining of anthracite coal shall be resumed at once.

The miners, after a meeting Sunday, outlined their position in the following letter from Mr. Lewis to the Governor:

Conscious of the imperative public need which prompted your proposals to the anthracite operators and miners for adjustment of the present controversy, the mine workers' representatives have given to the subject the most profound consideration. It is obvious that the interests of peace in the anthracite industry require consideration by both sides in a spirit of compromise and mutual concession. The mine workers regard your proposals for a settlement as being representative of the public viewpoint, and have every sincere desire now, as before, to terminate a distressing situation which menaces public health and well being.

I am, therefore, authorized by the Tri-District Scale Committee of Districts 1, 7 and 9, United Mine Workers of America, to advise you that on behalf of our membership we accept the proposals made by you as a basis of settlement. We stand ready at any time to meet in joint conference with the representatives of the anthracite operators to negotiate an agreement which shall encompass the points set forth by you.

We further advise that promptly following such agreement upon the part of the anthracite operators we will arrange for a resumption of mining at the anthracite collieries at the earliest possible date.

### Pinchot Praises Miners

Commenting on this letter, Governor Pinchot, who was in Pittsburgh at the time the miners' reply was handed to his secretary, praised the labor leaders warmly and declared that "the willingness of the miners to go without an increase of pay unless it can be granted without raising the price of coal to the anthracite using people of America sets a new high mark in wage disputes in the United States."

Formal notice of the rejection of his proposals was conveyed to the Governor in a letter signed by Major Inglis as chairman of the operators' negotiating committee. This letter read as follows:

Acknowledging your letter of Nov. 28, enclosing copy of the proposition which you laid before the meeting last Saturday afternoon and which you refer to the anthracite operators' committee for consideration:

As a first step, we have asked ourselves: Are the proposals you have submitted practicable? Will they end the present industrial strife in a way that will enable us for a long period of time to operate our mines, give employment to labor, hold prices at a reasonable level and give assurance of reasonable return on the investment? These questions are vital to the life of the industry, and the answer to them necessarily determines our answer to you.

You propose that prices shall not be increased and wages shall not be decreased for a period of five years, regardless of changed conditions. You suggest a board of investigation and award which, however, has power to do but one thing—increase wages. This is not arbitration and cannot be accepted as a substitute for real arbitration, in which proved facts would control.

You ask us to repeat the Jacksonville mistake of endeavoring to maintain high prices to pay high wages through the simple formula of writing these terms into a contract. An arrangement involving agreement on prices is clearly illegal. Furthermore, no producer of any commodity could in good faith bind himself to such a proposal. Prices are controlled by the law of supply and demand and cannot be maintained at artificial levels by arbitrary agreement.

You further propose that the board is to pass on the profits of the industry, and that irrespective of whether wages are just and fair, if profits permit, wages shall be increased. Without comment on the unsound theory that profits should fix wages (a theory that would operate against the employee as often as against the employer), it seems to us that it would have been more logical to suggest that if profits are excessive and labor well paid, prices should be reduced.

The check-off, condemned in principle by the Roosevelt commission in 1903 and refused by the Wilson commission in 1920, you now suggest that we accept by another name. By any name it is repugnant to reason and justice and a barrier rather than an aid to sound industrial relations. In theory only would assignments be "voluntary." In practice the system would result in coercion and intimidation. The check-off would not eliminate strikes, for the real effect would be to substitute the strike to force voluntary assignments for the "button strike" heretofore employed to force union membership. The confirmation of this lies in the finding of a federal court within the past few weeks that "the check-off system and its provisions are to prevent all non-union men from working in union mines and compel all workmen to become members of said organization, so that said organization shall have an absolute monopoly of all labor engaged in such industry."

Only on the ground of misunderstanding our seriousness of purpose and our desire to reach conclusions of lasting benefit can we account for proposals that so completely fail to meet the necessities of the situation. We note that your plan is satisfactory to Mr. Lewis and his associates. This is not surprising. Naturally, he agrees to the check-off and to continuation of high wages which can be further increased but not decreased by "arbifration."

Your telegram emphasizes the fact that you found it necessary to go ahead with a public meeting because of the extent to which the matters in controversy were charged with public interest. It is for that very reason, and because of the unwarranted increase imposed on the industry through your mediation two years ago, that the operators are now proceeding with the caution that the seriouness of the situation demands. We are not unmindful of the public interest, for that interest and the future welfare of the industry are so closely allied that disassociation is impossible. In striving for a settlement that shall provide for extended peace and for effective machinery to adjust wages, should economic conditions require, we are fighting for the rights of the public as well as those of the industry.

Two weeks ago, through an intermediary who came to us, we offered Mr. Lewis the following proposal:

(1) An immediate return to work at wages paid prior to the suspension.

(2) A resumption of negotiations to consider any modifications of the expired contract that might be urged by either party.

(3) A new contract for not less than five years to be formulated and signed. Any matters in dispute and not disposed of within thirty days after the resumption of negotiations to be referred to a board for settlement.

(4) The board to be composed of two operators, two mine workers and three persons, in every sense impartial, to be appointed by the Chief Justice of the U. S. Supreme Court, the Chief Justice of the Pennsylvania Supreme Court, and the presiding Judge of the U. S. Circuit Court of Appeals for the Third Circuit.

(5) Either party to have the right, once in twelve months—but not oftener—to ask for a conference to reconsider any of the terms of the contract. Matters still in controversy thirty days after the convening of any conference, to be referred to the board for settlement.

Here was a proposition for immediate resumption of work, under the terms of the expired contract, while the parties made one more attempt to reconcile their differences, and with provision for settling any disputes that could not be settled by negotiations. It made no restrictions, but left open to determination, based on the facts, all matters in controversy. Mr. Lewis summarily rejected it.

It is only on some basis that recognizes facts as the controlling influence that this controversy can be satisfactorily settled. The substitution of expediency is a policy to which we cannot subscribe. It is impossible for us to find in your proposals the basis of a sound and lasting settlement, and for the same reason they cannot be considered as a basis for conference and negotiation.

## *Broadens Scope of Emergency Rates To Eastern States*

About the time the anthracite operators were making known their rejection of Governor Pinchot's plan to end the strike the Interstate Commerce Commission at Washington announced further supplemental orders extending the scope of its decision opening up the New England and Middle Atlantic states to all-rail movement of coal from the Southern fields. The new rates, which are to become effective not later than Dec. 31, 1925, and expire April 30, 1926, are limited to prepared sizes (lump, egg and nut) and apply as follows:

(1) From all mines in the New River, Tug River, Pocahontas and Clinch Valley District No. 1 fields to all points in New Jersey and the New England states, other than destinations covered by original orders, rates $1.10 above the Clearfield basis.

(2) Clinch Valley District No. 2 to Baltimore & Ohio, Pennsylvania and Long Island R.R. stations and to destinations covered under paragraph (1) the same basis as applicable from Pocahontas and Tug River.

(3) From all mines in the Kanawha, Coal River, Logan, Kenova and Thacker districts to all points on B. & O., P. R. R. and Long Island railroads covered by original order of July 22, 1925, and to all points in New Jersey and the New England states, rates not more than 25c. per ton above the New River-Pocahontas basis.

(4) From all mines on the Big Sandy division of the Chesapeake & Ohio Ry. in Kentucky to destinations described in preceding paragraph, rates not more than 40c. above the New River-Pocahontas basis.

(5) Semi-anthracite from McCoy and Merrimac, Va., on Virginian Ry., and Pulaski to Vicker, Va., inclusive, on Norfolk & Western Ry., rates not exceeding rates on Pocahontas coal to destinations embraced in paragraph (2).

The Commission, however, declined to extend the application of these rates to the movement of mine-run all-rail.

## Coal-Mine Accidents Kill 141 in October; Rate Still Declining

Accidents in the coal-mining industry of the United States in October, 1925, caused a loss of 141 lives among the employees, according to information furnished by state mine inspectors to the United States Bureau of Mines. One man was killed by fall of rock in an anthracite mine; all of the other fatalities occurred at mines producing bituminous coal. The October fatality rate for bituminous mines was 2.63 per million tons as compared with 3.03 for September and 2.89 for October last year. The output of bituminous coal in October was 53,203,000 tons.

During the first ten months of the current year, the production of bituminous coal was 419,371,000 tons while the anthracite output was 61,741,000 tons, including about 120,000 tons obtained from dredges. The 10-month fatality rate per million tons for bituminous mines was 3.26 as compared with 4.12 for the same period last year; the anthracite rate was 6.30 for the present year as against 5.46.

Current records covering "major" disasters, that is, disasters in which 5 or more lives were lost, show 10 separate accidents with an aggregate loss of 198 lives in 1925 as compared with last year's 10-month record of 9 separate accidents with a total loss of 452 lives. The per-million-ton death rate for both anthracite and bituminous mines based exclusively on these major disasters was 0.41 this year as compared with 0.96 during the first ten months of 1924.

An examination of the causes of the fatalities reported thus far in 1925 and a comparison of the record with that for January to October, 1924, shows slight reductions in the per-million-ton fatality rates for falls of roof, haulage and electricity and a much more notable decline for explosions of gas or coal dust. The rate for accidents from explosives remained unchanged. The comparative rates were as follows:

| | Jan.-Oct., 1924 | Jan.-Oct., 1925 |
|---|---|---|
| All causes | 4.328 | 3.649 |
| Falls of roof and coal | 1.830 | 1.779 |
| Haulage | .618 | .590 |
| Gas or dust explosions | 1.097 | .557 |
| Explosives | .174 | .170 |
| Electricity | .147 | .137 |

### *Serve Dinner to Twelve In Firebox*

What is said to be the largest powdered coal burner in the world was completed recently at the Post Street heating plant of the Puget Sound Power & Light Co., Seattle. The firebox is 18 ft. long, 12 ft. wide and 16 to 20½ ft. high. Upon completion of the installation, Chas C. Moore & Co., contractors, gave a banquet in the spacious firebox to officials of the power company. Covers were set for twelve persons and there was room for as many more.

## British Producers Study American Methods

In order to study at first-hand American mining methods and equipment, in the hope of being able to adapt some of them to the solution of their own problems, a group of British coal producers are now touring this country. The party includes C. C. Reid, general manager, Fife Coal Co., Scotland; William Telfer, general manager, Coltness Iron Co., Scotland; S. Walton Brown, general manager, Seghill Colliery Co., Northumberland, England; M. J. Foggo, manager, Cannock Chase Colliery Co., Staffordshire; C. Howson, agent, Dorman, Long & Co., Durham; A. Robinson, manager, Simon Carves Co., Manchester; Mr. Grant, of the Evans & Reed Coal Co., Ltd., London; John S. Morris, chairman, D. L. Flack & Son, Ltd., London; Hugh Wood, managing director, Hugh Wood & Co., Ltd., Newcastle-on-Tyne, and C. Rogerson, Blantyre Engineering Co., Blantyre, Scotland.

For the purpose of observing the latest developments in American coal-mining machinery the Britishers will visit the producing fields of Pennsylvania, West Virginia and Ohio. They will be guests of the Bureau of Mines at the Pittsburgh Experiment Station, where a chemist of the British Mines Department is now engaged in research work under a co-operative agreement between the British and American mines departments, and also will inspect the low-temperature carbonization plant of the Ford organization at Detroit.

## Coal-Mine Fatalities During October, 1925, by Causes and States

(Compiled by Bureau of Mines and Published by *Coal Age*)

| State | Underground | | | | | | | | | | | | Shaft | | | | | Surface | | | | | | | Total by States | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Falls of roof (coal, rock, etc.). | Falls of face or pillar coal. | Mine cars and locomotives. | Explosion of gas or coal dust. | Explosives. | Suffocation from mine gases. | Electricity. | Animals. | Mining machines. | Mine fires (burned, suffocated, etc.). | Other causes. | Total. | Falling down shafts or slopes. | Objects falling down shafts or slopes. | Cage, skip or bucket. | Other causes. | Total. | Mine cars and mine locomotives. | Electricity. | Machinery. | Boiler explosions or bursting steam pipes. | Railway cars and locomotives. | Other causes. | Total. | 1925 | 1924 |
| Alabama | 4 | ... | 1 | ... | 1 | ... | 2 | ... | ... | ... | ... | 8 | 1 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 9 | 9 |
| Alaska | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 0 | 0 |
| Arkansas | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 0 | 0 |
| Colorado | 3 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | 3 |
| Illinois | 5 | ... | 2 | 1 | ... | ... | ... | ... | ... | ... | ... | 8 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 8 | 10 |
| Indiana | 7 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | 9 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 9 | 6 |
| Iowa | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 0 | 1 |
| Kansas | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 0 | 1 |
| Kentucky | 4 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | 21 |
| Maryland | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 2 |
| Michigan | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 0 |
| Missouri | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 0 | 1 |
| Montana | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 0 |
| New Mexico | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 0 | 2 |
| North Dakota | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 | 2 | 2 | 1 |
| Ohio | 4 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 5 | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | 1 | 6 | 10 |
| Oklahoma | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 3 |
| Pennsylvania (bituminous) | 13 | 2 | 5 | ... | ... | ... | 2 | ... | ... | ... | 1 | 23 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 23 | 31 |
| South Dakota | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 0 | 0 |
| Tennessee | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 0 |
| Texas | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 0 | 0 |
| Utah | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 2 |
| Virginia | 5 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | 2 |
| Washington | 3 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | 2 |
| West Virginia | 27 | ... | 9 | 2 | 2 | ... | 8 | ... | 1 | 1 | 2 | 52 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | ... | 2 | 54 | 31 |
| Wyoming | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 2 |
| Total (bituminous) | 81 | 4 | 22 | 6 | 3 | ... | 13 | ... | 1 | 1 | 3 | 134 | 1 | ... | ... | ... | 1 | 1 | 1 | 1 | ... | 1 | 1 | 5 | 140 | 140 |
| Pennsylvania (anthracite) | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | [1]1 | 39 |
| Total, October, 1925 | 82 | 4 | 22 | 6 | 3 | ... | 13 | ... | 1 | 1 | 3 | 135 | 1 | ... | ... | ... | 1 | 1 | 1 | 1 | ... | 1 | 1 | 5 | 141 | ... |
| Total, October, 1924 | 84 | 12 | 28 | 8 | 10 | ... | 7 | ... | 6 | ... | 4 | 159 | 2 | ... | 3 | ... | 5 | 4 | 1 | 1 | ... | 3 | 6 | 15 | ... | 179 |

[1] Only one fatality, owing to strike in anthracite mines.

# Lewis Letter Mystifies Washington; Attempt to Force President's Hand Is Likely to Prove a Boomerang

**By Paul Wooton**
Washington Correspondent of *Coal Age*

John L. Lewis' letter to the President caused a decided stir in Washington. No one seems to be able to fathom just what the move means. Mr. Lewis evidently concluded that the time was ripe to play a card, but apparently no one is able to figure out just what trick he expects to take. The letter itself has done nothing to unravel the complicated plot of the coal drama; on the contrary, it has added new suspense to the story.

In this situation full of uncertainties the greatest uncertainty is Mr. Lewis' mind. Seldom has a labor leader kept his own counsel so completely during a strike. To predict the outcome of his threat requires a knowledge of his plans, but no inkling of his strategy has leaked out. If he really means to call a soft-coal strike it is obvious that the best time would be later in the winter when the demand for anthracite will have reached its maximum.

Thus far the real pinch of the anthracite strike has not been felt. The first month of idleness was no more than enough to take up the usual thirty days' slack time in the working year. The second month was no more than enough to liquidate the heavy stocks built up in anticipation of the strike. The third month of idleness was enough to force some use of substitutes, but the real deficit does not begin to accrue until the beginning of the fourth month. December hardly is the time to play the trump card. Just why Mr. Lewis is fingering that card and threatening to play it at this time is not understood. It hardly can be with the thought of forcing the administration to try to pull his chestnuts out of the fire before Congress meets. The actual effect on the administration seems to be just the reverse. The Lewis letter is calculated to make the President more determined than ever not to intervene.

### Lewis May Cut Himself

The thought is advanced that the letter may have been intended to influence the President's reference to coal in his message to Congress. If that was the object it is more likely to sharpen rather than blunt the expected recommendation that added powers be given the executive to handle emergencies in coal—the very thing to which the United Mine Workers object most strenuously.

Most of those who are following developments closely express the opinion that it is idle to speculate on the mental processes of the mine workers' president. It is apparent that he has added one more name to the illustrious list of those he has flouted. It is curious how one after another of public men with whom he has had to deal have had to abandon friendly co-operation for out-and-out opposition. These men found that the United Mine Workers cooperate only when it is to their advantage.

The feeling is that the administration went far enough on behalf of the miners when it counselled the union employers against undertaking another fight with the union at the time the Jacksonville agreement was under discussion.

As this is written no intimation has been given out as to the nature of the reply which the President will make to the Lewis letter. It seems certain, however, that the President will reiterate that the enforcement of labor agreements is not a responsibility that he properly can assume. None will be surprised if he calls attention to the fact that the courts are the public agency to which parties to private contracts may appeal in cases of dispute. He is expected to add that if different relationships between the coal industry and the executive branch of government are desired an act of Congress must be enacted.

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## St. Louis Coal & Iron Co. Is Reorganized

The Midland Coke & Iron Corporation, St. Louis, Mo., a reorganization of the St. Louis Coal & Iron Co., has taken charge of operations, James Duncan having officially relinquished his post as receiver of the old company's affairs.

The new corporation, recently organized under a Delaware charter, has acquired the blast furnaces, coke ovens and byproduct plants at Granite City for $3,000,000. The equipment originally cost the St. Louis Coal & Iron Co., $40,000,000. The property was sold at auction Oct. 20 and was bid in by C. H. Hand, of New York, representing bondholders. To this equipment the corporation is planning to add $3,000,000 in construction of a new blast furnace and power plant.

The officers of the new corporation are W. G. Maguire, of Chicago, president; M. D. Curran, St. Louis, vice-president; A. J. Mann, Chicago, treasurer; P. B. Nelson, Chicago, secretary, and L. A. Whitaker, St. Louis, assistant treasurer. Maguire and Mann held the same positions with the St. Louis Coal & Iron Co.

L. A. Busby, of Chicago, is chairman of the board, the other directors being John Henry Hammond, of Brown Brothers, New York; Alfred J. Kieckhefer, president of the National Enameling & Stamping Co.; C. D. Marshall, president of the Ritter Conley Co.; Breckinbridge Jones, chairman of the board of the Mississippi Valley Trust Co.; Clement Studebaker, president the Illinois Light & Power Co.; F. J. Lewis, James Duncan, George W. Buckingham and W. G. Maguire.

## Output Mounts Steadily At Non-Union Operations In Upper West Virginia

There is a steady increase in the non-union coal loading in northern West Virginia and there is little doubt that the United Mine Workers have lost their fight in that field. The largest daily non-union coal production in the region since the strike began April 1 was reached Nov. 25, when 1,960 carloads was produced. This big total was partly due to heavy output on the Monongah Division, B. & O., which was 1,052 cars, and on the Monongahela Ry., which reached a total of 447 cars.

The union mines loaded 886 cars of coal in the first three days of last week compared to 833 cars in the corresponding period of the preceding week. The union tonnage is confined almost entirely to Scott's Run, where the mines have been loading from 250 to 260 cars a day. At present this is the only remaining union stronghold in the 12½ counties of northern West Virginia. Some of the mines that worked on a union basis in the heart of the Fairmont field, especially on the Monongah Division, B. & O., it is rumored, probably will start to work on a non-union basis at a later date.

While there is no great shortage of labor in the region there is a decided tightening up at some of the plants. In fact some of the mines report that many loaders have left the field.

Officials of the Consolidation Coal Co. report that steady progress is being made at the Monongah, O'Donnell and Wyatt mines, which were reopened recently.

Van Bittner, special representative of the United Mine Workers in northern West Virginia, took another fall out of the non-union operators at a mass meeting attended by 4,000 persons in Carmichael Auditorium, in Clarksburg, early last week.

### "Not Really on Strike"

"The coal miners who were formerly employed by the Consolidation Coal Co., the Hutchinson Coal Co., the Clark Coal & Coke Co., the Bethlehem Mines Corporation and many other companies which abrogated their wage agreement are really not on strike," said Bittner, "but they are locked out, and with their wives and children are forced to undergo all the hardships of an industrial battle.

"If the United Mine Workers did nothing else but improve the conditions of safety in the mines of West Virginia, as they have in the mines of the Central Competitive Field, they have more than justified their existence. In the Central Competitive Field, the average number of men killed for the past 10 years per million tons of coal produced is 2.96, while in West Virginia, which has been principally non-union, the number of men killed per million tons of coal mined has been 4.87. In all the history of West Virginia mining, 1,546 coal miners have been killed by mine explosions in non-union mines (these include Monongah and Barrackville), while 41 men have been killed in mine explosions in union mines."

# Court Annuls I. C. C. Decree Prorating Private Coal Cars When Rolling Stock Is Scarce

The U. S. District Court at Philadelphia held on Nov. 25 that the order of the Interstate Commerce Commission providing for a pro rata distribution of privately owned coal cars among bituminous mines in times of railroad car shortage was "unjust and unreasonable and an unlawfully arbitrary exercise of power." The decision annulling the Commerce Commission order came as the result of suits brought by railroads, steel, iron, coal, coke and public service companies numbering nearly one hundred, asking that the order of the commission be set aside. The suits were heard by Judges Victor B. M. Woolley, of Delaware; J. Whitaker Thompson, of Philadelphia, and W. H. S. Thomson, of Pittsburgh.

The order was issued in September, 1924, and though dates when it was to go into effect were announced from time to time and later deferred it never actually became operative, as it was to apply only when there were shortages of railroad coal cars.

The commission based its order on the legal conclusion that the "assigned car rule," as practiced by the railroads, was an unjust and unreasonable regulation and practice.

### Attempts Regulation of Industry

The complainants contended that the order was beyond the scope of the commission's authority and the result of an erroneous conception of its powers. It was also contended that the order, in substance and intent, was an attempt to regulate the mining industry through distributing coal production ratably among all mines desiring to operate and that it deprived the plaintiffs of the value of their cars and of their right to have them used and operated in time of coal car shortage without compensation.

The opinion of the court, written by Judge Thompson, set forth that the right to the use of private cars was clearly recognized by the law, and that this "valuable legal right in the ownership of private cars, in which sums of money amounting to millions of dollars have been invested, furnishes the only means by which car owners can procure an adequate fuel supply in periods of recurrent car shortage."

### Decide Order is Unjust

"We conclude that the order of the commission is unjust and unreasonable and an unlawfully arbitrary exercise of power," says the decision; "that it undertakes by indirection to regulate the soft-coal industry in matters which do not constitute transportation service relating to commerce and are not within the regulatory power of the commission; that it assumes without authority of law to restrict the lawful right of the railroads to obtain by purchase or ownership of mines the supplies necessary to their operation in the service of the public; that the use of the railway fuel cars and private cars under the assigned car rule is not *per se* preferential; that there are not sufficient facts set out in the commission's report upon which to base findings of such discriminatory and preferential practices as to justify in this case; that it is confiscatory in violation of the Fifth Amendment of the Constitution in depriving the railroads of the use of their mines and the private car owners of the use of their mines and cars; that the order is, therefore, beyond the authority of the commission, without warrant of law, and null and void."

Under the prevailing system, which the court's order sustained, mines which own their coal cars are entitled to receive all of these and, in addition, an equal share of such railroad-owned cars as may be available on the system which serves them. If they are engaged in producing railroad fuel, they also are entitled to receive as many cars as the railroad requires.

The commission's legal representatives are expected to take an appeal from the decision and the question may finally be passed upon by the Supreme Court.

## *Industrial Coal Stocks Sufficient for 39 Days*

Coal stocks in the hands of industrial consumers on Nov. 1 totaled 67,837,000 tons, or sufficient to last thirty-nine days at the October rate of daily consumption, according to an estimate by the National Association of Purchasing Agents. On Oct. 1 the estimated stocks were enough to last fifty days.

Coal consumption in October is estimated at 53,737,000 net tons, industrial activity having reached a new high level in registering an increase of 26 per cent over September. Bituminous-coal output in October was 53,528,000 tons, compared with 46,661,000 tons in September. Only 78,000 tons of anthracite was made available for consumption in October, however, as against 8,845,000 tons in August.

## Navy Coal Bids Sought

Bids for supplying 80,000 gross tons of semi-bituminous coal from mines on the navy acceptable list for delivery at Hampton Roads will be opened Dec. 9 by the Bureau of Supplies and Accounts, Navy Department, Washington, D. C. The coal is for use of naval vessels, delivery to be made between Dec. 9, 1925, and June 30, 1926, in quantities as required. Proposals on less than the entire quantity required will be considered.

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A practical reorganization of the executive departments of the federal government would make possible an annual reduction of $250,000,000 in expenditures, Representative Wood, of Indiana, an influential member of the House of Representatives, believes. He thinks there is small prospect for Congress to agree on legislation specifying the exact form reorganization should take, but he feels there will be no great amount of objection to allowing the President more freedom of action in the grouping of executive agencies so as to obtain maximum efficiency.

# Bituminous Coal Loaded Into Vessels at Lake Erie Ports During Season to End of October

(In Net Tons)

| Ports | Railroads | 1925 Cargo | 1925 Fuel | 1925 Total | 1924 Cargo | 1924 Fuel | 1924 Total | 1923 Cargo | 1923 Fuel | 1923 Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Toledo | Hocking Valley | 7,076,911 | 204,558 | 7,281,469 | 5,678,951 | 166,444 | 5,845,395 | 4,275,580 | 128,024 | 4,403,604 |
| | Big Four | 1,355,493 | 7,809 | 1,363,302 | 48,746 | 95 | 48,841 | ........ | ........ | ........ |
| | N. Y. C.-Ohio Central Lines | 874,044 | 66,904 | 940,948 | 70,043 | 2,795 | 72,838 | 1,123,196 | 34,856 | 1,158,052 |
| | Baltimore & Ohio | 2,825,528 | 84,769 | 2,910,297 | 1,790,827 | 54,773 | 1,845,600 | 2,491,822 | 73,702 | 2,565,524 |
| Sandusky | Pennsylvania | 5,155,413 | 154,313 | 5,309,726 | 3,565,883 | 108,030 | 3,673,913 | 2,733,993 | 87,399 | 2,821,392 |
| Huron | Wheeling & Lake Erie | 610,706 | 31,285 | 641,991 | 690,675 | 32,603 | 723,278 | 1,316,228 | 51,762 | 1,367,990 |
| Lorain | Baltimore & Ohio | *1,212,417 | 134,060 | 1,346,477 | 1,830,823 | 140,255 | 1,971,078 | 3,113,444 | 170,299 | 3,283,743 |
| Cleveland | Pennsylvania | 336,838 | 154,324 | 491,162 | 1,333,028 | 166,168 | 1,499,196 | 1,625,999 | 179,898 | 1,805,897 |
| | Erie | 18,138 | 1,252 | 19,390 | 299,438 | 10,271 | 309,709 | 691,679 | 30,286 | 721,965 |
| Fairport | Baltimore & Ohio | 788,462 | 98,010 | 886,472 | 491,288 | 79,692 | 570,980 | 741,256 | 69,056 | 810,312 |
| Ashtabula | New York Central | 314,233 | 75,965 | 390,198 | 771,011 | 106,611 | 877,622 | 2,964,539 | 233,635 | 3,198,174 |
| | Pennsylvania | 664,144 | 79,630 | 743,774 | 1,023,545 | 71,712 | 1,095,257 | 1,859,006 | 81,373 | 1,940,379 |
| Conneaut | Bessemer & Lake Erie | 1,064,204 | 198,465 | 1,262,669 | 1,430,386 | 188,575 | 1,618,961 | 2,446,562 | 214,030 | 2,660,592 |
| Erie | Pennsylvania | 265,933 | 52,274 | 318,207 | 584,639 | 75,862 | 660,501 | 596,461 | 78,816 | 675,277 |
| Total | | 22,562,464 | 1,343,618 | 23,906,082 | 19,609,283 | 1,203,886 | 20,813,169 | 25,979,765 | 1,433,136 | 27,412,901 |
| Storage Loading | | ‡33,017 | 1,048 | 34,065 | †182,060 | 4,940 | 187,000 | ........ | ........ | ........ |

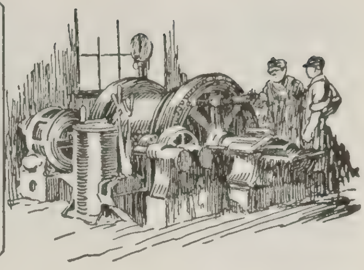
*Includes 42,005 tons cargo, 2,798 tons fuel dumped at Huron account fire at Lorain, June 12, 1925; also includes 3, 631 tons fuel dumped over ore docks at Lorain.

†Coal loaded into vessels in December, 1923, after close of navigation and forwarded from Lake Erie ports during 1924.

‡Coal loaded into vessels in December, 1924, after close of navigation and forwarded from Lake Erie ports during 1925.

Compiled by Ore & Coal Exchange, Cleveland, Ohio; H. M. Griggs, manager.

# Practical Pointers For Electrical And Mechanical Men



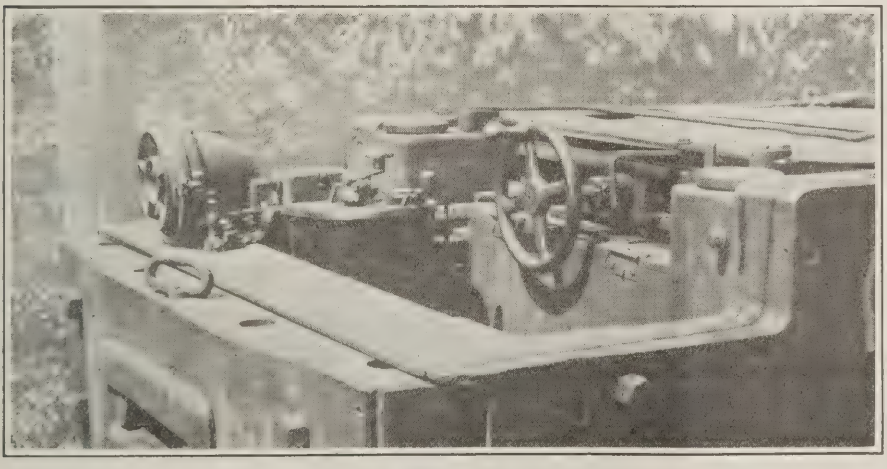
## Old Mine Locomotives Are Fitted With Contactor Control

Lower peak loads and reduced maintenance are the principal advantages afforded by the application of magnetic contactor control to mine locomotives. These advantages apply in the greatest measure to heavy locomotives such as used on the main hauls. Many companies are now removing the old type controllers from the 10- to 20-ton locomotives and installing contactors.

The accompanying illustration shows a 15-ton locomotive at a Kentucky mine on which magnetic contactor control has been installed. On this equipment the reverse cylinder is manually operated and is combined in a common inclosure with the master controller.

On an old locomotive it may be a difficult matter to find suitable space for the contactors. In this instance, the contactors, or magnetic switches, are mounted just below the brake wheel and are protected by a box made of ½-in. fibre. The material was used because, due to lack of clearance, an insulating lining is necessary. The box can be opened for inspection of the contactors by removing the side next to the brake wheel. This section is unfastened by pulling the pins out of the hinges.

The contactors of the control on this locomotive are not governed by the action of current-limiting relays, but directly by the hand-operated master controller. Fuses are eliminated on the locomotive. Protection against high demands and overloads is provided by an overload relay which is reset only by turning the controller handle back to the first point.



**Contactors are Mounted in a Fibre Box Under the Brake Wheel**

The original controller of this 15-ton locomotive has been replaced by a master controller and magnetic switches. The reverse cylinder is hand operated, and is in the same inclosing case as the master cylinder. Line fuses are replaced by an overload relay which is reset only by bringing the operating handle back to first point.

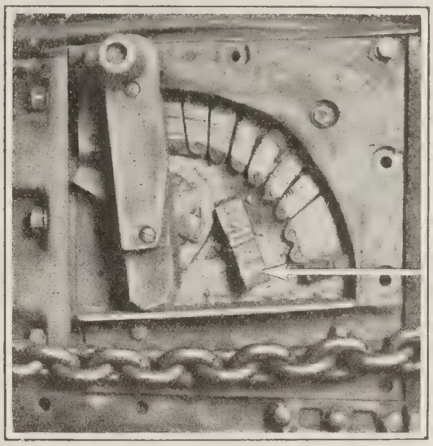
---

## Adding a Finger Relieves Controller Trouble

Burning of the power stud has been a source of trouble with the open-type mining machine controllers used by the Island Creek Coal Co., of Holden, W. Va. L. D. Thompson, chief electrician of direct-current equipment, believes that he has "clamped the lid" on this particular "bug."

He has tried out and is now equipping all such controllers with an auxiliary contact which shunts the current around the power-stud contact when the controller handle is in the running position. A locomotive controller finger is mounted on the face plate near the last or running segment. This finger makes contact with the strap, on the under side of the handle, to which the controller brush is connected. On the back of the face plate a solid connection is made between the power stud and the contact finger.

This arrangement does not entirely relieve the power stud of carrying current. It must still handle the starting current, which, however, due to its short duration does not cause serious heating or burning. The operating current, which caused the trouble, is afforded a parallel path around the power-stud contact.



**Mining Machine Controller Is Greatly Improved**

At the Island Creek mines trouble was caused by the burning of power-stud contacts on controllers. An extra finger, indicated on the illustration by an arrow, was added to the face plate, to provide a parallel path for the running current and all difficulty was removed.

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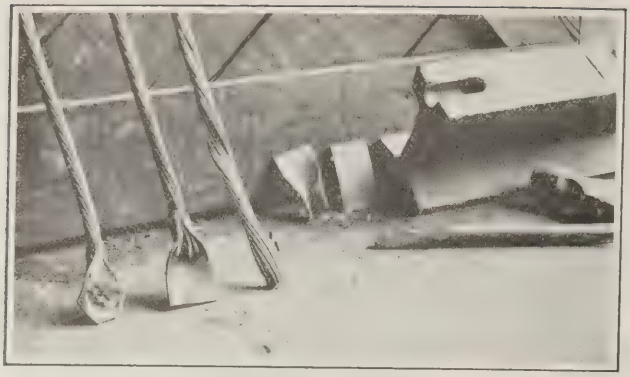
## A Way to Make Bonds At the Mines

During the war we adopted the arc-weld type of rail bond for our mine tracks, but found that we were constantly being delayed in getting the bonds by slow shipment.

After some experimentation we developed our own bond, made from 19-strand 00 copper cable with a steel terminal oxyacetylene welded to the strand. The illustration shows the several steps in the process



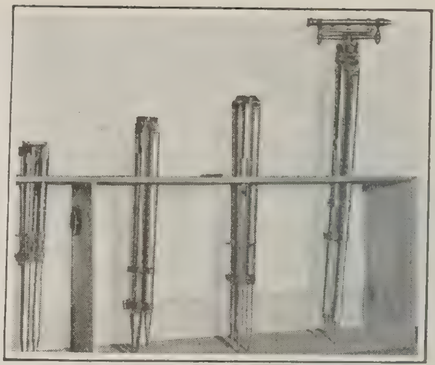
**Home-Made Bonds**

When shipments of material were slow and uncertain this method of making rail bonds was devised. Pieces of iron are bent into shape and then welded to the copper cable by means of an oxyacetylene torch.

of making the bond, together with a somewhat primitive method of forming the terminal. This has since been abandoned for a hand-power press which shapes them more nearly to the finished size.

As we doubted the conductivity of these bonds at first, as compared with the factory product, we made several hundred tests of them with a bond tester. We found that they had the same average conductivity as other bonds. Naturally, a saving in cost has resulted from this work.

R. R. Schellenger,
Electrical Engineer.
Elkhorn Coal Corporation,
Wayland, Ky.



**Rack Safeguards Instruments**

This instrument rack in the engineering department vault of the Fordson Coal Co., at Stone, Ky. is made up of ordinary 1-in. pine lumber 16 in. wide. In the top board, which is 30 in. above the floor, holes are provided for six tripods. These holes are 6 in. in diameter and are spaced on 18-in. centers. C. R. Bourland, chief engineer, believes there is sometimes less risk to an instrument left on its tripod in a suitable rack than to one removed from the tripod at the end of each shift and placed in its case or box, as is the common practice.

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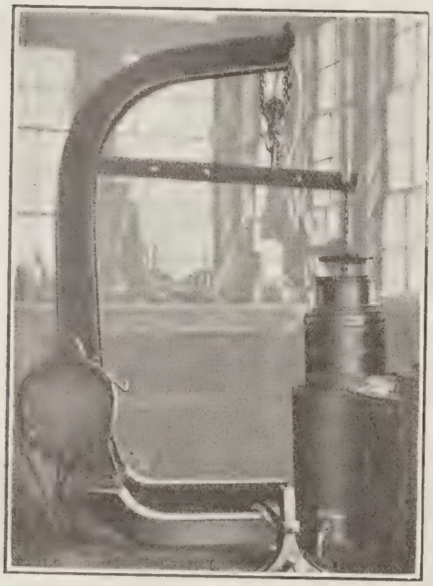
## Special Jobs Are Handled By Boom on Crane

Use of a portable floor crane for certain jobs of shop work is impractical because the bed of the machine extends several inches beyond the center line of the lift. The usefulness of such a crane for certain jobs, can be much increased by adding a boom such as that shown in the accompanying illustration. This photograph was taken in the central repair shop of the Fordson Coal Co. at Stone, Ky.



**Holds Armature Out Over Tank**

For special jobs where it is necessary to reach beyond the bed of a floor crane, a boom can be attached, but too much weight on the end of the boom will tip the crane. Use of such a device therefore, must be accompanied by the exercise of reasonable discretion.

In this case a 2-ton portable floor crane is being used to dip an armature. The boom is a $\frac{3}{4}$x4-in. bar having a 14-in. extension beyond the hook of the crane. This extra distance brings the armature above the center of the tank when the front wheels of the crane bed are against its sides.

Like a floor crane itself, the boom is not a foolproof device. With it, only a certain fraction of the rated capacity of the crane can be lifted. The weight which can be handled without tipping the crane depends on the length of the extension beyond the hook.

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## Grouping of Supply Records Simplifies Work

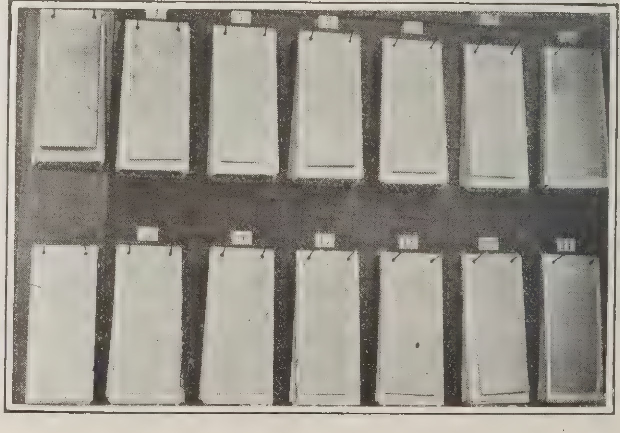
It is only in unusual cases that a chief electrician in charge of maintenance of coal mining equipment has a clerk to take care of his files and records. Therefore, either because of lack of time or lack of experience in clerical work, he does not use "system" to any great extent. There are, however, ways of systematizing the work without involving burdensome clerical work.

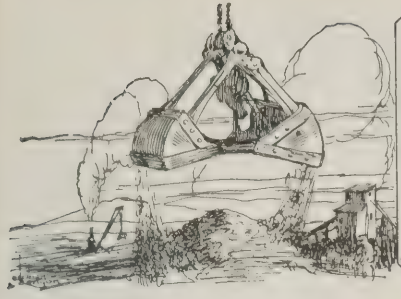
An example is the method which a chief electrician at a coal mining company's operation in West Virginia uses to keep record of repair material taken from the warehouse to the mines. Mounted on the wall near his desk in the electric shop he has a board on which copies of material orders are filed. A pair of finishing nails, a card bearing the mine number, and a heavy piece of cardboard, make up the file for each mine.

When orders are written repair parts for one mine only are listed on a single sheet. The carbon copies are then filed on the board in their proper places. The heavy pieces of cardboard placed on top of each file keep the sheets from blowing off. The orders, being filed consecutively as regards dates, it is quite easy for the chief electrician to "check up" on the quantity and character of material used at a certain mine during any period.

**Easy Filing System**

Carbon copies of all orders for repair-part material are properly grouped here so that it is a simple matter to learn how much and what kind of material each mine is using.





# Production And the Market

## General Softness Descends on Coal Market: Rumors Give Place to Action

Acceptance by John L. Lewis, United Mine Workers president, of Governor Pinchot's proposal to end the hard-coal strike and the operators' flat refusal to consider the Governor's plan were easily the outstanding events of the last week. President Coolidge has not as yet replied to the Lewis letter of Nov. 22 asking federal intervention in the soft-coal situation and reiterating his more or less thinly veiled threat of a general strike, but as Congress will convene next week Mr. Coolidge's message may embody the answer, to say nothing of the probable action of the legislative body itself.

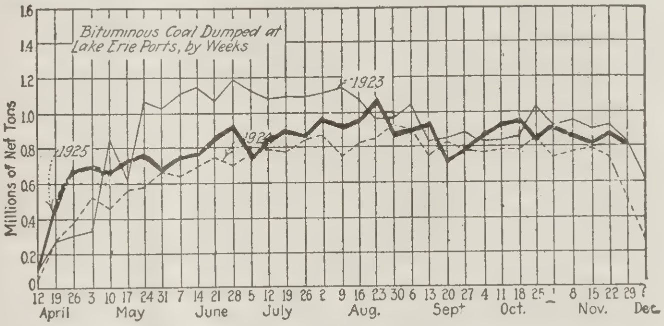
Soft-coal production continues at almost record-breaking levels, and the market is absorbing the tonnage remarkably well, though prices, it is true, show a softening tendency under the influence of unseasonably mild weather and the virtual end of lake shipping, which always is an unsettling influence. Consumers in general are buying only for current needs and as a result some inducement sometimes is necessary to avoid demurrage charges, but even so "no bills" are in evidence.

Scarcely a field or division of the trade escaped the continued reaction, West Virginia smokeless, Kentucky, Indiana, Illinois, southern and eastern Ohio, and central Pennsylvania coals of all sizes and qualities partaking in the decline. Business is fairly steady in the New York and Philadelphia markets, but in New England weak spots have appeared in the steam trade due to an absence of spot industrial demand. Liberal shipments off the Northwestern docks at Duluth and Superior are reported. The activity at Birmingham is keeping producers on the jump to keep up with requirements.

Transportation difficulties have been pretty well cleared up on the Louisville & Nashville R.R. Movement of coal through the Cincinnati gateway last week totaled 14,318 carloads, which was 119 less than the previous week but 419 more than in the corresponding week of last year.

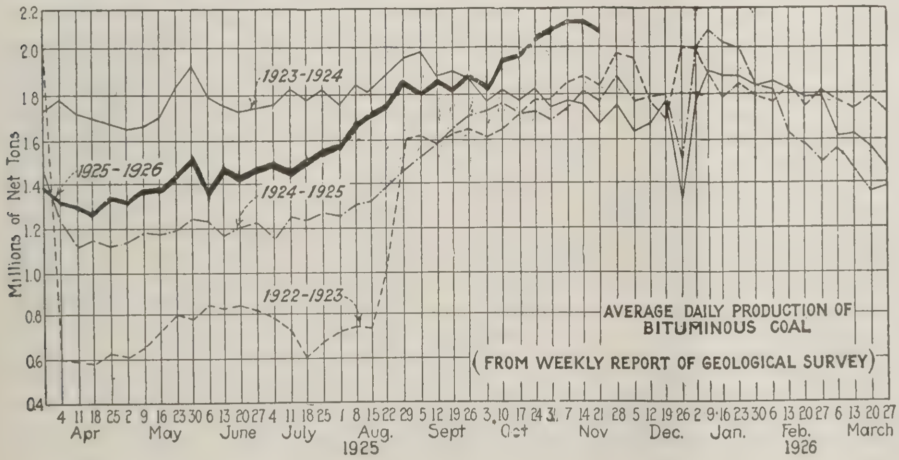
The inactive but expectant attitude of anthracite consumers has served to put a further crimp in the demand for coke, so that prices continued to show a declining tendency and output also has fallen off.

Output of bituminous coal in the week ended Nov. 21 is estimated by the Bureau of Mines at 12,624,000 net tons, compared with 12,167,000 tons in the previous week. Anthracite production in the week ended Nov. 21 was 46,000 tons, against 32,000 tons the week before.



*Coal Age* Index of spot prices of bituminous coal on Nov. 30 stood at 187, the corresponding price being $2.26, compared with 192 and $2.32 on Nov. 23.

Dumpings of coal at Lake Erie ports during the week ended Nov. 29, according to the Ore & Coal Exchange, were: Cargo, 769,446 net tons; steamship fuel, 35,978 tons—a total of 805,424 net tons, compared with 862,130 tons in the preceding week. Hampton Roads dumpings in the week ended Nov. 26 totaled 483,234 net tons, against 332,720 tons in the previous week.



### Estimates of Production

(Net Tons)

| BITUMINOUS | 1924 | 1925 |
|---|---|---|
| Nov. 7 | 9,695,000 | 12,171,000 |
| Nov. 14 | 10,466,000 | 12,167,000 |
| Nov. 21 (*b*) | 10,910,000 | 12,624,000 |
| Daily average | 1,818,000 | 2,104,000 |
| Cal. yr. to date | (*c*) 423,265,000 | 456,339,000 |
| Daily av. to date | 1,544,000 | 1,659,000 |
| ANTHRACITE | | |
| Nov. 7 | 1,592,000 | 28,000 |
| Nov. 14 | 1,674,000 | 32,000 |
| Nov. 21 | 1,827,000 | 46,000 |
| Cal. yr. to date | (*c*) 80,747,000 | 61,847,000 |
| COKE | | |
| Nov. 14 (*a*) | 150,000 | 295,000 |
| Nov. 21 (*b*) | 158,000 | 283,000 |
| Cal. yr. to date | (*c*) 8,531,000 | 9,064,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Buys Only for Current Needs

In the Chicago and Middle Western market the general public continues to buy only for current needs, thus forcing most retailers to pursue the same tactics. This situation also prevails in the steam market, where there is but little activity. Nobody pays much attention to the anthracite shortage, as those who have used up their current supply of hard coal and find they cannot procure any more have turned to coke and smokeless coals with satisfaction.

The domestic market is not so good this week; the weather has been fairly warm and the call for coal has been unusually soft. Franklin County operators, who raised the price of 6-in. lump to $3.50 Nov. 18, have booked but little business on this new basis. It is only fair to say, however, that they gave their trade plenty of advance notice and consequently those retailers who were in the market bought at $3.25 and so are taken care of for the time being.

Prices on smokeless domestic coals have fallen off sharply, as some good prepared smokeless lump has been offered as low as $4.25 in the Chicago market. Egg continues to command a better price than lump, no doubt on account of the demand for egg from the East. West Virginia high-volatile coals also suffered a little decline, principally because the market in the East has not come up to expectations. The result is that plenty of good high volatile from West Virginia can be bought at this writing at $2.75@$3.25 for block and $2.40@$2.75 for egg.

West Kentucky domestic coals are moving in increased volume into Iowa, where the demand seems to have settled down for a cheap coal of reasonably satisfactory quality.

The steam market was just a little better this week, principally on account of the falling off in the demand for domestic sizes. Purchasing agents are buying only for current needs and are not in the least bit disturbed over rumors of strikes and walkouts.

In southern Illinois the demand for domestic is easing up, although lump is moving fairly well; egg and nut are somewhat hard to move, however, and some mines have even a few lump "no bills." Steam at the shaft mines also is slow and these mines are just about getting by with from three to five days a week. Movement of railroad tonnage from these mines in the last week has been fairly good, but there has been a slight car shortage at some points. Strip mines are getting full working time and an apparently ready market, although prices are uncertain. One thing that seems to be hurting shaft-mine steam sizes is the fact that the strip mines can crush better coal and undersell the shaft mines.

In the Duquoin and Jackson County field somewhat similar conditions exist both as to shaft mines and strip mines and working time is about four days a week. There has been no change in prices in southern Illinois with the excep-

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Dec. 1 1924 | Nov. 16 1925 | Nov. 23 1925 | Nov. 30 1925† |
|---|---|---|---|---|---|
| Smokeless lump.......... | Columbus.... | $4.10 | $6.25 | $5.25 | $5.00@$5.50 |
| Smokeless mine run...... | Columbus.... | 2.00 | 3.10 | 3.10 | 3.00@ 3.25 |
| Smokeless screenings..... | Columbus.... | 1.25 | 2.60 | 2.60 | 2.50@ 2.75 |
| Smokeless lump.......... | Chicago..... | 3.85 | 5.75 | 5.10 | *4.75@ 5.25* |
| Smokeless mine run...... | Chicago..... | 1.85 | 2.50 | 2.50 | 2.25@ 2.75 |
| Smokeless lump.......... | Cincinnati... | 4.00 | 5.50 | 5.25 | *4.75@ 5.50* |
| Smokeless mine run...... | Cincinnati... | 1.85 | 2.50 | 2.35 | 2.25@ 2.50 |
| Smokeless screenings..... | Cincinnati... | .95 | 2.00 | 1.85 | **1.85**@ **2.00** |
| *Smokeless mine run..... | Boston...... | 4.25 | 5.00 | 5.35 | *5.25@ 5.40* |
| Clearfield mine run....... | Boston...... | 1.95 | 2.05 | 2.15 | *1.85@ 2.10* |
| Cambria mine run....... | Boston...... | 2.30 | 2.35 | 2.35 | *2.00@ 2.50* |
| Somerset mine run....... | Boston...... | 2.05 | 2.20 | 2.25 | *1.90@ 2.35* |
| Pool 1 (Navy Standard).. | New York... | 2.80 | 2.85 | 2.85 | **2.75**@ **3.15** |
| Pool 1 (Navy Standard).. | Philadelphia.. | 2.70 | 2.95 | 2.95 | 2.80@ 3.10 |
| Pool 1 (Navy Standard).. | Baltimore.... | 2.30 | 2.15 | 2.20 | 2.20@ 2.25 |
| Pool 9 (Super. Low Vol.). | New York... | 2.10 | 2.30 | 2.30 | 2.15@ 2.50 |
| Pool 9 (Super. Low Vol.). | Philadelphia.. | 2.15 | 2.30 | 2.30 | 2.20@ 2.45 |
| Pool 9 (Super. Low Vol.). | Baltimore.... | 1.70 | 1.95 | 2.00 | 2.00@ 2.05 |
| Pool 10 (H.Gr.Low Vol.).. | New York... | 1.80 | 2.00 | 2.00 | 1.85@ 2.20 |
| Pool 10 (H.Gr.Low Vol.).. | Philadelphia.. | 1.75 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pool 10 (H.Gr.Low Vol.).. | Baltimore.... | 1.55 | 1.80 | 1.90 | 1.90@ 1.95 |
| Pool 11 (Low Vol.)....... | New York... | 1.60 | 1.70 | 1.70 | **1.65**@ **1.85** |
| Pool 11 (Low Vol.)....... | Philadelphia.. | 1.45 | 1.90 | 1.90 | 1.85@ 2.00 |
| Pool 11 (Low Vol.)....... | Baltimore.... | 1.45 | 1.55 | 1.65 | 1.60@ 1.70 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.).. | New York... | 1.50 | 1.55 | 1.55 | 1.50@ 1.65 |
| Pool 54-64 (Gas and St.).. | Philadelphia.. | 1.50 | 1.60 | 1.60 | 1.55@ 1.70 |
| Pool 54-64 (Gas and St.).. | Baltimore.... | 1.45 | 1.55 | 1.65 | 1.65@ 1.70 |
| Pittsburgh sc'd gas........ | Pittsburgh... | 2.40 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pittsburgh gas mine run.. | Pittsburgh... | 2.10 | 2.35 | 2.35 | 2.25@ 2.50 |
| Pittsburgh mine run (St.). | Pittsburgh... | 1.85 | 2.15 | 2.15 | 2.10@ 2.25 |
| Pittsburgh slack (Gas).... | Pittsburgh... | 1.20 | 1.45 | 1.45 | 1.40@ 1.50 |
| Kanawha lump.......... | Columbus.... | 2.30 | 3.10 | 3.10 | *2.75@ 3.00* |
| Kanawha mine run....... | Columbus.... | 1.55 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings...... | Columbus.... | .90 | 1.20 | 1.20 | 1.15@ 1.25 |
| W. Va. lump............ | Cincinnati... | 2.85 | 3.50 | 3.25 | *2.75@ 3.50* |
| W. Va. gas mine run..... | Cincinnati... | 1.45 | 1.65 | 1.60 | **1.60**@ **1.75** |
| W. Va. steam mine run... | Cincinnati... | 1.45 | 1.55 | 1.50 | **1.50**@ **1.65** |
| W. Va. screenings........ | Cincinnati... | 1.00 | 1.35 | 1.20 | **1.15**@ **1.35** |
| Hocking lump.......... | Columbus.... | 2.55 | 3.10 | 3.10 | *2.75@ 3.00* |
| Hocking mine run........ | Columbus.... | 1.60 | 1.65 | 1.65 | 1.50@ 1.85 |
| Hocking screenings....... | Columbus.... | .80 | 1.25 | 1.25 | 1.20@ 1.30 |
| Pitts. No. 8 lump........ | Cleveland.... | 2.40 | 2.55 | 2.55 | *2.05@ 3.00* |
| Pitts. No. 8 mine run..... | Cleveland.... | 1.85 | 1.95 | 1.95 | *1.85@ 1.90* |
| Pitts. No. 8 screenings.... | Cleveland.... | 1.20 | 1.40 | 1.55 | *1.40@ 1.50* |

| Midwest | Market Quoted | Dec. 1 1924 | Nov. 16 1925 | Nov. 23 1925 | Nov. 30 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump....... | Chicago..... | $2.85 | $3.50 | $3.75 | *$3.50* |
| Franklin, Ill. mine run.... | Chicago..... | 2.35 | 2.35 | 2.60 | *2.25@ 2.50* |
| Franklin, Ill. screenings.... | Chicago..... | 1.45 | 1.60 | 1.85 | *1.50@ 1.75* |
| Central, Ill. lump........ | Chicago..... | 2.85 | 3.00 | 3.00 | 3.00 |
| Central, Ill. mine run..... | Chicago..... | 2.20 | 2.20 | 2.20 | **2.25**@ **2.40** |
| Central, Ill. screenings..... | Chicago..... | 1.30 | 1.40 | 1.40 | 1.35@ 1.50 |
| Ind. 4th Vein lump...... | Chicago..... | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run... | Chicago..... | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings.. | Chicago..... | 1.55 | 1.80 | 1.80 | *1.50@ 1.75* |
| Ind. 5th Vein lump...... | Chicago..... | 2.75 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 5th Vein mine run... | Chicago..... | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings.. | Chicago..... | 1.20 | 1.40 | 1.40 | 1.35@ 1.50 |
| Mt. Olive lump.......... | St. Louis..... | 3.00 | 2.85 | 2.85 | 2.75@ 3.00 |
| Mt. Olive mine run...... | St. Louis..... | 2.35 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings..... | St. Louis..... | 1.10 | 1.75 | 1.75 | 1.75 |
| Standard lump.......... | St. Louis..... | 2.75 | 2.40 | 2.40 | 2.35@ 2.50 |
| Standard mine run....... | St. Louis..... | 1.95 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings...... | St. Louis..... | 1.05 | .85 | .85 | .75@ 1.00 |
| West Ky. block......... | Louisville.... | 2.85 | 2.10 | 2.10 | 2.00@ 2.25 |
| West Ky. mine run...... | Louisville.... | 1.60 | 1.35 | 1.35 | 1.25@ 1.50 |
| West Ky. screenings...... | Louisville.... | .90 | .80 | .80 | .65@ 1.00 |
| West Ky. block......... | Chicago..... | 2.75 | 2.35 | 2.35 | 2.25@ 2.50 |
| West Ky. mine run...... | Chicago..... | 1.55 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump.......... | Birmingham.. | 3.10 | 2.25 | 2.35 | 2.25@ 2.50 |
| Big Seam mine run....... | Birmingham.. | 1.70 | 1.65 | 1.85 | **2.00** |
| Big Seam (washed)....... | Birmingham.. | 1.85 | 1.85 | 2.10 | 2.00@ 2.25 |
| S. E. Ky. block......... | Chicago..... | 2.75 | 3.75 | 3.75 | *3.25@ 4.00* |
| S. E. Ky. mine run....... | Chicago..... | 1.60 | 2.15 | 2.15 | 2.00@ 2.35 |
| S. E. Ky. block ......... | Louisville.... | 3.00 | 3.60 | 3.60 | *3.00@ 4.00* |
| S. E. Ky. mine run....... | Louisville.... | 1.60 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings...... | Louisville.... | .90 | 1.35 | 1.35 | **1.25**@ **1.60** |
| S. E. Ky. block......... | Cincinnati... | 2.75 | 3.75 | 3.35 | *3.00@ 3.25* |
| S. E. Ky. mine run....... | Cincinnati... | 1.50 | 1.60 | 1.55 | **1.50**@ **1.75** |
| S. E. Ky. screenings....... | Cincinnati... | 1.00 | 1.25 | 1.25 | 1.15@ 1.40 |
| Kansas lump............ | Kansas City.. | 4.75 | 5.00 | 5.00 | 5.00 |
| Kansas mine run......... | Kansas City.. | 3.35 | 3.10 | 3.25 | *3.00@ 3.25* |
| Kansas screenings........ | Kansas City.. | 2.30 | 2.30 | 2.30 | 2.25@ 2.35 |

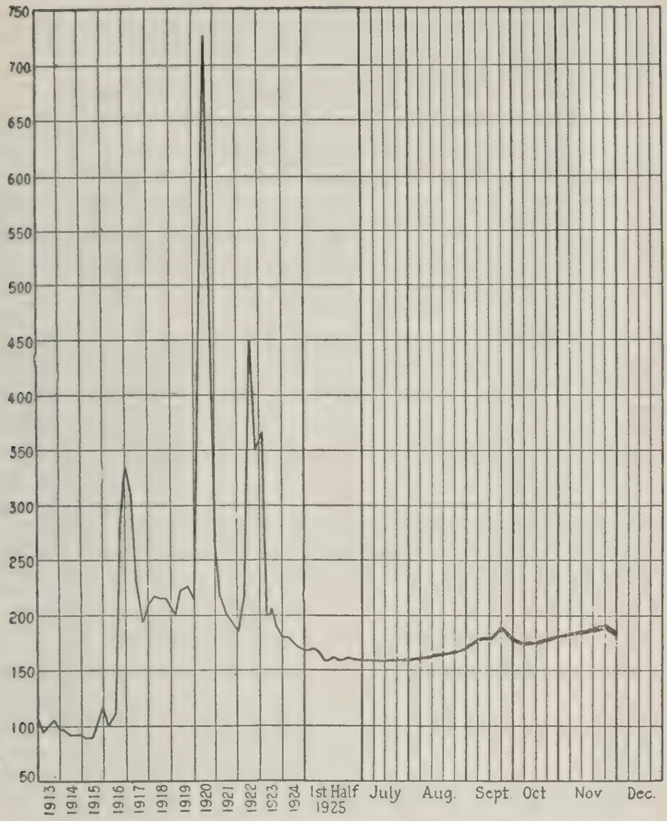
* Gross tons, f.o.b. vessel, Hampton Roads

† Advances over previous week shown in **heavy type**; declines in *italics*

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Dec., 1, 1924 | | Nov. 23, 1925 | | Nov. 30, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken.......... | New York | $2.34 | ............ | $8.00@ $9.25 | ............ | $8.20@ $8.95 | ............ | $8.20@ $8.95 |
| Broken | Philadelphia.. | 2.39 | ............ | 9.15 | ............ | ............ | ............ | ............ |
| Egg........ | New York | 2.34 | $8.50@ $9.00 | 8.75@ 9.25 | ............ | 8.65@ 8.90 | ............ | 8.65@ 8.90 |
| Egg........ | Philadelphia.. | 2.39 | 9.45@ 9.75 | 8.80@ 9.25 | ............ | ............ | ............ | ............ |
| Egg........ | Chicago*...... | 5.06 | 8.17@ 8.25 | 8.14@ 8.20 | $9.50@ 10.00 | 8.03@ 8.25 | $9.50@ 10.00 | 8.03@ 8.25 |
| Stove........ | New York.. | 2.34 | 10.00@ 10.50 | 8.75@ 9.50 | ............ | 9.15@ 9.40 | ............ | 9.15@ 9.40 |
| Stove........ | Philadelphia.. | 2.39 | 10.10@ 10.75 | 9.15@ 9.50 | ............ | ............ | ............ | ............ |
| Stove........ | Chicago*. | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@ 11.00 | 8.48@ 8.80 | 10.00@ 11.00 | 8.48@ 8.80 |
| Chestnut...... | New York | 2.34 | 10.00@ 10.50 | 8.75@ 9.25 | ............ | 8.65@ 8.95 | ............ | 8.65@ 8.95 |
| Chestnut...... | Philadelphia.. | 2.39 | 9.85@ 10.50 | 9.25@ 9.40 | ............ | ............ | ............ | ............ |
| Chestnut...... | Chicago*.. | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@ 11.00 | 8.50@ 8.75 | 10.00@ 11.00 | 8.50@ 8.75 |
| Pea ........... | New York.. | 2.22 | 4.75@ 5.50 | 5.50@ 6.00 | ............ | 5.00@ 6.25 | ............ | 5.00@ 6.25 |
| Pea ........... | Philadelphia.. | 2.14 | 5.75@ 6.00 | 6.00 | ............ | ............ | ............ | ............ |
| Pea ........... | Chicago*....... | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 |
| Buckwheat No. 1 .. | New York | 2.22 | 2.00@ 2.75 | 3.00@ 3.15 | ............ | 2.50@ 2.75 | ............ | 2.50@ 2.75 |
| Buckwheat No 1. ... | Philadelphia.. | 2.14 | 2.50@ 3.00 | 3.00 | ............ | 2.50@ 3.00 | ............ | 2.50@ 3.00 |
| Rice .......... | New York | 2.22 | 1.75@ 2.00 | 2.00@ 2.25 | ............ | 2.25 | ............ | 2.25 |
| Rice.......... | Philadelphia.. | 2.14 | 2.00@ 2.25 | 2.25 | ............ | ............ | ............ | ............ |
| Barley.......... | New York | 2.22 | 1.25@ 1.50 | 1.50 | ............ | 2.25 | ............ | 2.25 |
| Barley......... | Philadelphia.. | 2.14 | 1.50 | 1.50 | ............ | ............ | ............ | ............ |
| Birdseye...... | New York. | 2.22 | 1.40@ 1.60 | 1.60 | ............ | ............ | ............ | ............ |

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Nov. 30 | Nov. 23 | Nov. 16 | Dec. 1 |
| Index | 187 | 192 | 190 | 171 |
| Weighted average price | $2.26 | $2.32 | $2.30 | $2.07 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1914, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

tion that egg went to $3.50 and 2x3-in. nut to $3.25 on the circular of some of the shippers, but someone must not be holding to the circular as much coal can be bought below the circular price. In the Mt. Olive field conditions apparently are good. The movement of domestic shows improvement, steam is doing better and railroad tonnage is moving well. Mines are working pretty nearly full time. In the Standard field it is the same old story of selling it at about cost and the mines are getting three to four days a week—sometimes five where they have contracts. Railroad tonnage is fairly good. All mines have "no bills" every night and only by strenuous work is the coal moved.

Domestic business at St. Louis is fairly good, especially for middle grade and Standard coals, but there is no unusual demand. Illinois high grade, which has been in good demand, is due for a slump, as Kentucky and Indiana coals are now coming in, on account of the price. Generally all over the field in the last week there has been a better movement of western Kentucky coal, which comes into St. Louis at about $2.25 f.o.b. mine with a $1.73 freight rate as against Carterville at $3.50 f.o.b. mine with a $1.38 freight rate, and western Kentucky gives unusual satisfaction. Country domestic is not good inasmuch as it is a weather proposition. Locally anthracite and smokeless are slow. Coke is fairly active. Country steam is fairly good. Local carload is about equal to the demand at this season and wagonload shows improvement.

### Kentucky a Shade Weaker

The Kentucky coal market is a shade weaker. There has been some shading of prices over the week, due in part to a considerable let-up in Lake movement and mild weather over the Central states. A considerable tonnage in the Hazard and Elkhorn fields hasn't much of a market now that the bulk of the lake movement is over. Some of this is reported as offered considerably under the usually quoted market, block being obtainable as low as $2.75; some lump at $2.50 and some egg at $2.25. Most quotations on good grades of Harlan, Hazard and Elkhorn 4-in. coals are around $3.25@$3.75, with some of the specialty coals still quoted at $4@$4.50. Egg and 2-in. lump are weaker, however, at around $2.50@$2.80 in some instances, as these sizes are generally in good movement to the lakes.

Screenings in eastern Kentucky are just a shade weaker, at $1.20@$1.50. Eastern mine-run is firm at $1.50@$1.75. In western Kentucky the market is very steady with block at $2@$2.25; lump, $1.75@$2; egg, $1.35@$1.50; mine-run, $1.25@$1.50; screenings, pea and slack, 65c@80c.; 2-in. nut and slack, 80c.@95c., with some at $1.

There are now some "no bills" in both fields, and not much complaint is being heard just now about car shortage. Jobbers report that instead of having to hustle to find coal they are having plenty of it offered to them.

### Northwest Still Busy

Dock operators at Duluth and Superior are still making liberal shipments, though the tonnage is much less than in late October. Industrial plants have been the best buyers of steam coal in the last ten days, though some of the iron-mining companies and utilities have been making contracts.

Retailers' supplies are running low. Demand for Pocahontas and other smokeless substitutes for anthracite is the feature, but stocks of these coals on the docks are ample so that former anthracite consumers are not worrying over the probability that hard coal stocks will be practically cleaned up by the middle of January.

In the face of the heavy demand the docks are quoting Pocahontas nut and stove at $8.50; lump and egg, $9; mine-run, $5.25@$5.50; screenings, $4.25. Three of the docks have received cargo shipments of prepared sizes of Pocahontas and have thus been able to fill orders promptly but plants that have been forced to screen mine-run have found their facilities for handling prepared-size orders inadequate. Other coals are being held exactly where they have stood since early last summer and no changes are looked for in the near future.

Bituminous coal is still moving this way in good volume from the East, twenty-three cargoes having been unloaded at the docks last week and nineteen cargoes were reported en route. Supplies on hand are about 5,500,000 tons, of which around 2,000,000 tons belongs to railroads.

Milwaukee coal-dock managers report a quiet trade, with demand fluctuating with the weather. Consumers are wrestling with the fuel situation without loud complaint. The domestic turn from anthracite because of its absence is largely to Pocahontas of nut size, but there also is a noticeable demand for West Virginia and Kentucky bituminous coal. The weather continues sharp for the season, and household furnaces are going almost at winter gait. In November up to the 27th Milwaukee received by cargo 379,130 tons of bituminous coal. Prices are steady.

### Kansas Catching Up on Orders

After more than a week of mild weather, operators in the Southwest have cut down their unfilled orders for Kansas lump to three or four days, but so responsive is the market to weather changes this season that only a few days of freezing temperature would throw the mines back two or three weeks on deliveries. Nut and mine-run production is just about equal to the demand, while screenings are easy, though no surplus is reported in the field. Owing partly to railroads using more shovel coal this year than formerly the production of shaft screenings is lighter than in other years.

In Arkansas, also, there has been a slackening of demand because of the weather, with an increased production as new mines have opened. Arkansas semi-anthracite lump is quoted at $6@$6.50; mine-run, $2.75@$3.50; screenings $2.25.

In Colorado the demand for domestic coal shows no abatement and prices that compare favorably with the war-time level continue to be maintained. As the labor situation is improving and there are no transportation difficulties the trade is optimistic over the situation.

Operators and dealers in Utah complain that business is not as good as it ought to be at this season of the year. Demand for coal for heating purposes is better than it was, but with the exception of a few cold snaps which brought rush orders for a day or two, there has not been any weather to make a heavy and sustained demand. The call for steam coal is about normal. The car situation is good, prices remain steady, and there is no grade of coal on the market just now that is moving slower than the others.

### Spot Tendency at Cincinnati Is Soft

Smokeless distributors in Cincinnati who issue a monthly circular name $5@$5.50 as the December price for lump and egg coal. This is in the face of the unsettling effect of the closing of the lakes. The spot market tendency is toward softness. Some New Rivers sold down to $4.75. Mine-run is fairly firm with the general average at $2.50. Some small sales have been made at $2.25, but these mostly were for loads that had to be moved. Screenings hold up well, considering adverse market conditions, the range being $1.85@$2.

High-volatile domestic sizes have been struggling with a lull, mostly caused by too rapid stocking by retailers and mild weather. Some Kentucky coal has been offered at $3 for block, the first time for weeks. West Virginia producers name a $2.75 price. From this the quotations range up to $3.25 for ordinary stuff and $4.25 for specialized domestic coals. Egg sizings average around $2.25, a drop of 50c. in the week. Mine-run is in better shape; gas, byproduct and steam holding their own. The surprise of the market is the way that slack holds to its price.

Car supplies on the Louisville & Nashville are better and the movement easier. There is practically a clear line between Cincinnati and the lower assembly yards. Total movement through the gateways of the Cincinnati district last week was 14,318 loads, a decrease of 119 cars as compared with the previous week but an increase of 419 cars over last year. River business continues at its usual seasonal gait.

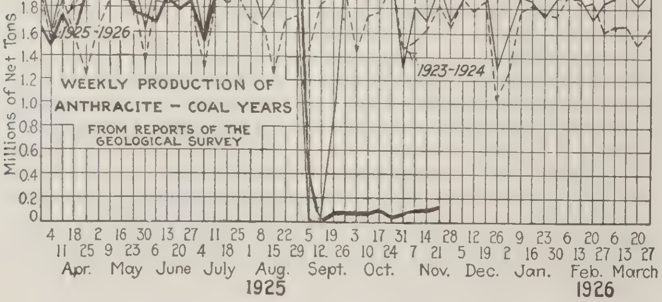
Softness in domestic grades continues in Columbus, due largely to warm weather. Dealers are cancelling some orders placed for shipment late in November and early in December. Prices at the mines have softened to a certain extent, especially on smokeless and Ohio grades. Some splints are being offered at less than the usual prices also. Distress coal is having a bad effect on quotations. Retail prices have not declined as yet as dealers are still rather busy making deliveries on orders previously booked. Smokeless grades are not selling as briskly as formerly as the spread between Pocahontas and splints is too great for consumers and many former smokeless users are content to buy high-grade splints.

Dullness characterizes the steam trade in every way. Users are buying mostly for current needs, as reserves are generally good. Production in the southern Ohio field continues at about 30 per cent of capacity.

In eastern Ohio, coal demand, both domestic and steam, and also for screenings, which were strong a week ago, has subsided somewhat and seems to be pursuing a rather easy gait, with the result that spot prices during the week have softened all along the line 5 to 15c. per ton.

In the week ended Nov. 21 the eastern Ohio output was 356,000 tons, the largest for any week of this year.

Total coal from all districts cleared over the lower lake docks up to Nov. 23 was 25,018,776 tons, as compared with 22,001,161 tons for the same period last year and 28,995,709 tons in 1923. Today there still remain some 8,000 cars under load at the lower docks awaiting clearance, and there are approximately 2,000 cars of lake coal in transit from the mines. Shipping in this trade from the mines ended Nov. 28.



### Eastern Demand Still Absent at Pittsburgh

The trade is distinctly disappointed over the course of the Pittsburgh coal market in the past two weeks, as there has been no revival in the Eastern demand. Demand from the restricted area the Pittsburgh district has been serving for the past year and a half has kept up quite well. Industries are consuming more than formerly and buying of domestic coal has been increasing somewhat in the past few weeks, being about normal for the time of year.

There still is no definite market price for egg coal, sellers simply getting what they can. In the past week there seem to have been some small lot sales at over $3, but in general the price is much less. Three-inch lump is going generally at $3.25@$3.50, against $3.75@$4 at the peak. Other prices are substantially unchanged.

Interest in Buffalo still centers on household trade. The ordinary bituminous trade is dull and it promises to be worse soon, unless something unexpected comes up. Prices are low and they promise to stay there. This is shown by the increase of coal standing on track unsold and by the appearance during the past few days of domestic coke, mostly egg size, that cannot find a buyer.

### Soft Spots Appear in New England

Soft spots in steam coal have again appeared in New England. Fresh accumulations at Hampton Roads with much lighter demand all-rail have together forced the agencies to consider lower prices than were thought possible a week ago. Rumors of an approaching anthracite settlement also have played their part, but the main factor is the almost entire absence of any spot demand from industries. The latter have already taken on reserves sufficient for months ahead, and aside from the steady movement coastwise of tonnage on contract the volume of coal coming forward on contract is by no means heavy.

There is a decided lull in the market for screened sizes all-rail, especially from the smokeless fields. It is becoming quite evident that the New England public is not much inclined to change habits and put in quantities of bituminous in advance of actual necessity. In most communities, especially in or near the large cities, it is still possible to be accommodated with anthracite in small lots. Pea and No. 1 buckwheat are available in many places, and in Boston, Portland, Providence, New Bedford and other cities high grade Welsh anthracite is to be had in moderate amounts. For all these reasons the retail dealers are shy of buying more lump and egg from soft-coal operators until the public relieves them of what they have on hand at high prices. In consequence, what feeble demand there is for low-volatile screened is being more and more restricted to the quality grades in central Pennsylvania where the lowest through tariff applies.

As yet there has been no reduction from the $6.50 level for Pocahontas and New River run of mine per gross ton on cars Boston and Providence for inland delivery. Practically all the distribution business is now in the hands of factors with ample storage facilities, and only when coal is forced on them by accumulations at the Virginia terminals are they at all pressed to move coal along to the consumer.

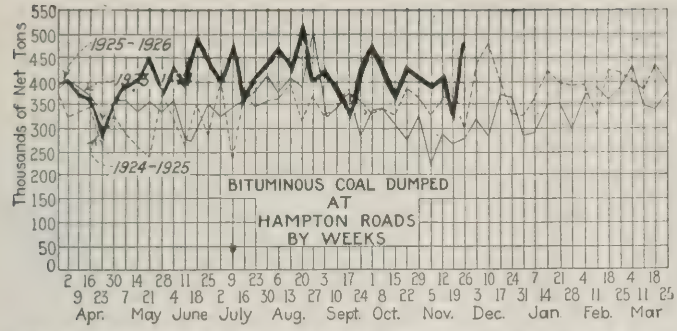
Run of mine from central Pennsylvania all-rail also is in the doldrums. Prices are off slightly on the part of those actively seeking business, and inquiry in this territory is confined to the narrow area that is not open to competition from smokeless coals via tidewater discharging ports.

### Steady Trade at New York

John L. Lewis' letter to President Coolidge made no impression on soft-coal consumers in the New York area. Most industrial users have good-sized reserves for emergency purposes and they are taking in a fair volume.

Movement of mine-run grades has been steady and up to normal requirements. No additional strength, certainly not in permanent prices, was noted during the week. Some of the maximum prices for the various pools are a trifle above last week's quotations but most of the coal went at the minimum figures.

Dealers in screened coals are looking for a sharp upward turn soon. At present the market is quiet. West Virginia



coals are quoted at $3.25@$4 and Pennsylvania coals at $4@$5. The latter are finding a ready market.

New River and Pocahontas lump is taking well in this territory, the quotations ranging around $4.65, and for egg at $4.75@$4.80. Fair-sized all-rail shipments of these coals have been made to Long Island points and are giving entire satisfaction.

Demand for soft coal at Philadelphia goes along quietly, but the business situation of all producers is far stronger than at this time last year as attested by increased tonnage and much better prices. Most of the contract users are coming along for their full quotas and in addition those buying on the market are increasing their orders. There also is the always present railway fuel business. These factors are holding prices to their present level on the spot market in the face of the possibility of a loss of tonnage if the hard-coal situation is cleared up.

Demand for soft coal at Baltimore continues moderate for prepared sizes while the rest of the soft coal market remains rather flat. Prices, it is true, are a little stronger than a week or so ago, and more nearly approximate quotations that came shortly after the start of the anthracite strike. No further export movement is recorded from this point and immediate prospects along the line are negligible.

At Birmingham the coal market continues very active. All grades of steam are in good demand, and coking coals are especially strong and the supply hardly equal to requirements. Washed steam of the better grades also is being bought up heavily, some of the leading producers having turned down considerable business during the past week. All consuming interests are taking additional coal with a view of building up a reserve for the holidays, and current consumption by industrials, railroads and utilities is abnormally heavy. Producers are hardly able to meet the demand for bunker fuel to supply shipping interests at Gulf ports. Export shipments to Cuban points are reported slow, due to inability to obtain bottoms, many of the vessels plying in this trade now being engaged in relieving traffic conditions in Florida.

Mines are very well supplied with domestic orders and current production is being promptly moved. Intermittent cold spells are keeping retailers fairly busy. The better grades have the favored call, but on account of the limited supply the market for the medium and lower qualities is thereby improved.

Quotations on steam and domestic sizes are without material change from a week ago. Car shortage has eased up, but complaints of labor shortage are still being reported—especially common labor.

Coke buying for foreign shipment has eased up a little due to lack of cold weather in the North and West. Foundry coke is in good demand locally at $6.50 per ton for spot. Egg and nut sizes range $4.75@$5.50, with about the same range for gas coke.

## Peace Talk Depresses Hard-Coal Market

Reports of peace talk in the anthracite field last week had a depressing effect on the hard-coal situation at New York, and as on previous occasions resulted in cancellations of some orders for substitutes. Consumers continue to hesitate about putting in substitute fuel, and meanwhile users having anthracite in their cellars are using it.

A couple of cargoes of British anthracite arrived in the harbor during the week, one of which was without consignment. Its owners, however, did not expect any difficulty in disposing of it.

Movement of free independent pea and buckwheat coals has slowed up. Wholesale dealers report few sales and quotations for pea range $16.25@$17 alongside. Buckwheat was quoted at $8@$8.50, also alongside. It was said there were a few small lots of egg, stove and chestnut coals offered, but no sales were reported. The larger companies continue to hold some buckwheat coal, which they are doling out on contracts.

Coke is moving steadily. Connellsville furnace coke was quoted at $4.50@$5, with foundry product at $6@$6.50. Egg was quoted at $7@$7.25 and nut at $7.50@$8.

The Philadelphia market is extremely quiet, as the temperature has been mild and rumors of the possibility of an early settlement of the strike have held back business. Coke is the fuel that leads, yet even sales of this have been meager of late. Plenty of beehive coke can be had at $6@$6.50, with byproduct selling at $7@$9. There seems to have been a grand rush to get in the beehive coke game and many ovens which have not operated for years are reported to be getting under way. This increased production has had much to do with the big drop in the price of this fuel. In addition to this coke has been badly marketed with retailers.

A stray car or two of anthracite pea and some shipments of buckwheat have arrived lately, but so far as the general market is concerned these sizes no longer figure, and with them anthracite is pretty much removed as a factor until mining is resumed.

There is no hard-coal situation at Baltimore, as dealers continue to sell prepared sizes of bituminous to former anthracite customers. There is some question in the minds of the local hard-coal dealers as to whether history will repeat itself, and the new users of bituminous return to hard coal when supplies of that commodity are resumed. The answer may be in the future price of anthracite as compared with that of the future price of prepared sizes of bituminous.

When it was thought by some that a settlement of the strike was near the demand at Buffalo for bituminous coal for domestic use fell off so that it had to be offered as low as $3 at the mines for egg size, with no takers, though it had of late sold as high as $4 or even more. Connellsville coke also fell rapidly, as consumers had found it so high that they preferred anthracite if it could be had. Local byproduct cokes have not fluctuated so much, the steadiness being increased by the holding of the product of one company at $7.50 at the curb, while others were sometimes up to $14. Prices are mostly dependent on the prospect of settling the strike.

## Connellsville Coke Market Declines Again

Eastern buying of coke at Connellsville has not revived, which means a further decline in market prices, for production had greatly increased on account of current sales, most of which were spot or for shipment within a week. Coke has accumulated on track, but not a great deal, for, in view of heavy transportation requirements, railroads will not allow cars to be used for storage purposes.

Thus production had a momentum and purchases have not sustained the market. While the *Courier* report shows a slight increase for last week in merchant oven production, the fundamental trend has been the other way since the preceding week had been restricted by labor troubles, now practically ended.

While the report of eight days ago noted offerings of furnace coke going the rounds at $5 in the last couple of days several operators have been offering coke at $4, and meeting somewhat limited response. It might be expected that the blast furnacemen, whose contracts run out Dec. 31, might pick up some of this coke to use afterward, but they show little interest.

Foundry coke also has weakened from heavier production. Some operators switched from 48 to 72-hour burning to reduce tonnage, and it is now quotable at $5@$6 on actual offerings.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Nov. 14, 1925 | 1,050,758 | 186,416 |
| Previous week | 1,063,332 | 189,212 |
| Week ended Nov. 15, 1924 | 1,016,843 | 189,728 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Nov. 14, 1925 | 112,572 | 37,041 | ........ | ......... |
| Nov. 7, 1925 | 103,969 | 37,726 | ........ | ......... |
| Nov. 14, 1924 | 145,589 | 79,111 | ........ | ......... |

# Foreign Market And Export News

## Broader Inquiry in British Coal Market; French Orders Scarce

Inquiries in the British coal market are steadily expanding, but the progressive movement is partially checked by the scarcity of orders from France, the low level of exchange stimulating the sale of native coal to the exclusion of imported supplies. Despite this handicap, which is exceedingly serious to Wales, business is more evenly distributed among the different grades, and further compensation is provided in a consistent expansion in home demand and the development of forward inquiry.

There is a pause in buying from the United States and Canadian business lags on the closing of river navigation. To the former 130,000 tons has been booked, the bulk which has yet to be shipped. South American orders are much more numerous, and in addition to a contract of 75,000 tons (two-thirds best large, one-third best small) for Lloyd Brasileiro other period business is offering. Italy is buying on a fair basis. Coaling depots are more active, and there is a brisk inquiry from Spain and Portugal.

The Newcastle-on-Tyne market improved again during the week, and in every section there was quite a brisk demand for fuel at current prices running practically till the end of the year. The coke market, too, maintained the improved tone of last week, and there has been quite a revival in that business following a better outlook in the iron trade. Contract business was not on a large scale and was mainly for gas coals, but the prices paid for over the year indicate a maintenance of current quotations.

Output by British collieries during the week ended Nov. 14, according to a special cable to *Coal Age*, totaled 4,880,000 gross tons, compared with 4,790,000 tons in the previous week.

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## Bookings Satisfactory in French Coal Market

Although the present state of industry is not of a nature to provoke a very strong demand for fuels in the French coal market the French mines are filling their order books in a satisfactory manner, due to the depreciation of the franc. Calls are coming from consumers who under ordinary circumstances buy abroad, British coals suffering most. The State Railways have been authorized to ask for prices in Belgium on briquets to be delivered at ports of the West, those from across the Channel being too costly.

Demand for choice domestic coals has been light, which has enabled dealers to restock their yards in preparation for winter.

Receipt of indemnity fuels from the Ruhr during the first twenty-four days of October included 330,500 tons of coal, 185,200 tons of coke and 23,900 tons of lignite briquets. During the first nine days of November the O. R. C. A. received from the Ruhr 54,321 tons of indemnity coke.

French fuel output during September, 1925, consisted of 3,996,863 metric tons of coal; 83,804 tons of lignite; 262,564 tons of coke and 343,771 tons of patent fuel. Total production during the first nine months of 1925 was: coal, 35,591,622 metric tons; coke, 2,234,116 tons; patent fuel, 2,619,711 tons, compared with 33,325,931, 1,928,415 and 2,391,011 tons, respectively, in the corresponding period of 1924.

## Belgian Trade Tendency Weaker

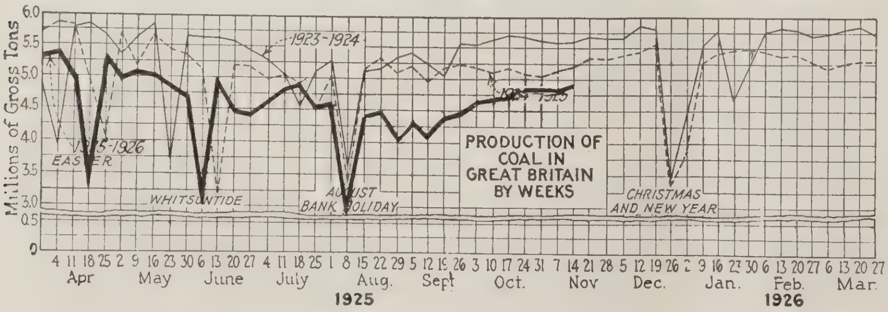
The price tendency in the Belgian coal market is again weaker. Demand is extremely modest and is inclined to decrease because of the keenness of French competition, aided by the depreciation of the French franc. British competition, on its side, has not decreased any more than the German and the Dutch. In the Borinage district in particular the crisis is felt and the reign of concessions, far from diminishing, is more in evidence than ever.

In industrial grades bituminous coals and coking smalls are most neglected; semi-bituminous coals are moving better, as are smalls for making cement and lime. Movement of lean duffs is still nil.

The tendency in domestic coals remains firm, and as cold weather has returned the outlook is favorable.

Briquets, in spite of the effect of the high cost of pitch, are in slightly improved demand, especially on the part of the Belgian State. The demand for coke also is a little stronger, at 125 fr. for metallurgical quality.

Prices as of Nov. 1, 1925, compared with those of Oct. 1 show only these differences: 3 fr. decrease on washed semi-bituminous duffs and 2 fr. on dry peas.



## Further Weakness Appears At Hampton Roads

Business at Hampton Roads was comparatively slow last week, with prices showing a tendency to weaken. Quotations for domestic coal were holding their own at $6.50@$7 at the mines, and the retail price showed no further incline above the scale of $12.50@$13 fixed several weeks ago.

Foreign business showed the biggest drop, though neither coastwise nor bunker trade was up to normal. Shippers held the new movement of coal to the North by rail as responsible for a comparative lack of interest in the coastwise trade.

### Export Clearances, Week Ended Nov. 28, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Canal Zone: | |
| Amer. Str. Achilles, for Cristobal | 12,026 |
| For Jamaica: | |
| Br. Str. Baron Sempill, for Kingston | 2,211 |
| For New Brunswick: | |
| Br. Schr. A. T. Davidson, for St. John | 876 |
| For Brazil: | |
| Br. Str. Bradclyde, for Rio de Janeiro | 7,155 |
| For France: | |
| Ital. Str. Emanuele Accame, for Marseilles | 12,245 |

### Hampton Roads Coal Dumpings*

| | Nov. 19 | Nov. 26* |
|---|---|---|
| N. & W. Piers, Lamberts Pt.: | | |
| Tons dumped for week | 97,460 | 169,931 |
| Virginian Piers, Sewalls Pt.: | | |
| Tons dumped for week | 86,410 | 96,104 |
| C. & O. Piers, Newport News: | | |
| Tons dumped for week | 113,383 | 165,424 |

*Data on cars on hand, tonnage on hand and tonnage waiting withheld due to shippers' protest.

### Pier and Bunker Prices, Gross Tons

| PIERS | Nov. 21 | Nov. 28† |
|---|---|---|
| Pool 1, New York | $5.75@$6.00 | $5.75@$6.00 |
| Pool 9, New York | 5.00@ 5.25 | 5.00@ 5.25 |
| Pool 10, New York | 4.75@ 5.10 | 4.75@ 5.10 |
| Pool 11, New York | 4.55@ 4.70 | 4.55@ 4.70 |
| Pool 9, Philadelphia | 5.05@ 5.30 | 5.05@ 5.30 |
| Pool 10, Philadelphia | 4.80@ 5.10 | 4.80@ 5.10 |
| Pool 11, Philadelphia | 4.50@ 4.75 | 4.50@ 4.75 |
| Pool 1, Hamp. Roads | 4.85@ 5.00 | **5.00@ 5.25** |
| Pool 2, Hamp. Roads | 4.60@ 4.75 | **4.85** |
| Pools 5-6-7, Hamp. Rds. | 4.50 | **4.75** |
| BUNKERS | | |
| Pool 1, New York | $6.00@$6.20 | **$6.00@$6.25** |
| Pool 9, New York | 5.25@ 5.55 | 5.25@ *5.50* |
| Pool 10, New York | 5.00@ 5.35 | 5.00@ 5.35 |
| Pool 11, New York | 4.80@ 4.95 | 4.80@ 4.95 |
| Pool 9, Philadelphia | 5.30@ 5.55 | 5.30@ 5.55 |
| Pool 10, Philadelphia | 5.10@ 5.35 | 5.10@ 5.35 |
| Pool 11, Philadelphia | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 1, Hamp. Roads | 4.85@ 5.00 | **5.00@ 5.25** |
| Pool 2, Hamp. Roads | 4.60@ 4.75 | **5.00** |
| Pools 5-6-7, Hamp. Rds | 4.50 | **4.85** |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Nov. 21 | Nov. 28† |
|---|---|---|
| Admiralty, large | 23s.@23s.6d. | *22s.6d.@23s.6d.* |
| Steam smalls | 10s.6d. | **11s.6d.** |
| Newcastle: | | |
| Best steams | 17s.6d.@18s. | *15s.6d.@17s.6d.* |
| Best gas | 16s.6d. | 16s.6d. |
| Best bunkers | 15s.@16s.3d. | *14s.6d.@15s.* |

†Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ARKANSAS

The Central City Coal Co., which has been operating between Branch and Charleston, has moved to Prairie View and has taken the contract for the Scranton Coal Co. to strip anthracite coal.

## COLORADO

The state coal mine inspector's report, just released, shows October's production was 1,144,960 tons, contrasted with 1,050,805 tons in the same month a year ago. The number of men employed was 12,136 compared with 12,608 a year ago for the same month. The number of days worked per mine for October, 1925, was 142.1 compared with 148.1 in same period a year ago. The increases in production occurred in Routt and Las Animas counties, the other districts just about holding their own.

## ILLINOIS

The itinerary of the Illinois Miners' Examining Board has been announced for this month as follows: Belleville, Courthouse, Dec. 7; Christopher, Miners' Hall, Dec. 8; Harrisburg, Rom Club, Dec. 9; Duquoin, Miners' Hall, Dec. 11; Centralia, Miners' Hall, Dec. 12; Staunton, Labor Temple, Dec. 14; Springfield, State House, Dec. 15; Taylorville, Courthouse, Dec. 16; Danville, Courthouse, Dec. 17; LaSalle, City Hall, Dec. 18, and Peoria, Courthouse Dec. 19.

No. 1 mine of the Superior Coal Co., Gillespie, broke its record Oct. 29 for a day's hoist, when the mine produced 5,041 tons of coal in 1,626 dumps. Several years ago the rumor was current that No. 1 mine was fast being worked out, but since that time the mine has broken a number of records.

After being shut down for about a year and a half the St. Ellen mine, at O'Fallon, is again in operation. The mine gives work to 450 miners. It is reported that the Prairie mine, also at O'Fallon, which has been closed for many months, may also reopen.

## INDIANA

The Pike County Collieries Co., owning strip mines in the southern part of Pike County, resumed operations Nov. 18 after a week spent in the hands of a receiver, Fred I. Conyers. Contested pay checks given miners at the time the receivership took place have all been redeemed and miners have been paid for their services. The company operates three giant shovels, employs 250 men, and owns real estate and equipment in Pike County valued at $1,000,000. The company has a production of from 60 to 80 cars of coal a day, requiring two trains to handle.

The tipple of the Somerville mine, wrecked by fire several weeks ago, is being replaced by a temporary wooden structure, which will ultimately give way to a steel structure. Operations at the mine are expected to be resumed within six weeks.

## IOWA

An agreement has been reached between Budget Director Hogue and members of the board of mine examiners by which the board will hold only six meetings a year and with only three of the five members in attendance, in order to reduce expenses. This is the result of findings of F. H. Paul, accountant, which included an assertion that the board was likely to exceed its biennial appropriation before the two-year period expired. The recent Legislature was asked by Mr. Hogue to reduce the membership of the board from five to three and fix its appropriation at $2,000. The appropriation, supplanting a system by which the board's allowance was unlimited and under which it spent about $4,000 annually, was provided, but the law was otherwise unchanged.

## KANSAS

James Price and Joe Lafayette, both of Pittsburg, have leased from J. S. Patton, of Frontenac, the old Hamilton Mine No. 7, known as Radley No. 7, near Radley, and expect to have it in operation early in December. The mine has been idle several months. It will employ seventy-five men.

The Crowe Coal Co. on Nov. 17 reopened its mine No. 21, near Croweburg, after several months of idleness. The mine employs from 200 to 250 men.

At the suggestion of Mayor C. Mart Montee, of Pittsburg, the Pittsburg Chamber of Commerce again this year is sending out small bags of southeastern Kansas coal to all mayors of the state. The bags carry the admonition imprinted on them, "Use Kansas Coal."

James Sherwood, Kansas state mine inspector, recently announced that one hundred more mines are operating now in Kansas than at this time last year. All but two of the district's larger mines are working. Central Coal & Coke Co.'s No. 50, closed since 1921, and the Sheridan Coal Co.'s No. 20, alone of this class are idle. The Western Coal & Mining Co. has one new mine in operation, and another down to a depth of 250 ft.

The Lone Star Coal Co. has started the erection of a shovel on coal land it controls west of Pittsburg and expects to be mining coal within one or two months. The Joplin & Pittsburg Railway Co. will build an extension of its track to the mine. J. J. Nesch and R. G. Nesch, both of Pittsburg, two of the men interested in the new company, estimate their land contains sufficient coal for ten years' operation.

Hoisting at the Chapon & Westerlin Coal Co. mine near Chicopee, began Nov. 23. A new tipple recently was built to replace the one destroyed during the strike of 1921, since which time the mine had been idle. The mine employs 100 men. Its product is being handled by the Central Coal & Coke Co.

## KENTUCKY

From Madisonville it is reported that the Federal Coal Co., of Indianapolis, has leased coal rights on 170 acres of coal land from T. M. Slaton, living near Madisonville. The acreage is on the Central City-Dawson Springs division of the Illinois Central R.R., four miles from Madisonville, where a shaft mine will be installed to mine the No. 9 and also the No. 11 beds.

The eastern Kentucky development along the Virginia border to follow announcement of routes to be used by the Louisville & Nashville R.R. in making connections from the Cumberland Valley and East Kentucky divisions of the road to the Carolina, Clinchfield & Ohio R.R. has been further delayed by application of the Louisville & Nashville R.R. for thirty days' additional time in which to file proposed construction lines for the two connections. This means that the papers will not be filed until about Feb. 1 and that there will be alternate routes included, which will mean some delay before definite routings will be established.

A recent report from southeastern Kentucky was to the effect that a number of the coal operators in the Harlan field were preparing for larger production, the Black Mountain Coal Corporation, at Kenvir, planning erection of fifty more homes and improvement of plant. The Harlan Collieries Co., at Ages, has just completed a string of houses, doubling its housing facilities, and other camps are reported to be enlarging.

It was recently reported from eastern Kentucky that T. C. Vaughan, of Elsiecoal, a manager for the Consolidated Fuel Co., a Pittsburgh company, over a period of several years, had resigned, planning to enter business in one of the mountain towns.

It was reported from Madisonville on Nov. 20 that the body of Tony Chortina, the last of five men killed in an explosion of gas in the Finley Coal Co. mine, had been recovered by workers from the U. S. Bureau of Mines, Evansville (Ind.) division, which sent a car to the scene after the explosion of Nov. 19. Trouble was experienced in reaching three of the bodies, due to fallen slate and fire. Two of the seven men in the mine escaped.

The Consolidation Coal Co., having large mines at Jenkins, McRoberts, Dunham and Burdine, is to start immediately a large improvement campaign including the opening of new mines, extending spur tracks, and building new miners' houses in and around its plants, which will necessitate the expenditure of several hundred thousand dollars.

## MINNESOTA

The Duluth & Iron Range R.R. is rebuilding the pockets section of its coal dock at Two Harbors. The dock is 936 ft. long and has a storage capacity of 100,000 tons. The forty wooden pockets are being replaced by steel ones and the dock is being generally overhauled. The contract for the steel work has been let to the American Bridge Co. at a cost of $110,500. The dock is Mead-Morrison equipped. In addition to handling coal required for mines on the Vermilion range and for its locomotive department the company supplies coal to its employees.

## NEW YORK

The firm of Willard, Sutherland & Co., 8 Bridge St., New York City, will retire from business Dec. 31, next. Le Baron S. Willard will become affiliated with the Berwind, White Coal Mining Co., 1 Broadway, on Jan. 1.

## NORTH DAKOTA

Appeal to the Supreme Court from the decision of the Burleigh County District Court was taken Nov. 21 by the Washburn Lignite Coal Co., in connection with its suit to enjoin the state board of administration from carrying out alleged illegal contracts with competing coal companies. The plaintiff's contention is that the board has illegally awarded contracts to the Republic, Knife River and Lucky Strike coal companies despite the alleged fact that the plaintiff submitted a lower bid. The lower court held that it could not interfere with the discretionary powers of the state board. The board contended that the awards were based on the value of the coal as shown by chemical tests and actual experience and that the coal from the plaintiff's mine tested by the board was less efficient than that from the mines of competing companies.

## OHIO

The Fort Pitt mine of the Central Coal Co., of Pittsburgh, on the Ohio side of the Ohio River opposite Moundsville, W. Va., opened Nov. 30. Approximately 170 miners went to work on the Jacksonville scale. The mine had been closed for a year.

After a one day's trial at Pomeroy, the suit of the Martin Ebersbach Coal Co. against the New Pittsburgh Coal Co. for $550,000, claimed as unpaid balance on the sale of six coal mines in the Pomeroy Bend district two years ago, was stopped by the judge, who asserted the matter was one for the two business firms to adjust outside of court.

The Akron Coal Co. has reopened the Murray Hill mine, at Cambridge after an idleness of several months. The plant employs 250 men.

Tom Bush, who for eighteen years was connected with the coal department of the Chesapeake & Ohio Ry. at Cincinnati, has been advanced to the position of coal agent, with headquarters in the Spitzer Building at Toledo.

Operations in the Pomeroy Bend field have been rather brisk during the past two weeks. As the mines in this field are operating either under the 1917 wage scale or under the co-operative plan, they have a decided advantage over other parts of the southern Ohio field, where the Jacksonville scale prevails. The New Pittsburgh Coal Co. is producing from 1,600 to 1,700 tons daily at three large mines employing 550 men. The mines operated are the Dark Hollow Mine, No. 72; the Syracuse Mine, No. 75, and the Thomas Mine, No. 76. The Forest Run mine, which had been in operation for several months, has been closed temporarily. The Stalter-Essex Coal Co. has two mines in full operation, employing about 350 men. The Blue Stone mine, at Rutland, the tipple of which was destroyed last August, is now running full blast.

Announcement is made that the litigation between the New Pittsburgh Coal Co., of Columbus, and the Peacock Coal Co., of Pomeroy, controlled by the Ebersbach interests, involving about $3,000,000 and a large tract of good coal land, has been dismissed and the case settled out of court.

Nolan Mahan, of the General Coal Co;. John Stirnkorb, of the Hatfield Reliance Coal Co.; Armour A. Sizer, of the Flat Top Fuel Co.; C. R. Moriarty, of the Cabin Creek Consolidated Coal Co.; John Callahan, of the Southern Coal & Coke Co., and J. C. Layne, Jr., of the Man O' War Fuel Co., have been nominated for directors of the Cincinnati Coal Exchange.

The property of the Buckthorn Collieries Co., located in Tuscarawas and Guernsey counties and consisting of 1,400 acres, has been sold by Attorney O. O. Vrooman, of Cleveland, who has been acting as trustee for the property, to a syndicate of Cleveland capitalists. The new company will be known as the Cleveland Collieries Co. and will have general offices in Cleveland. The price paid for the property is $54,900.

## PENNSYLVANIA

At a meeting of the Johnstown Association of Credit Men, Nov. 24, Charles O'Neill, of Altoona, secretary of the Central Pennsylvania Coal Producers' Association, explained that it was freight rates, not labor, that have reduced production of coal in central Pennsylvania. He said that times and things have changed since the war, but the most inflexible thing is the rate sheet of the Northern roads. The cost of carrying coal out of Pennsylvania is still at the war-time peak. Hauling coal 200 miles for 25c. a ton has put Pennsylvania second and West Virginia first. Production in Pennsylvania has fallen from 180,000,000 tons to 100,000,000 tons and West Virginia has grown from less than 100,000,000 tons to 146,000,000 tons.

The month of November is establishing a new high record in the eastbound loaded freight movement over the Pennsylvania R.R. through the Altoona and Hollidaysburg yards. A daily average has been maintained of 3,755 cars. The tonnage will be higher than in October, 1915, when the daily average was 3,560 cars, which was the previous high mark.

Coal production in the Philipsburg region is steadily increasing and nearly all the mines in the region are opening up under the 1917 scale, while a few are operating at a slightly higher rate. A new difficulty now is a scarcity of mine labor. During the early stages of the slump large numbers of miners went into other industries and advertisements for miners failed to bring them back to their former employment.

It has been definitely announced that the Adrian furnace at DuBois will resume operations at an early date, or as soon as necessary repairs, now under way, are completed. One hundred and twenty-five men will be employed. This is a direct result of the resumption of the coal industry.

After experiencing considerable trouble due to sniping and picketing on the part of labor sympathizers, the Bethlehem Mines Corporation finally got production started at the Marianna mines of the company near Bentleyville, on the 1917 scale. Shipments were made last week in small quantity, three cars going out the first day.

Recovery of the coal industry in the Russellton-Curtisville district is seen in the reopening of the Superior Coal Co. mines at Superior after a shutdown of more than 18 months. Mines of the Republic Iron & Steel Co. at Rural Ridge are operating on part time. Installation of a new cage at the Ford Colliery mine No. 3, at Curtisville, is believed to indicate the early opening of that mine. Miners are returning to the Russellton field, and mining villages are exhibiting signs of life after an enforced idleness of nearly two years.

Two hundred and fifty representatives of anthracite companies, public water companies, railroads and industrial corporations and municipal officials have been invited to attend a meeting of the Delaware River Treaty Commission of Pennsylvania to be held in Harrisburgh Dec. 10. The meeting has been called by Dr. Charles H. Miner, Secretary of Health and chairman of the commission, for the purpose of enabling the public to express its views on the proposed treaty, which seeks to apportion the waters of the Delaware River among the municipalities and communities in New York, New Jersey and Pennsylvania which lie in the Delaware River watershed.

Announcement was made last week of the appointment of former Judge John P. Kelly, of Scranton, as general counsel of the Hudson Coal Co. Judge Kelly succeeds James H. Torrey, deceased, who has acted as legal adviser to the company for many years.

The Braznell mine of the Pittsburgh & Lake Erie Coal Co., about two miles from Brownsville, which heretofore has been a union mine, is preparing to resume operations on the 1917 scale. All of the former employees of the plant refused to work and those occupying company houses have been notified to vacate, so that others can be brought in.

## UTAH

An echo of the coal strike in Utah in the spring of 1923 was heard last week when prosecuting attorneys having jurisdiction in Carbon County, where the strike occurred, moved for the dismissal of the charge of murder against several strikers whose cases had been postponed. The men were said to have been implicated in the killing of a deputy sheriff who was helping to guard the mines. A few convictions were obtained following the death of the deputy, but for various reasons all of the men had not been brought to trial. The scattering of witnesses and the difficulty of obtaining convictions were given as reasons for the request for dismissal.

The Sevier Valley Coal Co. has received permission to offer for sale $60,000 worth of stock, the commission not to exceed 20 per cent.

## WASHINGTON

Oil stored for fuel purposes is blamed for a conflagration which wiped out one of the principal blocks in Seattle's Auto Row recently and was brought under control only after it had done damage aggregating $1,000,000. Many garages and service stations save old crankcase oil and use it for heating purposes. Several barrels of this reclaimed oil had been stored in the basement of one of the automobile service houses. The blaze is said to have started by spontaneous combustion. Three hundred motor cars and 75,000 tires were lost in the fire.

The Bellingham Coal Mines' new 18 per cent slope, one of the longest mine slopes in the United States, began operating Nov. 16. The slope, which is nearly 2,000 ft. long, will serve the fourth and lower levels. It will be able to handle 50 per cent more coal than the old slope, which has a 30 per cent grade. The latter will continue to operate. The construction of the slope was under the direction of James Pascoe, superintendent, and E. C. Lyle, local engineer. W. P. Williams had charge of the machinery. The slope was started about a year ago.

**Mount Pleasant Colliery**

Mrs. Kate Pettibone Dickson, of Scranton, Pa., widow of Alan Dickson, has sold this property to the Elk Hill Coal & Iron Co., a subsidiary of the Scranton Coal Co., as announced in *Coal Age* Nov. 19. The sale involves the transfer of 227 acres of coal land and 96 acres of surface property, including the site of the Mount Pleasant breaker. The consideration was $650,000, part of which was covered by a mortgage payable within one year.

## WEST VIRGINIA

The Island Creek Coal Co. on Nov. 24 declared a dividend of $5 on the common stock and also the regular quarterly of $1.50 on the preferred, both payable Jan. 1 to stock of record Dec. 15. In the preceding quarter the company paid an extra $1 besides the regular $2 on the junior issue.

A warning to mine operators to use rock dusting instead of sprinkling as a means of preventing explosions was issued Nov. 21 by R. M. Lambie, chief of the state Department of Mines, in connection with his monthly accident report.

The Wheeling Steel Corporation will erect an additional battery of 57 by-product coke ovens, to cost $1,000,000, at the present plant at East Steubenville. Production will be increased from 1,000 to 1,700 tons daily. Coal will be obtained from Harmarville, in the Pittsburgh district.

Announcement was made Nov. 28 by the Brady-Warner Coal Corporation, Fairmont, that R. M. Magraw, a mining engineer, who has been located in Colorado, Montana and Utah during the last 20 years, will become general superintendent of the company Dec. 1 to succeed John Whelan, formerly of Ohio, who resigned.

The New England Fuel & Transportation Coal Co. and the Jamison Coal & Coke Co., will soon start to rock dust their mines in the Fairmont region. The Bethlehem Mines Corporation is continuing the work started some months ago.

J. Edgar Long, of J. E. Long & Co., coal wholesalers of Clarksburgh, announced Nov. 28, after a return to the East, that the Acme Coal Co., composed of Eastern capitalists, had leased his various mining properties and were now operating them. Although newspaper reports previously carried similar information, it was not definitely announced until recently that the deal was definitely closed.

The Clarksburg District Mining Institute at its 68th monthly meeting in Clarksburgh, Nov. 28, decided to invite Robert M. Lambie, of Charleston, chief of the West Virginia State Department of Mines, to address one of the meetings in the near future. The annual meeting of the Institute will be held on Jan. 23 in Clarksburg.

Earl B. Beerbauer, of Fairmont, general superintendent of the Fairmont Gas Coal Co., on Nov. 27 assumed the duties of general superintendent of the Lincoln Hill Coal Co., near Washington, Pa. The mine is operated by a steel car company, which utilizes its own tonnage, according to reports. Mr. Beerbauer is making arrangements to dispose of his interests in the Fairmont Gas Coal Co.

The American Coal Co. of Allegany County has declared a dividend of $1 payable Dec. 21 to stock of record Nov. 30. This makes $4 paid this year.

The Baltimore & Ohio R.R. in October reports that mines on its system produced 3,756,570 net tons of coal, compared to 3,250,000 tons in September. On the Monogah Division there were 26,898.4 cars of the equivalent of 50 tons, and 18,733.9 cars on the Wheeling Division.

The Beechwood Mining Co. recently started its coke ovens at Beechwood, Monongalia County. They have been closed since the World War ended.

The Kingston-Pocahontas Coal Co. is installing a new tipple at its Springton operation, in Mercer County, and the Turkey Gap Coal & Coke Co. is installing a new washer at Hiawatha, Mercer County. The Miller Pocahontas Coal Co., operating on the Virginian, is making plans for the erection of two small tipples at its operation, it is reported unofficially.

The H. T. W. Coal Co., which recently took over the Alma Thacker property on Blackberry Creek near McCarr, in the Williamson field, has elected the following officers: J. W. P. St. Clair, president; John S. Hall, vice-president, and E. A. Hansbarger, secretary. Other stockholders are John L. Chafin and L. S. Spaulding.

The mining men in the Clarksburg section have organized their own mining extension class with an enrollment of 19, after the mining extension department of West Virginia University decided to concentrate on southern West Virginia and eliminate northern West Virginia this year, because of the existing labor troubles in the field.

Some of the work pursued in the mining extension department of Pennsylvania State College probably will be followed.

The Island Creek Coal Co.'s newest tow boat, the "Sam P. Suit" started on its maiden voyage from Huntington to Cincinnati, Nov. 21. The boat, which cost $175,000, is named after the general superintendent of river transportation for the Island Creek company.

A contract for twenty-five new miners' houses to be erected at Mine No. 4, on Laurel Creek, of the Coal River Collieries Co., is to be let, according to an announcement made by J. T. Dunigan, president and general manager of the company. The coal company has completed work on twenty-five new houses at the same operation and a new moving picture house and bath house are in the course of construction. A new recreation center also is projected.

The sale of the property of the Greenbrier Smokeless Coal Co. at Bellburn to interests headed by A. B. Crichton, of Johnstown, Pa. has been announced by Robert M. Bell, president of the concern. This purchase gives the Crichton interests control of 1,000 acres of coal lands on Meadow Creek adjoining lands already under lease. The Greenbrier Smokeless Coal Co. was organized by Mr. Bell, W. E. Nelson, W. B. Hines, H. H. Blackburn, Mason Bell and Edward Graff and began operations in the Greenbrier field in 1920, being the pioneer company in point of development in that field. The sale concluded involves property worth approximately half a million dollars.

Announcement is made of the appointment of C. A. Warden, formerly assistant to the general manager of the Kingston Pocahontas Coal Co., with general headquarters at Hemphill, as general superintendent of the company, which operates on an extensive scale in McDowell, Mercer and Fayette counties as well as in Pike County, Ky. Mr. Warden is to have supervision over operation, construction and store management. He has been connected with the company since 1910, having served in the capacity of mine superintendent, general superintendent of mining operations in Kentucky and assistant to the general manager.

One hundred and sixty-five frame houses will be built by the Island Creek Coal Co. at Holden, five miles above Logan, within a short time, company officials said last week after receiving initial bids from contractors. The cost of the new homes will be $200,000. The buildings will be four- and eight-room structures, and will house a substantial addition to the population of Holden, already one of the largest and best equipped mining camps in the state.

Circuit Judge Thomas R. Shepherd of the Circuit Court of Cabell County has overruled a motion to set aside the verdict of the jury for $122,500 in the suit of Charles W. H. Crane, of Cincinnati, against A. J. Dalton and J. A. Kelly, of Huntington. Crane based his suit upon a contract for the sale of approximately 49,000 acres of Wyoming County coal and timber land, contending that in the exercise of an option held by him Dalton and Kelly had agreed to pay him $5 an acre. The defense claimed that a partnership agreement existed between Crane, Dalton and Kelly and that the profits, if there were any, were to be divided. Sale of the land later, it was contended, did not show any profits.

J. W. Bischoff, who for a number of years was connected with the West Virginia Coal Co., has become identified in an important capacity, with the Kanawha & Hocking Coal Co., in the Kanawha field and will have his headquarters at Longacre.

With the dismantling of a wooden tipple at the river plant of the Island Creek Coal Co. at Huntington, that company is starting work on a new steel tipple which is to cost in the neighborhood of $250,000. The new coal loading apparatus is in partial use now and is handling 4,500 tons daily, an increase of 1,000 tons over the full capacity of the wooden tipple.

## WYOMING

M. W. Medill, assistant superintendent of the Union Pacific Coal Co. mines in the Rock Springs area of this district, has been elected Wyoming state president of the Izaak Walton League of America.

The Rock Springs Labor Temple Association has declared a 10 per cent dividend upon its capital stock of $27,500. The stock of the association is owned by United Mine Workers locals of the district.

Ten Chinese coal miners employed by the Union Pacific Coal Co. for an average of more than 36 years will be returned to Canton, China, due to old age and failing health. The company will pay expenses of the voyage and supply sufficient money to keep the men during the remainder of their lives. All are married, their wives living in the old country, and they will for the first time return to their native land since coming to America.

## CANADA

Officials of the Hamilton (Ont.) Chamber of Commerce and representatives of several large industries have entered a protest with the Dominion Board of Railway Commissioners against the action of the Canadian National and Canadian Pacific railways in raising the rates on coal from Port Stanley and Erieau from 90c. to approximately $1.50 per ton. The new rate will go into effect Jan. 1 and will seriously affect industrial conditions in Hamilton.

Alberta claims the distinction of being the first province in Canada to establish a research council, with laboratories and a staff under its own control. The present membership of the council is: Chairman, H. Greenfield, premier of the province; Dr. H. M. Tory, Prof. J. A. Allan, J. T. Stirling, Prof. N. C. Pitcher, Dean R. W. Boyle, and Prof. Edgar Stansfield, honorary secretary. The two main problems under study have been coal and road materials. Much work has already been accomplished in the determination and correlation of coal seams. Some 700 samples have been received since the formation of the council, but only the last 500 of these have been analyzed in the council's laboratories.

The production of coal at the collieries of the British Empire Steel Corporation during October amounted to 467,725 tons as compared with 427,122 tons for the month of September.

# Traffic

### Protest Maryland Rates

Rates on coal from the Cumberland-Piedmont region of Maryland are discriminatory to the extent that they exceed those from mines on the western slope of the Alleghenies or from the mines of the New River and Pocahontas districts, it is alleged in a complaint filed with the Interstate Commerce Commission by producers in the first mentioned field.

Freight rates on coke from Appalachia, Stonega and other producing points to California destinations are not unreasonable, in the opinion of Examiner Knowlton, who recommends that the Interstate Commerce Commission dismiss the complaint filed by the Romann & Bush Pig Iron & Coke Co.

The Gulf Coal Co., of Tams, W. Va., in a complaint filed with the Interstate Commerce Commission, protests against a rate of $1.13 per ton on coal from its Hot mine to Pemberton, plus New River district rates from Pemberton to destinations on the Chesapeake & Ohio R.R.

The Utah Traffic Shippers' Association has been organized to carry on a vigorous fight for fair transportation rates for this state. Among the important industries of Utah which it hopes to protect are coal, it is stated. The new association has strong backing.

# Obituary

**J. O. Reed**, 64, one of the leading spirits in the coal industry in the Clearfield region, died at his home in Philipsburg, Pa., on Nov. 23. Early in life he worked in the steel mills at Braddock, later became a bridge and car builder for the Huntingdon & Broad Top R.R. For a time he worked in the silver mines of Colorado and in 1897 assumed charge of construction of railroad cars for the Pittsburgh & Susquehanna R.R., the coal line which traverses the field between Ramey and Philipsburg. He became general manager of the railroad and later its superintendent and at the same time was general superintendent of the operations of the American Union Coal Co., which shipped over the road. He was a resident of Philipsburg for 22 years and served as a member of the Borough Council. He is survived by his wife and two daughters.

**J. R. Smith**, president of the Little Cahaba Coal Co. and of the Blocton Cahaba Co., of Alabama, was found dead in bed at his home in Fayetteville, Tenn., Nov. 20. He was buried in Birmingham, Ala.

## Coming Meetings

**Smokeless Coal Operators' Association.** Annual meeting, Dec. 10, at Washington, D. C. Secretary, E. J. McVann, Washington, D. C.

**Coal Mining Institute of America.** Annual meeting, Dec. 9-11, Pittsburgh, Pa. Secretary, H. D. Mason, Jr., P. O. Box 604, Ebensburg, Pa.

**American Mining Congress.** Twenty-eighth annual convention, Dec. 9-11, Washington, D. C. Secretary, J. F. Callbreath, Munsey Bldg., Washington, D. C.

**American Wood Preservers' Association.** Annual meeting, Jan. 26-28, 1926, at Cleveland, Ohio. Secretary, E. J. Stocking, Chicago, Ill.

**Coal Club of Philadelphia.** Annual meeting, Jan. 28, 1926, at the Bellevue-Stratford Hotel, Philadelphia, Pa. Secretary, C. K. Scull, Philadelphia, Pa.

## New Companies

**The Glen Jean Smokeless Coal Co.,** with a capital of $25,000, has been incorporated by J. M. Turner and C. M. Faulkner, both of Huntington, W. Va.

**The Paramount Coal Co.,** of Middlesboro, Ky., a consolidation of the Bellman Coal Co., Winna Coal & Coke Co. and the East Point Coal Co., with a capital of $63,000, has been incorporated by J. L. Manring, W. E. Cabel and R. E. Howe.

**The Coal Creek Co.** has been incorporated in Henryetta, Okla., with a capital of $10,000, by Frank Barrow, J. R. Hopkins and others, and will open a coal mine.

**The North State Coal Company** with a capital of $20.000 has been incorporated by Junius H. Harden and E. L. Henderson.

**The Rock Forge Coal & Coke Co.,** capital $10,000, has been incorporated at Morgantown, W. Va. The incorporators are James Moreland, Preston Road and Robert E. Guy.

**The Sutton Coal & Coke Co.,** capital $25,000, has been incorporated at Sutton, W. Va. The incorporators are J. W. Johnson and Van B. Hall.

**The Payne-Baber Coal Co.** has just been organized and will have its offices in the Union Bank Building at Huntington, W. Va. It is headed by E. J. Payne, formerly of the Lake & Export Coal Corporation. Associated with him is B. C. Baber, well known in the coal trade.

## Association Activities

C. W. Henderson, president, Cambria Coal Mining Co., of Knoxville, Tenn., was re-elected president of the **Southern Appalachian Coal Operators' Association** at the annual meeting in Knoxville Nov. 20. Broadening of the statistical work of the association was authorized. The report of Secretary Howe showed increasing membership and a strengthened position of the local association. Mr. Gandy discussed the work of the National Coal Association on behalf of the industry. J. E. Johnson, secretary, Kentucky Mine Owners' Association, briefly told of the efforts of that association in combating a tonnage tax proposal in Kentucky, inasmuch as quite a portion of the operations of the Southern Appalachian Association is in that state. A meeting of the Southern Appalachian Efficiency Association, an auxiliary of the local operators' association, also was held, at which E. V. Albert, superintendent, and A. G. Hahn, mine inspector, United States Coal & Coke Co., Lynch, Ky., discussed safety efforts. Judge H. B. Lindsay presided as toastmaster at a largely attended banquet at the Cherokee Country Club in the evening, at which there were various entertainment features and addresses.

**The Cincinnati Coal Exchange,** at a meeting Nov. 17, voted to change the constitution so that associate members might be admitted. This matter has been hanging fire since Feb. 5, when Ernie Howe, Fred Legg and George Kearen were appointed a committee to study the move. The Exchange, being a subsidiary, had to have power granted to make the move from the Chamber of Commerce. Then the point arose whether the associate members would be allowed a voting privilege. When this question came up the matter was referred back to the committee. The associate members will not have power to pass upon any questions voted on.

The annual business session of the **Harlan County Coal Operators' Association** at Harlan, Ky., Nov. 18, was well attended. R. C. Tway, after seven years as president, declined re-election and was succeeded by W. A. Ellison, vice-president, Mahan-Ellison Coal Corporation, of Harlan. J. P. Johnson, general manager, Crummies Creek Coal Co., Cawood, Ky., was elected vice-president. Secretary Clayton's report showed the association to be in strong condition. In the afternoon all of the operators and guests were taken on a special train to Lynch, Ky., for inspection of the mine of the United States Coal & Coke Co., which included seeing a combination cutter, conveyor and loader in actual operation. The banquet, which was held in the evening, tested the seating capacity of the largest room in Harlan, Judge H. B. Lindsay, of Knoxville, acting as toastmaster. W. A. Northcutt, of Louisville, Ky., general solicitor of the L. & N. R.R., spoke on the development of the coal industry in Kentucky and Tennessee, and urged close relationship between operators and the road. George W. Malcomson, Detroit, Mich., presdient, Harlan Gas Coal Co., spoke of the necessity for trade extension and service work, and told of the proposed organization of a fuel research institute in Detroit. Executive Secretary Gandy spoke on the work of the National Coal Association and the Congressional situation. George F Neel, Draper, Ky, general manager of the East Harlan Coal Co., on behalf of the local association, presented retiring President Tway with a gold watch.

## Industrial Notes

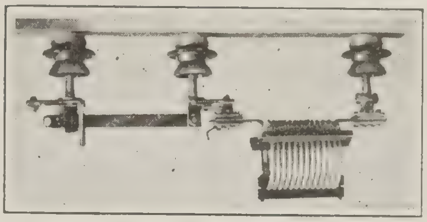
**The Superheater Co.,** of New York and Chicago, announces the appointment of R. L. Ehmann as district manager of its industrial department, with an office at 923 Union Trust Building, Pittsburgh, Pa. The former manager, of the Pittsburgh office, John R. LeVally, has been assigned to special duties with the company and may be reached through the New York office.

The **McGraw-Hill Co.** has purchased the **E M F Electrical Year Book,** published by Electrical Trade Publishing Co., Monadnock Block, Chicago. The 1926 edition, which will be out April 1, 1926, will be edited by the staff of the Electrical Trade Publishing Co. and sold by the staffs of both organizations. Headquarters for the Year Book until completion of the 1926 edition will be at the offices of the Electrical Trade Publishing Co., in Chicago, but information and data may be obtained from men of both organizations. This standard reference book will supplement the service of McGraw-Hill electrical publications by supplying the reference information needed by buyers and specifiers throughout the industry.

# New Equipment

## Protective Units Are Now Simplified

A combination disconnecting switch, fuse, and choke coil, designed to reduce the size and weight of the combined unit as well as the number of insulators required is a new product of the Westinghouse Electric and Manufacturing Co. The possibility of trouble through insulator failures is thus reduced, and a saving in initial and upkeep costs is effected.



Choke Coil and Switch Are Mounted Together

This combined unit, mounted on three insulators, is available for service requiring underhung or slanted insulators.

Insulator assemblies similar to those used with other fixtures are employed with these combinations. These standardized insulator assemblies employ only three-bolt circles for the complete line. Two types of outfits are available, one with underhung and the other with inclined insulators, both of which use the same assemblies for a given voltage rating. The insulators have sanded heads and pin holes which adhere firmly to the cement. All hardware is galvanized and is provided with cupped and ribbed holding surfaces from which the cement cannot slip. The cement, used at both cap and pin, is steam set so that injurious stresses due to temperature changes will be avoided. The combinations are available for all voltages up to and including 110,000 volts.

## Change Over Switch Provides Continuous Service

An automatic change-over switch, that has for its chief application installations where continuity of service is the primary feature, and where interconnected secondaries are not available, has been designed by the Westinghouse Electric and Manufacturing Co. It has a full automatic feature which functions to keep the main contacts on a selected circuit, so long as that circuit is energized, and which assures the operator that his feeder loads are properly distributed under

Makes Quick Circuit Change

A transfer switch such as this automatically connects itself to one energized circuit or another.

normal conditions. Another feature of this switch is that by opening a single-throw knife-switch the main contacts can be thrown from the main to the auxiliary circuit, and by closing the knife-switch the contacts will be returned to the preferred circuit.

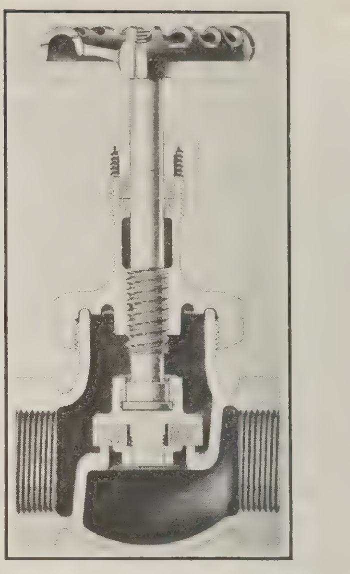
This switch depends for its operation on the action of an undervoltage release coil. The wiring is such that when the voltage fails in the preferred circuit, the low-voltage plunger will fall. This completes the circuit from the instrument transformer on the auxiliary circuit through the drum switch on the shaft of the operating mechanism to the trip coil. The trip coil raises its plunger and allows the main drum to revolve through an arc of 180 deg. This throws the main contacts of the breaker from the preferred circuit to the auxiliary circuit.

In construction this switch, which is essentially a three-pole, double-throw, full automatic oil circuit breaker, with a low-voltage release attachment, is sturdy and compact. The oil tank is lined with micarta, while tubes of the same material protect all incoming and outgoing terminals. The main contacts are of the familiar wedge and flexible finger type and the operating drum, mounted directly above the oil tank, is protected by a dust-proof cover through which a shaft extends. No attention is required by this automatic switch other than the usual monthly inspection.

## Improved Type of Globe And Angle Valves

For working steam pressures at 225 lb. a new line of medium pressure bronze globe and angle valves has recently been placed on the market by Jenkins Bros., of New York. They are designed to meet the need for a valve with a renewable disk that will satisfactorily handle higher pressures than those recommended for the standard pattern.

An important detail of the new valve is the bonnet and union, made in one piece to screw on to the outside of the body thread. This construction affords strength to the body and as the bonnet hexagons are large they allow the bonnet to be easily removed without distortion. Of special interest also is the "ball joint" formed when the bonnet and body are screwed together. This is a new feature and makes a strong, though easily removable joint.



**Cross-Section of New Valve**

Chief advantages of this valve lie in the ball joint between body and bonnet, the large bonnet hexagons, the composition disk, heavy stem and large stuffing box.

These valves are regularly fitted with a composition disk for high-pressure work. This will appeal to those who recognize the superiority of this construction over the metal-to-metal seat. No regrinding is necessary in order to insure a tight valve. The spindle is made of manganese bronze, with large threads which are all in contact when the valve is closed. The stuffing box is deep, affording plenty of room for packing, which is compressed by means of a bronze follower or gland. A ventilated hand wheel of malleable iron is furnished. This line of valves can be had in either the globe or angle type with screwed or flanged ends and in sizes ranging from ¼ to 3 in.

## Trade Literature

**Note the Float.** Sweet & Doyle Foundry & Machine Co., Troy, N. Y. Bulletin No. 8. Four-page folder illustrating and describing the Condensation Eliminator for the removal of entrained water.

**Type M Automatic Change-Over Switch.** Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Leaflet L-20234. Four-page folder outlining the construction, application and distinctive features of this automatic change-over switch.

The Crouse-Hinds Co., Syracuse, N. Y. has issued Folder No. 28 and Bulletin No. 2080 illustrating and describing its **Tumbler Switch Condulets**, especially adapted for switches subjected to severe conditions.

**Midwest Air Filters, Inc.** and **Midwest Steel & Supply Co. Inc.**, have moved their Headquarters from New York City to Bradford, Pa., effective Nov. 7. This move is simply to concentrate all effective personnel at the factory proper, in order to consolidate organization, eliminate duplicate effort, and maintain a closer control of company activities. A branch sales office will be maintained in New York at 100 East 45th Street.

**Engineering, Surveying and Mining Instruments.** C. L. Berger & Sons, Inc., Boston, Mass. Pp. 194; 6 x 9 in.; illustrated. 40th edition. Describes its monitor transits and levels.

**Foxboro.** The Foxoboro Co., Inc., Foxboro, Mass. Bulletin No. 96-1. Pp. 24; 4 x 9 in.; illustrated. Describes the different types of indicating, recording and controlling instruments made by this company.

**Power Shovel.** The Osgood Co., Marion, Ohio. Bulletin 2514. Pp. 11; 8½ x 11 in.; illustrated. This shovel, designed for operation by gasoline or oil engine, or by electric motor, is described and pictures of it in operation are shown.

**Materials Handling.** Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa. Motor Application Circular 7378. Pp. 29; 8½ x 11 in.; illustrated. This booklet is divided into two sections, the first one covering the principal groups of material-handling machines, and the second describing the various types of electrical equipment that this company has developed for material-handling machinery.

**Superior Speed Reducers for Every Service.** De Laval Steam Co., Trenton, N. J. Pp. 16; 6 x 9 in.; illustrated. Describes the many operations in which the De Laval worm reduction gear is used.

The Allis-Chalmers Mfg. Co., Milwaukee, Wis., recently issued the following bulletins: Bulletin No. 1228, describing and illustrating its **Allis Texrope Drive**; bulletin No. 1823, covering its **Crushing Rolls**, and bulletin 1123, describing its **Polyphase Induction Motors.** These bulletins are all 8 x 10½ and well illustrated.

The Griscom-Russell Co., 90 West St., New York City, recently issued a four-page folder, designated as form 411, on **Heat Transfer Equipment.**

## Recent Patents

**Process of Preparing Fuel for Briquetting**; 1,551,966. Paul C. Mulligan and Herbert G. Swalwell, Seattle, Wash. Sept. 1, 1925. Filed Nov. 14, 1923; serial No. 674,704.

**Method of Separating Ash from Coal by Flotation**; 1,552,197. Lindell T. Bates, Mount Lebanon, N. Y. Sept. 1, 1925. Filed March 21, 1921; serial No. 454,195.

**Miner's Lamp**; 1,552,218. Joseph Menapace, Latuda, Utah. Sept. 1, 1925. Filed Jan. 3, 1924; serial No. 684,211.

**Mine-Car Truck**; 1,552,542. Robert J. Colson, St. Louis, Mo. Sept. 8, 1925. Filed July 3, 1924; serial No. 723,920.

**Mine Car**; 1,552,571. Hugh W. Sanford, Knoxville, Tenn. Sept. 8, 1925. Filed March 10, 1924; serial No. 698,221.

**Coking Process and Product**; 1,553,641. Frederick W. Sperr, Jr., Pittsburgh, Pa., assignor to the Koppers Co., Pittsburgh, Pa. Sept. 15, 1925. Filed July 18, 1919; serial No. 311,811.

**Multiple Chute Coal and Slate Separator**; 1,552,166. Charles H. Hutchison, Knoxville, Tenn. Sept. 8, 1925. Filed Aug. 19, 1924; serial No. 732,997.

## Publications Received

Proceedings of the eighth regular meeting of the Atlantic States Shippers Advisory Board. Pp. 99; 7½x10½ in.

**Coils and Magnet Wire**, by Charles R. Underhill. McGraw-Hill Book Co., Inc., New York City. Price, $4. Pp. 494; 6x9 in.; illustrated. A practical book on the principal classes of coils and the magnet wires from which they are constructed.

**Report of the United States Coal Commission**, in five parts. Part I, Principal Findings and Recommendations; pp. 314, with index covering the five volumes. Part II, Anthracite—Detailed Studies; pp. 715; illustrated. Part III, Bituminous Coal—Detailed Labor and Engineering Studies; pp. 959; illustrated. Part IV, Bituminous Coal—Detailed Studies of Cost of Production, Investment and Profits; pp. 725; tables. Part V, Atlas of Statistical Tables; pp. 516. These books are all 6x9 in., except Part V, which is 9x13½ in.

**The Mineral Industry** — Vol. XXXIII, 1924, edited by G. A. Roush and Allison Butts. McGraw-Hill Book Co., Inc., New York City. Price, $12. Pp. 887, 6x9 in. Contains the latest technology in all fields and statistics of production of all commercially important minerals.

**Annual Report of the Smithsonian Institution** for year ending June 30, 1924. Pp. 535; 6x9 in.; illustrated.

**Mainsprings of Men**, by Whiting Williams. Charles Scribner's Sons, New York City. Price, $1.50. Pp. 313; 5½x8 in.; illustrated. A statement of what the author has learned from his experience as a worker in four countries.

**The Ruhr-Lorraine Industrial Problem,** by Guy Greer, with the aid of the Council and staff of the Institute of Economics. The Macmillan Co., New York City. Price $2.50. Pp. 328; 5x7½ in.; tables.

**Annual Report of the Director of the Bureau of Mines** to the Secretary of the Interior for Fiscal Year Ended June 30, 1925. Pp. 70; 6x9 in.

**Further Contributions to the Geology of the Allendale Oil Field, with a Revised Structure Map,** by Gail F. Mounton. State Geological Survey, Urbana, Ill. Report of Investigations No. 7. Pp. 27; 6x69 in.; illustrated.

COAL AGE

McGraw-Hill Company, Inc.
James H. McGraw, *President*
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Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. Dawson Hall
*Engineering Editor*

Volume 28 NEW YORK, DECEMBER 10, 1925 Number 24

## The President Writes a Blank Check

THE ADMINISTRATION PROGRAM on coal, as outlined in the President's message to Congress this week, offers nothing new or novel. For guidance in dealing with an industry which already "has been the subject of repeated investigation and reiterated recommendation" President Coolidge presents a restatement of the position he took in his message on the same subject two years ago. Such differences as exist between the two documents are largely differences in phraseology, not differences in ideas. Price is no longer specifically mentioned, but protest is again registered against a legislative status which leaves the national government "so powerless that its only attitude must be humble supplication" in times of emergency.

The President, as in 1923, ventures a non-committal indorsement of the conclusions of the Hammond coal commission. The report of that body, he tells Congress, "should be brought forward, reconsidered and acted upon." Only two recommendations of the many made by the commission, however, have been emphasized in the President's message. These are emergency control and regional consolidations. Into the latter, the President reads a need for "more freedom in the formation of marketing associations, under the supervision of the Department of Commerce." On the key to the control recommended by the Hammond fact-finding agency—the creation of a coal division within the Interstate Commerce Commission—the President is silent.

In an official pronouncement so broad in its implications, so meager in particularization, it is impossible to determine just where the national administration stands. A meticulous critic might ask for a definition of "modern methods of adjusting differences between employers and employees" before subscribing to the opinion that present management "is very close to a national economic failure." He might point to the acrimonious wrangling over railroad consolidations since the merger clauses were written into the Transportation Act of 1920 as proof that bureaucratic acceleration of combinations is not an infallible substitute for economic laws. And the possibilities of academic discussion of the pitfalls of emergency control to bring recalcitrant labor to a sense of its public responsibilities are almost limitless.

But, in the absence of a clear-cut, definite program for dealing with these questions, such discussion must be largely futile. It is this absence of clear-cut, definite, detailed proposals, however, which makes the situation created by the President's message dangerous to the coal industry and to the nation. We cannot come to grips with realities because the message is vague. It may mean anything, everything or nothing. That indefiniteness is the politician's opportunity. The Borahs, the Oddies, the Treadways and the Blacks can bring in bills embodying almost anything short of nationalization—and who can say that their ideas are or are not consonant with the Coolidge program?

Nothing illustrates better the tremendous problems involved in coal than the indefinite character of the President's message. Mr. Coolidge has undoubtedly had the advice of men who have given close study to the situation. Nevertheless, despite this counsel, the President is not ready to present a definite program. It reveals a spirit of caution which might well be emulated in other quarters.

## Leisure or the Forward Step?

NOBODY CAN TELL what the anthracite miners really want. They are asking for more pay, it is true, but they could have had that at any time by working more hours or more steadily and that without arriving at an eight- or even a seven-hour day.

So it appears that they want the same pay at less hours or less effort. If that is the case most of the plans for greater efficiency that the mechanical engineers are urging and which are based on intensive effort and a full eight hours of work would not afford the miner just that for which he is striking. Perhaps, however, the strike is neither for wages nor for leisure but for that "forward step" which the anthracite mine workers, like labor in general, are always desiring. There are, however, natural limits to such progress.

## The Last Ounce of Energy

FOR THE PREVENTION of accident and breakage of material we have introduced factors of safety. We don't demand the last ounce of our ropes or of our metal parts, but why not have a factor of safety for our locomotives and motors? Why load them to the limit? To avoid some of such excessive loading we have fuses and circuit breakers, but why reach such loads as burn fuses and throw out breakers? The better way is to keep well within such loads so as to keep the machines continuously in operation.

It is best to arrange that no more than a certain number of coal-loaded cars and a certain number of rock-laden cars be hauled in a trip, not for safety but for certainty of operation. No plant is running with assurance if it is using the last ounce of its available effort. The factor of certainty of operation is almost as important as the factor of safety. Those who expect to get a given tonnage day by day cannot afford to neglect it. Some foremen believe in making every trip the largest load the locomotive can haul—the lazy man's load—but a better plan is to go more often to the sidetrack and to haul the coal without interruption. If a bad grade interferes with movement the demand for power should not be increased. Instead the load should be eased if it can be done by a better grade.

At one mine where there were twenty-one locomotives, requisition was made for two more. Instead of complying with the requisition an inquiry was made. It was found by lessening the number of cars behind some of the locomotives they could be assured against stalling and consequently could make more trips, hauling more coal than ever.

Many managers fix a limit on the length of trips to avoid slow speed, stops, circuit breaking, fuse burning and whatnot, and when they can't safely fix the length of trip to suit their ideas they scan the grades which are making the trouble, and with a night force correct the annoying restriction. The stupid waste of time on short hills is one of the aggravating features in much mining practice. What we need is not so much a boss driver as a traffic master with ideas and imagination and in a large mine a train dispatcher working under him.

## Quality of Coal

A DEALER in high-grade products has a standing in the community as excellent as his goods. A cheap-John, a maker of honest goods perhaps but of low quality for those who are willing to accept a low standard, has a low reputation among his fellows. A man whose goods are brummagem has a repute as low as his products.

Consequently, the coal industry, if it would establish itself, must seek to attain a reputation for producing a high-grade commodity. It must not try to pass off just what the public is accustomed to or may be induced to take. Standards must be higher. What does a man do when he finds that a tool he has bought curls at the edge? Does he say that iron will curl and remain satisfied or does he declare that the tool should be of steel of such quality that good work can be gotten from it?

None of us wants poor goods. Why then will some men try to sell them? In any attempt to be favorably regarded by the public eye, clean coal is one of the first steps, just as the manufacture of hard and durable steel is the first step that a tool-steel manufacturer takes to establish his reputation. This seems elementary reasoning, but with some coal operators it has not sunk deeply enough. Some are glad that other coals are dirtier than theirs because that fact helps sales. It's true it does, but the unfortunate fact is that the poor coal on the market, which aids the sales of clean coal, spoils the reputation of every coal producer and of the entire industry.

## Everybody's Business

SO UNIVERSALLY are we moved by self-interest that the man, unless he is paid for his action, who tells another what he should do to protect a third party is said to be meddling. So perhaps it is just as well that the fatalities due to coal dust and gas have so interested and excited the public that a mine operator who enforces safety practices now without censure can criticise his lax neighbors on the ground that they are laying not only their own but all mines open to the liability of government regulation and to reprobation of the public which will make the conduct of the coal business difficult.

Sentiment ought to be rampant in regard to rock dusting. The man who delays it or does it in a niggardly manner and the man who does not do it should be put on an attitude of defense not only as against the mine inspector but as against the operators in his field and every other field. It is not a matter to meditate on and discuss and leave for a later date. Let every operator who hasn't a dusting machine dust his mine with a shovel till he can get the necessary equipment. There is no valid reason for delay. It will be a crowning disgrace if a single dust explosion occurs this winter, and the man who has it will be putting the coal-mining industry before the public in the worst possible guise.

We may not be able to improve loading practice in a single year or two or even three, but we can mobilize for rock dusting in a few weeks. It was a truly sorry tale Captain Steidle told at the West Virginia Coal Mining Institute. We have done so little, as he showed, to make our mines immune since the movement got well started by the passing of the Utah regulations.

This rock dusting is everybody's business. The trade associations would do well to take it up, and the institutes. The industry should show itself a unit in putting this form of safety over. It is one of the first factors in better public relations.

## The Cool of the Mine

SOMETHING IN MINES is attractive, or underground mine workers would not be so unwilling to accept surface work. That thing is the cool air. If the surface worker were as well protected against heat as the worker in the coal mines, only the wage would be alluring in coal mining.

It will not be long, however, before the office and even the home will be kept, if not as cool as the mine, at least as comfortable and free from excessive heat. At the Luray Cavern, a show place in Virginia, a sanitarium was built on the hill and connected with pipes that ran down to the cave. The escaping air kept the sanitarium cool through the long summer days. Today the house, no longer a sanitarium, is cooled in the same way.

Under the city of Chicago are a series of tunnels used for freight and wires. These tunnels are cool at all times, and for a while some of the motion picture houses were kept cool with the effluent air from these tunnels.

The mines in the future will be the means by which the homes, hospitals and motion picture houses will be kept cool, but not with the cool air of the excavations. Coal will furnish the power which sets the refrigeratory machinery in operation. That such coolness is appreciated is well illustrated by the remark of a woman whose husband was a sewer digger. He came home late one night for dinner and she objected. "Here am I," said she, "moilin' all day over this stove agettin' of your meals, and you down in that nice cool sewer!" There are compensations in coolness and, let the coal trade be well advised, profit also. The coolness of the mine is a suggestion for future expansion in coal demand.

RESILIENCE MAY BE MORE IMPORTANT than hardness in resisting wear. Thus rubber is giving good service in ball mills, and in pump impellers. It has done excellent work as elbow parts in pipe lines delivering concrete where manganese steel and cast iron failed. Perhaps we shall come to the use of rubber, soft or hard, for chutes, launders and flushing pipes in back filling.

# Good Power Factor Conditions Always Serve to Lower Capital Charges and Energy Costs

## Careful Selection of Apparatus Is Most Necessary—Corrective Equipment Now Available Permits Power Devices to Carry Larger Loads and Reduces Bills—Applications of Synchronous and Static Condensers

**By Edgar J. Gealy**
Associate Editor of *Coal Age*,
New York City

WHETHER A COAL COMPANY generates its own electrical energy or purchases it, good power factor conditions on its lines are always desirable and economical. Where poor power factors exist excessive capital must be laid out to carry idle currents. Wires, poles, insulators, crossarms, switches, transformers and motors must be of larger capacity than would be required if the power factor were good.

From an operating point of view serious difficulties arise because of high circulating wattless currents; voltage regulation becomes bad, line drops are large, motors will not develop their rated torque, switches and fuses needlessly interrupt service, conductors get hot and high maintenance costs result.

Many coal companies have given the question of power factor correction but little attention. This is either because they generate their own power or purchase it from a utility company which has not seen fit, as yet, to enforce the penalty clause which is no doubt in all its power schedules.

These difficulties and costs produced by poor power factors may exist either with coal company generated energy or custom power purchased without a penalty charge. Whatever expense is added to the power bill when the penalty clause is enforced is really an additional cost.

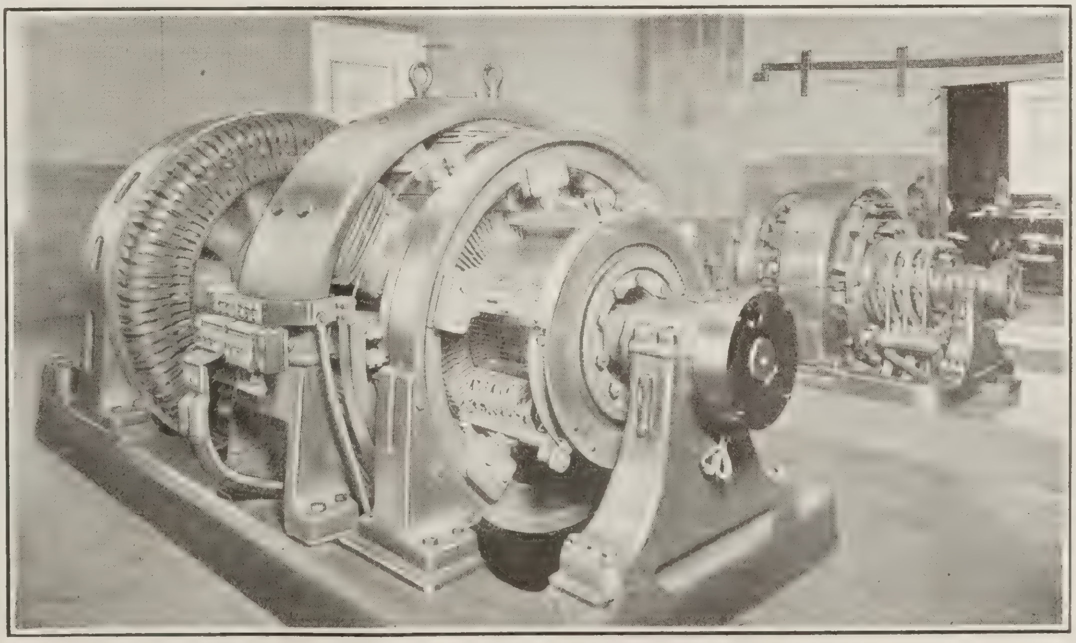
A penalty charge upon a power bill is perfectly reasonable and justifiable from the power company's point of view. Wattless currents necessitate capital investments in power plants, generators, wires, transformers, etc., which earn no income unless a special charge is made. Ordinary meters do not register wattless current; the idle current does not turn their elements.

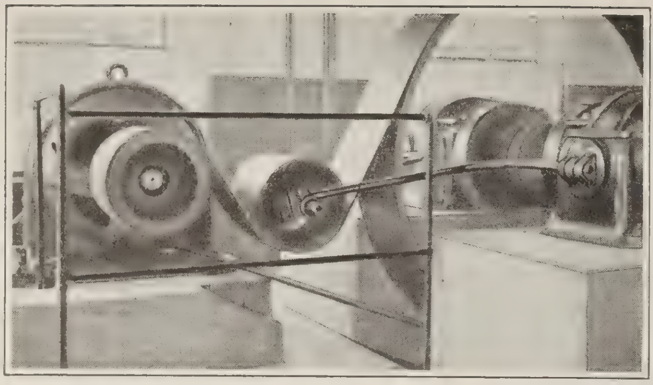
Obviously, if the power company's penalty charge is justifiable, because of the additional investment in equipment thus made necessary, the user of power has an added expense due to this same wattless current circulating in his apparatus. In fact, this matter is more serious to him because it affects his production also. For example, if an induction motor receives 10 per cent less than normal voltage, because of poor power factor conditions, its torque is reduced nearly 20 per cent and it can do less work. A larger size motor to replace this one would require more capital and in fact, when applied to the load would aggravate the condition.

Power customers who buy energy under a schedule with no penalty clause actually do pay for having poor power factor loads. This they may not know but, nevertheless, it is true. Great improvements have been made lately in the processes involved in the generation, distribution and sale of public utility energy. All of these advantages have not been reflected in reduced power rates. Rather than enforce a penalty clause for poor power factor many power companies have chosen to let the customer pay this charge, perhaps unknowingly, in an energy rate which has not completely reflected the improvements made in power plants.

**Near the Cause**

The motor-generator set in the foreground has a 440-volt synchronous motor. It receives its supply from the low-voltage side of a bank of transformers which feeds the induction motor load of the Baker breaker of the Glen Alden Coal Co. Thus the leading current taken by this unit counterbalances the lagging current of the breaker motors.





**Units in All-Day Service Are of Great Value for Corrective Purposes**

A small synchronous motor is shown here driving an air compressor at a mine of the Hillside Coal and Iron Co., in Forest City, Pa. Units like this one though small do much to correct lagging currents of hoist motors which must be of the induction type.

Power factor correction begins with the prevention of conditions which produce high wattless currents. When laying out or surveying an electrical system with the idea of obtaining good power factor operation the following points should be considered:

(1) At nearly all mines certain types of loads lend themselves equally well to either direct-current or alternating-current motor drive. Under some circumstances instead of using an induction motor, it may be advisable to select a direct-current motor which receives power through a synchronous motor-generator set or rotary converter. Whenever there are no serious drawbacks to this arrangement, the possibility of obviating at least some inductive load presents itself right here.

(2) In the selection of an induction motor its power factor characteristics should be given careful consideration. The type and design of the motor should be such that it will meet the load conditions and at the same time operate at high efficiency and good power factor, especially at its normal load. High-speed induction motors have the best power factor characteristic curves.

When calculating or otherwise determining the size induction motor required for a given service it is always desirable, consistent with load and operating conditions, to select a motor which is no larger than properly required. Induction motors operate at their highest efficiencies and best power factors at or near full load. Hence, if a load is over-motored it necessarily operates at an efficiency and power factor which is less than the best obtainable.

(3) A synchronous motor should, in general, be applied to all loads which can be driven successfully by this type of unit. It may even be advantageous at times to adopt special means or devices to make the use of this type of motor possible.

(4) The use of special type machines such as combination induction- and synchronous-motor units should be considered. Motors and devices of this nature are rapidly becoming standardized.

(5) Transformers should be selected with the same care as induction motors. Because transformers usually are permanently connected to their lines, considerable reactive-current hours may be registered by them.

(6) The synchronous condenser may be applied either to prevent poor power factor conditions or to correct the power factor of a line. In the first instance it would probably be designed to carry a mechanical load, while in the second case it may be floated on the line and merely supply leading current.

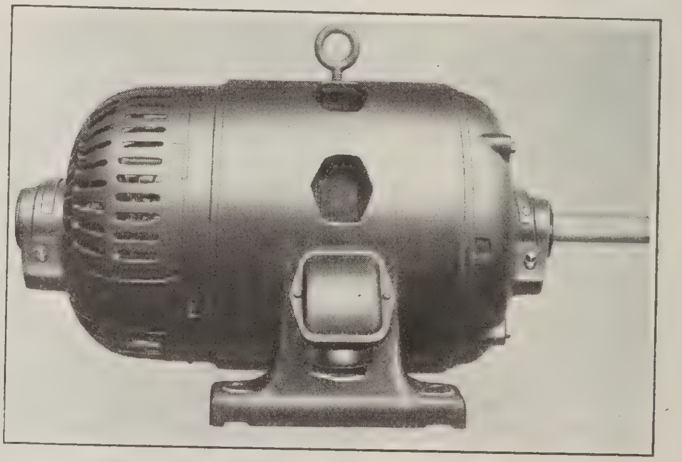
(7) Static condensers generally perform no other function than the correction of poor power factor conditions.

Oftentimes the design and operating conditions of a mine hoist permit the use of an induction motor drive or a direct-current drive. In such instances here is an opportunity to consider the desirability of selecting an induction motor with its high inductive current or a direct-current motor receiving power through a synchronous motor-generator set or a rotary converter.

Again, the haulage system of a mine nearly always necessitates the use of direct-current locomotives. When the feeders are properly designed and other conditions satisfactory it may at times be advisable to operate mine pumps, small hoists, air compressors, coal cutters, etc., by direct-current energy supplied through a motor-generator set or rotary converter rather than by alternating-current induction motors.

The best motor for a given duty is usually that type which gives the greatest reliability, has suitable torque, good speed characteristics and the highest efficiency. The induction motor has these characteristics and is exceptionally low in price. It, however, possesses a disadvantage in that it draws a large lagging current from its supply line. This reactive current is almost as large at light loads as at full load. The data in the accompanying table makes this fact quite clear. If the motor is applied to a constant load equal to its full load capacity, the power factor will be maximum at all times. It is apparent however, that the ratio of the reactive current to the energy component increases under light loads and consequently the power factor becomes low. The selection of the proper induction motor, therefore, plays an important part in obtaining a good power factor for a plant or power system.

Synchronous motors are designed to operate at unity power factor or leading power factor. When applied to a circuit having a lagging power factor, the resulting power factor is always nearer unity than before. Synchronous motors may be designed for the purpose of carrying full capacity mechanical load or any percentage of mechanical load to none at all. Obviously, a machine designed for the purpose of carrying a high reactive current and no mechanical load is of lighter construction than one built to drive machinery.



**A Motor Combining Two Types Has Been Built**

This relatively new type motor embodies the characteristics of an induction motor and a synchronous motor. At normal loads it is a synchronous unit, but while being started and when highly overloaded it acts like an induction motor.

All types of synchronous motors have their fields of application depending upon the conditions to be met and the results to be obtained. Slow-speed synchronous motors generally are designed to operate at unity power factor. This is because the increased cost of material and lower efficiency resulting by making these slow-speed types suitable for leading power factor become governing considerations.

High-speed synchronous motors may more economically be designed for leading power factor service. These motors are highly recommendable because they provide a means of adding both mechanical load and obtaining power factor correction at the same time. In nearly all power systems a high power factor load does more to correct a lagging power factor condition than large purely reactive capacities provided by synchronous machines floating on the line and not carrying any mechanical load.

Standard synchronous condensers usually are designed to carry mechanical loads up to 70 per cent of their kilovolt-ampere rating. Such a motor when used in this manner provides maximum economy as to first cost of mechanical motor capacity and also as to leading reactive kilovolt-ampere capacity.

Synchronous motors should usually be operated with their field excitation set to correspond with the full rating of the machine. If this is done the reactive capacity will become proportionately more favorably effective at loads less than full. The power factor characteristics of a synchronous motor are in general as shown in Fig. 1. Within certain limits the load at which unity power factor is attained can be increased or decreased by adjusting the excitation of the field. When the machine operates at loads less than that at which unity power factor is attained it takes a leading current, while at higher loads it takes a lagging current and as the load is further increased the power factor characteristic becomes similar to that of an induction motor.

A synchronous converter or rotary converter, as it is sometimes called, lends itself less readily to power factor correction than a synchronous motor because its field can be varied between narrow limits only. Attempting to operate beyond definite limits upsets the balance of the machine and causes serious operating difficulties.

No doubt one of the main reasons why the synchronous motor has not been more generally used, until recent years, is that many of its characteristics are not thoroughly understood. Some of its inherent advantages, nevertheless, embody just those qualities which many electrical men have been seeking. For example, under low voltage conditions, the reactive kilovolt-ampere capacity available for improvement of power factor increases; whereas, under conditions of high voltage the leading reactive kilovolt-ampere capacity available for power factor correction automatically decreases. At abnormally high voltages a synchronous condenser might actually draw a lagging current from the line

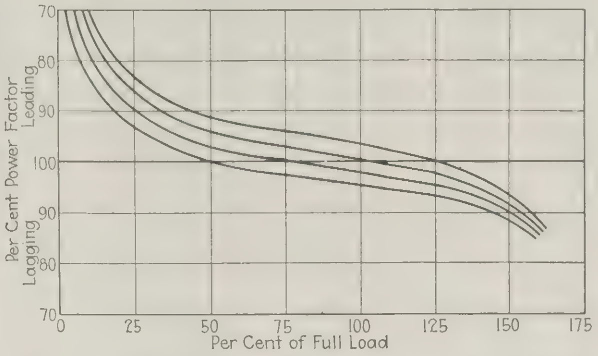
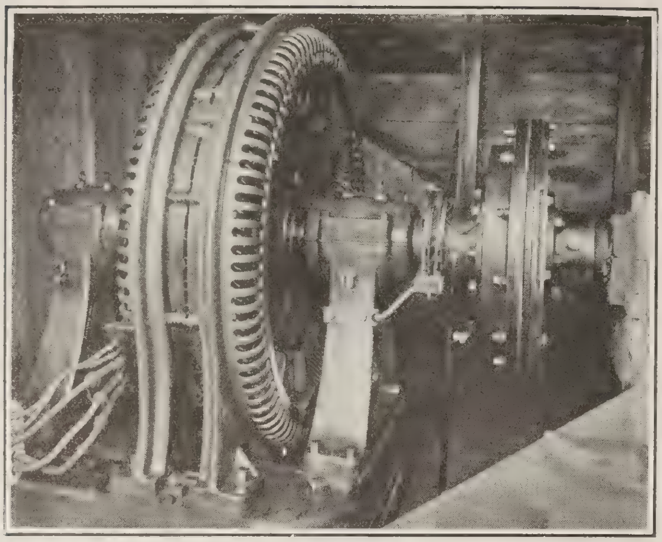


**Fig. 1—Power Factor Characteristic of Synchronous Motor Leads and Lags**

These curves show the approximate shape of the power factor curves of a synchronous motor. Depending upon the field current applied, the motor may operate with leading current until the load reaches any predetermined value. Ordinarily a synchronous motor should be supplied with nearly full field excitation so that it will take a leading current most of the time and thus aid materially in correcting power factor.

### Characteristics of Three-Phase 60-Cycle Motors

| Horse-power | Speed in R.p.m. | Volts | Full Load Eff. | Full Load P.F. | Kva. Input | Approximate Reactive Kva. Full Load | Approximate Reactive Kva. No Load |
|---|---|---|---|---|---|---|---|
| ½ | 1,200 | 220-440-550 volts. | 73 | 65 | 0.786 | 0.596 | 0.51$^7$ |
| | 900 | | 69 | 49 | 1.10 | 0.956 | 0.84$^6$ |
| ¾ | 1,800 | | 80 | 79 | 0.885 | 0.543 | 0.46$^4$ |
| | 1,200 | | 76 | 72 | 1.02 | 0.708 | 0.60$^8$ |
| | 900 | | 75 | 59 | 1.27 | 1.02 | 0.99 |
| 1 | 1,800 | | 82 | 80 | 1.14 | 0.681 | 0.56$^7$ |
| | 1,200 | | 79 | 75 | 1.26 | 0.832 | 0.70$^6$ |
| | 900 | | 77 | 70 | 1.38 | 0.986 | 0.84$^8$ |
| 1½ | 1,800 | | 85 | 85 | 1.55 | 0.820 | 0.66$^5$ |
| | 1,200 | | 81 | 77 | 1.79 | 1.13 | 0.95 |
| | 900 | | 79 | 68 | 2.09 | 1.53 | 1.32 |
| 2 | 1,800 | | 85 | 86 | 2.03 | 1.038 | 0.83 |
| | 1,200 | | 84 | 82 | 2.16 | 1.235 | 1.02 |
| | 900 | | 81 | 70 | 2.63 | 1.87 | 1.61 |
| 3 | 1,800 | | 86 | 88 | 2.95 | 1.40 | 1.10 |
| | 1,200 | | 85 | 83 | 3.16 | 1.78 | 1.46 |
| | 900 | | 82 | 73 | 3.74 | 2.55 | 2.18 |
| | 1,800 | | 87 | 89 | 4.82 | 2.19 | 1.71 |
| | 1,200 | | 86 | 86 | 5.04 | 2.57 | 2.07 |
| | 900 | | 85 | 77 | 5.71 | 3.64 | 3.07 |
| | 720 | | 82.5 | 73 | 6.19 | 4.23 | 3.61 |
| | 600 | | 83.5 | 70 | 6.37 | 4.54 | 3.90 |
| 7½ | 1,800 | | 88 | 90 | 7.06 | 3.07 | 2.36 |
| | 1,200 | | 88 | 87 | 7.30 | 3.60 | 2.87 |
| | 900 | | 86 | 77 | 8.44 | 5.38 | 4.54 |
| | 720 | | 85.5 | 75 | 8.72 | 5.76 | 4.89 |
| | 600 | | 85.5 | 67 | 9.75 | 7.24 | 6.26 |
| 10 | 1,800 | | 89 | 91 | 9.20 | 3.82 | 2.90 |
| | 1,200 | | 88 | 88 | 9.61 | 4.56 | 3.60 |
| | 900 | | 86.5 | 81 | 10.61 | 6.23 | 5.17 |
| | 720 | | 87 | 77 | 11.10 | 7.10 | 5.99 |
| | 600 | | 85.5 | 74 | 11.88 | 8.00 | 6.81 |
| 15 | 1,800 | | 90 | 91 | 13.6 | 5.64 | 4.28 |
| | 1,200 | | 89 | 87 | 14.5 | 7.14 | 5.69 |
| | 900 | | 87.5 | 84 | 15.2 | 8.24 | 6.72 |
| | 720 | | 86 | 84 | 15.5 | 8.40 | 6.85 |
| | 600 | | 86.5 | 74 | 17.4 | 11.8 | 10.06 |
| 20 | 1,800 | | 89.5 | 88 | 19.0 | 9.0 | 7.1 |
| | 1,200 | | 89 | 86 | 19.5 | 9.96 | 8.01 |
| | 900 | | 90 | 84 | 19.8 | 10.7 | 8.72 |
| | 720 | | 87.5 | 83 | 20.6 | 11.48 | 9.42 |
| | 600 | | 86 | 81 | 21.5 | 12.6 | 10.45 |
| 25 | 1,800 | | 90 | 91 | 22.8 | 9.46 | 7.18 |
| | 1,200 | | 89 | 89 | 23.6 | 10.72 | 7.30 |
| | 900 | 220-440-550 volts. | 90 | 85 | 24.4 | 12.9 | 10.46 |
| | 720 | | 89 | 83 | 25.3 | 14.1 | 11.57 |
| | 600 | | 89 | 83 | 25.3 | 14.1 | 11.57 |
| 30 | 1,800 | | 89 | 90 | 28.0 | 12.2 | 9.40 |
| | 1,200 | | 89.5 | 90.5 | 27.6 | 11.7 | 8.94 |
| | 900 | | 89 | 88 | 28.6 | 13.6 | 10.74 |
| | 720 | | 88 | 86 | 29.5 | 15.05 | 12.10 |
| | 600 | | 88 | 84 | 30.2 | 16.4 | 13.38 |
| 40 | 1,800 | | 89.5 | 91 | 36.7 | 15.2 | 11.53 |
| | 1,200 | | 89 | 91 | 36.9 | 15.3 | 11.61 |
| | 900 | | 89.5 | 88 | 38.0 | 18.0 | 14.20 |
| | 720 | | 88.5 | 88 | 38.4 | 18.2 | 14.36 |
| | 600 | | 89 | 84 | 39.9 | 21.7 | 17.71 |
| 50 | 1,800 | | 90.5 | 92 | 44.7 | 17.6 | 13.13 |
| | 1,200 | | 90 | 91 | 45.5 | 18.8 | 14.25 |
| | 900 | | 89.5 | 89 | 46.6 | 21.2 | 16.54 |
| | 720 | | 89 | 88 | 47.6 | 22.6 | 17.84 |
| | 600 | | 88 | 82 | 51.7 | 29.6 | 24.43 |
| 60 | 1,800 | | 90 | 93 | 53.4 | 19.6 | 14.26 |
| | 1,200 | | 90 | 89.5 | 55.5 | 24.8 | 19.25 |
| | 900 | | 90 | 90 | 55.2 | 24.0 | 18.48 |
| | 720 | | 89.5 | 86 | 58.1 | 29.6 | 23.79 |
| | 600 | | 89 | 84 | 59.8 | 32.4 | 26.52 |
| 75 | 1,800 | | 91 | 93 | 66.1 | 29.3 | 22.69 |
| | 1,200 | | 90 | 91 | 68.3 | 28.3 | 21.47 |
| | 900 | | 90 | 90 | 69.1 | 30.0 | 23.09 |
| | 720 | | 89.5 | 88 | 71.0 | 40.6 | 33.50 |
| | 600 | | 89.5 | 85 | 73.5 | 38.8 | 31.45 |
| 100 | 900 | | 90.5 | 91 | 90.4 | 37.5 | 28.46 |
| | 720 | 220-440-550 volts. | 90.5 | 88 | 93.6 | 53.6 | 45.24 |
| | 600 | | 90.5 | 85 | 96.8 | 51.1 | 41.42 |
| 125 | 900 | | 91 | 89 | 115 | 52.4 | 40.9 |
| | 720 | | 89.5 | 89 | 117 | 53.3 | 41.6 |
| | 600 | | 91 | 84 | 122 | 66.2 | 54 |
| 150 | 900 | | 90.5 | 91 | 136 | 56.4 | 42.8 |
| | 720 | | 91.5 | 89 | 137.5 | 62.6 | 48.85 |
| | 600 | | 90 | 88 | 142 | 81.0 | 66.8 |
| 200 | 720 | | 91 | 89 | 184 | 83.8 | 65.4 |
| | 600 | | 91 | 89 | 184 | 83.8 | 65.4 |
| | 450 | | 90.5 | 82 | 201 | 115 | 94.9 |
| | 360 | | 90.5 | 82 | 201 | 115 | 94.9 |



**Slow-Speed Motor Drives Breaker Machinery**

Here is a breaker motor used by the George F. Lee Coal Co. to help reduce the power bill. The motor is started under no load and then connected to the equipment which it drives by means of a magnetic clutch.

and thus hold down the line voltage. Such action tends to stabilize line pressures.

The pull-out torque of synchronous motors varies directly with the voltage, although, under starting conditions the starting torque and pull-in torque vary as the square of the voltage, being similar in this respect to an induction motor. This latter characteristic is easy to understand when we remember that nearly all synchronous motors are started by the use of windings, incorporated in their design, similar to those on an induction motor.

### Advantages of Synchronous Motor

Aside from the benefits of power factor correction possible with a synchronous motor, it has several other advantages. Slow-speed synchronous motors are generally more economical in operation and less expensive than slow-speed induction motors. For certain kinds of service such as on air compressors, motor-generator sets or processes necessitating uniform speed the synchronous motor is especially suitable.

Synchronous motor-generator sets supplying direct current for mine service are highly desirable. They maintain constant speed and hence good direct-current voltage regulation. A rotary converter applied to service with an unvarying load, but rarely found at coal mines, is more efficient and probably less expensive in first cost but its characteristics are such that flexibility of operation to obtain power factor correction is limited.

A compound wound synchronous converter, such as is used in mining service, is designed to operate at unity power factor between the limits of full load and three-quarter load. For mining service it has a serious disadvantage, realized more and more, in that the direct-current voltage varies in proportion to the alternating-current supply voltage. With the synchronous motor-generator set the generator speed is always constant and the direct-current voltage is independent of any alternating-current voltage fluctuations.

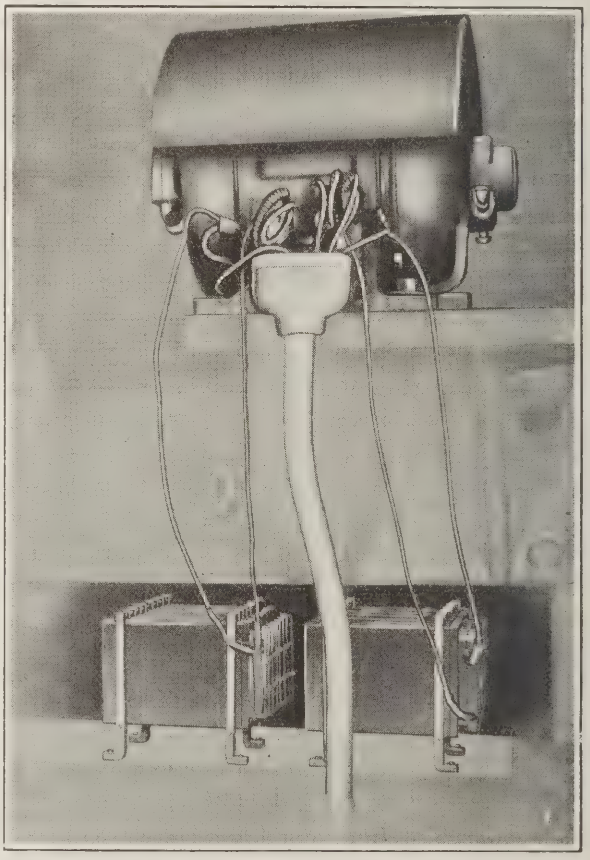
Heretofore it generally has been thought that the synchronous motor is applicable only to operations or machines requiring constant speed and infrequent starting, also to loads with low starting and pull-in torques. In many cases this is true, but improvements in motor design, in magnetic clutches and other auxiliary starting devices have greatly broadened the usefulness and application of synchronous motors.

To meet the increasing demand and necessity for those qualities possessed only by synchronous motors, many different types of special motors have lately been designed. Some of these machines are combination types embodying both induction- and synchronous-motor characteristics. Another type is the commutating alternating-current motor. Some of the most successful new motors are types designed with a clutch of some kind so that the high pull-out torque of a synchronous motor can be used during starting service.

### Transformers Exert Influence

It has been believed generally that transformers exert little influence upon power factor conditions. This is not true and becomes most apparent when the customer purchases power upon a schedule which permits the power company to increase its rate by means of a power factor clause in its contract.

Ordinarily, the magnetizing current supplied to a bank of transformers is relatively small but when we consider the fact that transformers usually are connected to the lines the full 24 hr. of every day, the total reactive current hours passing through them becomes exceedingly large in the period of a month. Over-transformered loads are to some degree in the same category as over-motored loads. In cases where three single-phase transformers are too large for the load it may prove advantageous to operate only two of them at a time, connecting them in open delta. In this manner both the no load losses and magnetizing current may be appreciably reduced.



**Compensate for Lagging Currents at the Source**

The closer a static condenser is applied to the place where lagging power factors are originated the better becomes its service because correction is accomplished before wires, switches and transformers are loaded with idle current.

The lagging current taken by a transformer may be only 5 per cent of the full load current, but when we consider that the load factor of most mine equipment is low, the magnetizing current ampere hours become proportionately much larger than 5 per cent of the average power load upon them.

After everything possible has been done in the selection of equipment, that is, proper size motors have been applied, transformers have been carefully selected and the opportunities for the use of synchronous motors have been exhausted, etc., it is first of all necessary to see that such equipment is operated to give the best power factor conditions. Then if further power factor correction is necessary attractive results can be obtained by the use of synchronous condensers and static condensers.

### CORRECT NEAR PLACE OF ORIGIN

When endeavoring to correct poor power factor every reasonable effort should be made to do so at or near places where it originates. Aside from the benefits derived in the power bill the user should consider the other advantages he can gain for himself. High wattless currents needlessly tie up capacity in wires, switches, meters, transformers, alternators, etc., which might otherwise be used for useful work. Often the necessity for buying new transformers or additional alternating-current generating capacity to carry additional loads can be obviated by correcting power factor on the load side of such units already in service. Therefore, in applying corrective equipment the first thought should be to locate it where it will reduce reactive currents before they pass through transformers, switches, wires, etc. Consistent with this idea, small-capacity condensers suitable for use on low-voltage circuits are available for installation directly connected to the motor leads of induction motors.

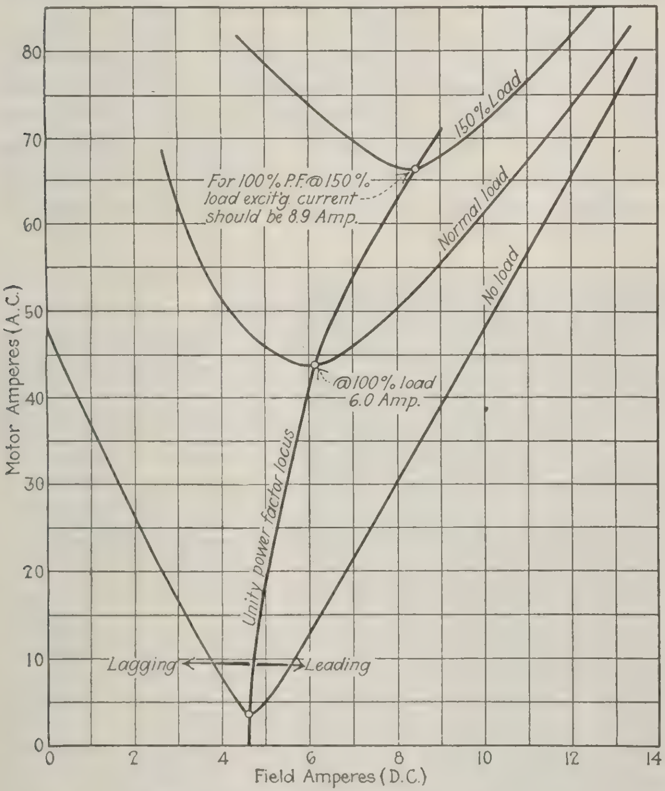
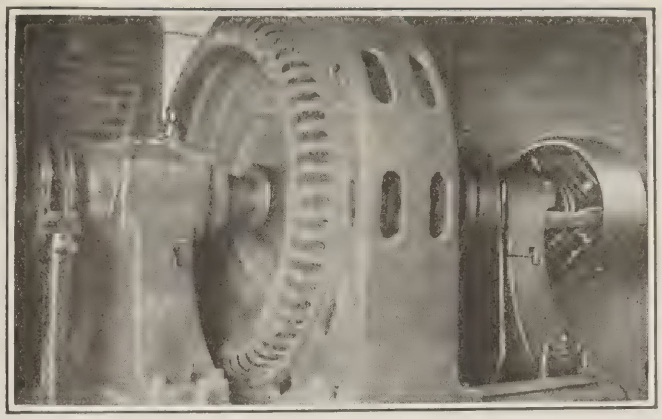


**Fig. 2—Use High Excitation to Get Good Power Factor**

These are the V-curves of a 225-hp., 1,200-r.p.m., 2,300-volt synchronous motor. They show that it is necessary to excite the direct-current field about 8.5 amp. to carry 150 per cent load at unity power factor and 6 amp. to carry full load at unity power factor. Greater excitation than these amounts for the loads specified causes the motor to take leading current, lower excitation causes a lagging power factor.



**Synchronous Motor Drives a Large Mine Fan And Aids Power Factor Conditions**

The Buck Run Coal Co., near Minersville, Pa., uses this synchronous motor. It is connected to a large fan by a magnetic clutch. The motor cuts down wattless currents in the power system.

Present practice suggests that when the required leading reactive capacity for power factor correction is as large or larger than 300 kva. a synchronous motor should be given first consideration. It has the advantage over most other devices for this service in that it has inherent qualities which enable it to stabilize voltage fluctuations. It has an additional advantage in that it can be used in conjunction with automatic voltage controlling devices to maintain good voltage regulation. When so used the reactive current taken by the machine varies automatically to compensate for line voltage variations. Under high voltage conditions the synchronous motor may be operated to hold down the voltage, thus the machine may be easily adjusted to the needs of the circuit.

### APPLICATION IS LIMITED

The synchronous condenser is only applicable in large sizes for group power factor improvement. This is to some extent a disadvantage where small inductive machines operating from several banks of transformers cause poor power factor conditions. Under such a circumstance the poor power factor conditions are first allowed to accumulate and magnify before being corrected. This allows the heavy wattless currents to tie up transformer, alternator and line capacities which might otherwise be advantageously used. It also permits the circulating currents to cause poor voltage regulation and undesirable heating of conductors.

The synchronous condenser has greater losses than a static condenser and requires attendance unless it is made to function automatically, in which case the first cost is somewhat higher.

Group power factor correction even from the point of view of the static condenser being used for the purpose is often desirable because of low first cost. There are also conditions where the application of condensers of small capacity, either to individual motors or to small groups of motors prove most profitable. A complete line of static condensers conforming in sizes to the most popular induction motors is now available. These condensers are designed for direct application with 220,- 440- and 550-volt motors without intervening transformers or reactors, except where the capacity of

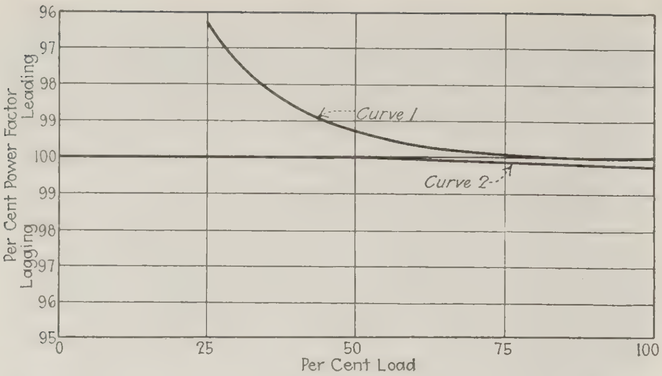
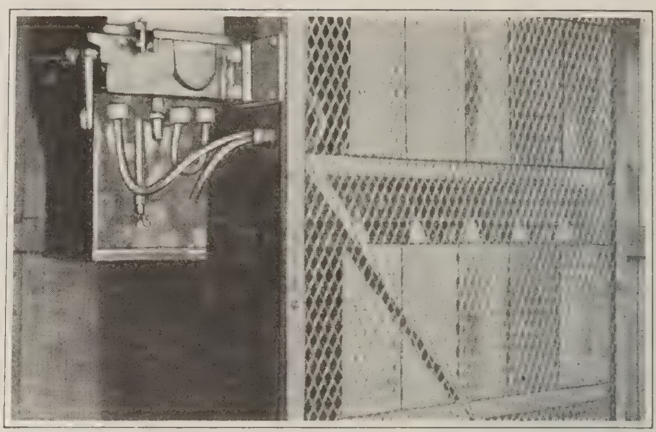


**Fig. 3—Good Results Are Obtained When Induction Motors Are Combined with Condensers**

Curve 1 shows the power factor of the line resulting when an induction motor is supplied with a static condenser equal in capacity to that necessary to give 100 per cent power factor at full load. Curve 2 shows the results obtained when a static condenser equal in capacity to the reactive kilovolt-amperes of the motor at no load is used.



**A Static Condenser Outfit Which Quickly Paid for Itself**

One of the first static condenser installations at an anthracite mine was made by the Richmondale Coal Co. No synchronous equipment was in service at this mine and the static condenser quickly paid for itself by large reductions in the monthly power bills.

the condenser is large enough to make the transformer and high-voltage condenser more economical.

For 220-volt motors a 5-kva. outfit is about the largest economical unit suitable for direct connection to the motor leads. Condensers possibly as large as 30 kva. may be used directly connected to 440-volt circuits. When larger capacity condensers are required the fixed cost per kilovolt-ampere will be less with transformers and high-voltage condensers.

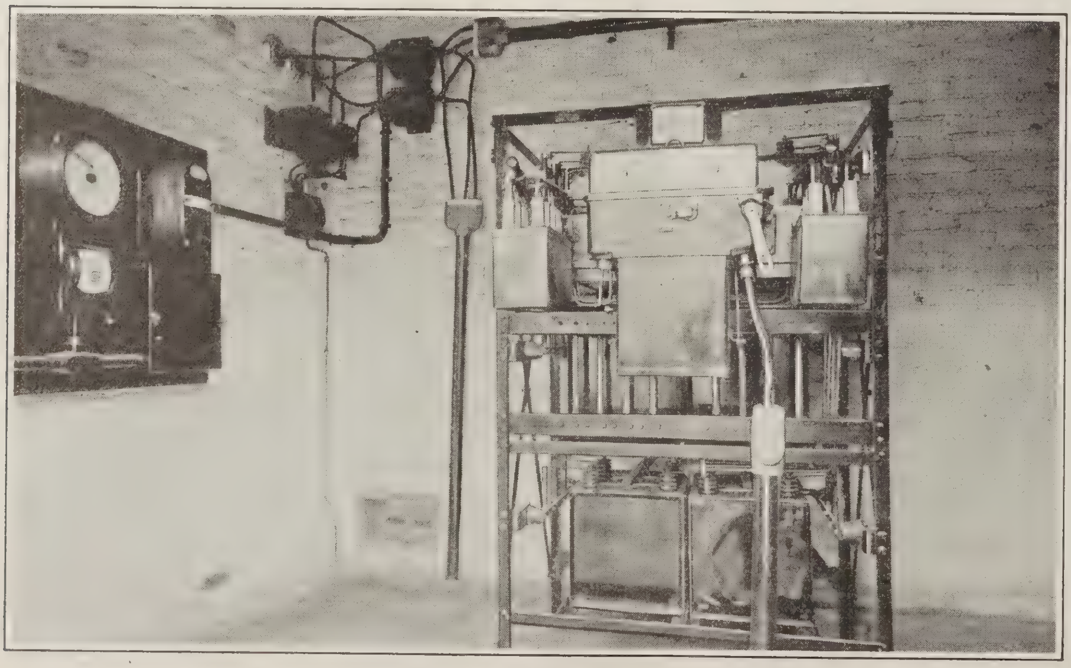
When determining the size condenser to use with an individual motor, much depends upon the characteristics of the motor load. Under some circumstances, especially when the motor operates continuously at full load the condenser may be much smaller than one applied with a motor driving a variable load. Fig. 3 indicates results obtained by the use of a static condenser equal in corrective capacity to the full load reactive kilovolt-amperes taken by an induction motor and also a static condenser equal in corrective capacity to the no load reactive kilovolt-amperes of the motor.

The curves show that when the motor is equipped with a condenser equal to the no load reactive kilovolt-amperes taken by an induction motor, the power factor varies from 0.9976 at full load to unity at no load. Such a condenser, therefore, gives entirely satisfactory results and is generally recommended.

Where condensers are to be used for power factor correction of a group of motors, the capacity of the unit depends upon the improvement desired. Obviously, the diversity factor of the load has a great influence upon the size condenser required.

Static condensers afford more flexible selection than synchronous condensers. A greater range of capacities is available. The location of a static condenser outfit requires no special foundations and the first cost is lower for small units. The losses are low and no or little attendance is necessary for their operation or maintenance.

The inherent characteristics of a static condenser are not such as to stabilize voltage, the leading corrective current which they supply increases or decreases with the voltage. However, it has been pointed out that because the lagging reactive current of induction motors and transformers varies with the voltage, this seemingly serious drawback to the static condenser is somewhat counterbalanced.



**Easy to Set Up**

Neat, compact and safe installations can be made with static condensers. Another advantage which they possess is that they require but little attendance. When floated on the line continuously during low load periods they will correct reactive induction current which was established during heavy inductive load periods, if the reactive current meter has no ratchet.

# Careful Investigation Shows Common Faults of Bits

## Shape, Clearance, Rake, Heat Treatment, Forging Method And Material All Important in Sharpening—Together They Fix Bit Usefulness

By **Joseph A. Blake, Jr.**
Chicago, Ill.

RECENT EXAMINATION of a large number of reports covering the performance of cutter chains disclosed the fact that most operating troubles resulted from defective bits. These reports extended over a period of nearly three years, included observations at more than sixty mines, and covered the products of several manufacturers. The high percentage of bit defects can hardly be considered as accidental; probably it reflects a generally prevalent condition. Certainly in many cases the efficiency of coal cutting machinery is greatly reduced by the use of poor bits.

Primarily a cutter bit is a roughing tool. It is designed to remove the maximum amount of material in a given time with the minimum consumption of power and at the lowest replacement cost. Its action, in general, is similar to that of a planer tool with the important difference that it must penetrate under the pressure of the feed which is continuous. Conditions of operation are trying. The cutting is usually done dry; there is little chance for the dissipation of heat; vibration is always present and variations in hardness and the presence of impurities in the coal expose the bits to sudden shocks which may be extremely severe.

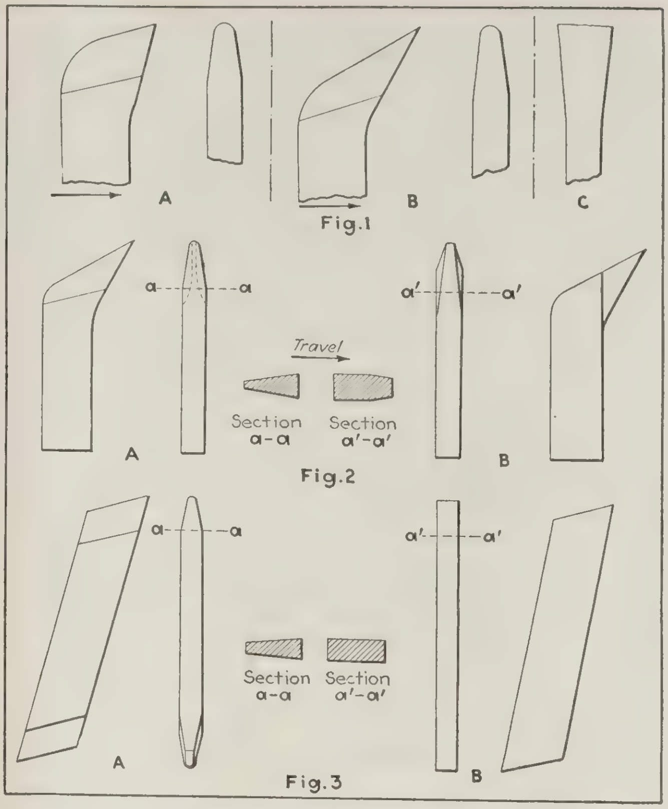
In spite of every precaution, therefore, occasional bit failures are to be expected. If the elementary principles governing the design and heat treatment of cutting tools are ignored, these failures may be so frequent that the cost of operation will be increased several fold. The diminished quantity of coal mined per shift is only one of the factors to be considered in this connection. Nine times out of ten, cutting with poor bits means an overloaded machine. Inevitably this causes frequent shut-downs and heavy expenditures for maintenance.

### POINTS OUT SIX BIT DEFECTS

The bit defects observed can be conveniently grouped under the following heads, the order being that of the frequency with which they occur: (1) Weak point, (2) incorrect clearance, (3) incorrect rake, (4) poor heat treatment, (5) bad forging, (6) use of an unsuitable steel.

Almost invariably a weak point is the result of too much rake or clearance or both, since any increase in these factors proportionately diminishes the included angle of the bit point. Bits having this defect may break under the stress of heavy cutting or as the result of shock. Also, since heat is removed from the cutting edge mainly by conduction, if the cross-section of the steel is small, this heat dissipation may not be sufficiently rapid to prevent a dangerous rise of temperature. Sharp points as, for example, the corners of the chisel bit, *C*, Fig. 1, are easily broken or damaged by over-heating and should, if possible, be avoided. A cutting edge without salients, like that of a round-nosed roughing tool, usually will stand up better under heavy duty than any other.

The rake and front clearance necessary for satisfactory performance depends to some extent upon local conditions. A bit without rake wears rapidly at the point and consumes unnecessary power. As the rake is increased, the force required to split off the chips diminishes, less power is required for cutting and the life of the tool is prolonged, assuming that enough metal is left to support the edge properly. Clearance should be sufficient to insure adequate penetration and avoid friction. More than is required to attain this result is unnecessary and may be harmful. The bits shown at *A*, Figs. 1 and 3, have a rake and front clearance of 15 deg. In the case of *B*, Fig. 1, these angles are both 30 deg. when the bit is not inclined. For a given contained angle, the relative rake and front clearance is governed by the inclination of the bit in the chain block. In the case of the bit illustrated at *A*, Fig. 3, which is formed without hook from a straight bar, the rake is fixed by this inclination and is not varied in sharpening. The double-ended construction, not possible with crooked bits, is a distinct advantage, since it is necessary only to reverse the bit to present a fresh point for cutting.



**Standard Shapes for Bits**

Each possesses advantages and disadvantages that are pointed out in this article in an effort to show mining men what this investigation proved.

Side clearance, often neglected, is highly important. The bits, *A*, in Figs. 2 and 3, will clear laterally and cut with little friction, whereas those shown at *B* will rub against the coal, consuming power needlessly. This fault also greatly increases the danger of overheating.

Heat treatment really begins with forging and the two operations may well be considered together. Overheating of carbon steel occurs frequently. This is always harmful and if carried beyond a certain point cannot be corrected by subsequent treatment. A safe rule is not to heat this steel above a bright red and to stop forging before it ceases to glow visibly in daylight. No instance of forging at too low a heat was noted, though it is easy to injure high carbon and many alloy steels in this way. One case of superficial decarbonization was reported. This may have been caused by frequent working. The same effect, however, can be produced by exposure of the hot metal to the direct action of the blast. In the latter case, cracks may also result from the chilling action of the air. This trouble can be avoided by the use of a deep fire. Where a large number of bits are handled, a suitably designed furnace is an economy. High-speed steel should not be forged below an orange heat, nor after it begins to stiffen noticeably.

With carbon steels, a water quench, followed by drawing, preferably in oil, will give the best results. If the bits are to be hardened all over and used without drawing oil is probably the safest quenching medium. In all cases where oil is used the bits should be cleaned after treatment. If this is not done, coal dust mixed with oil may become packed hard in the slots, making it difficult for the machine runners to set the bits. This trouble has been observed at several mines.

The greatest strength and durability of the cutting edge results when the steel is quenched from just above the critical range, sufficient time being allowed to permit it to become heated to this temperature all the way through. If the bits are left too long in the fire, or the temperature is too high, the structure will be coarse and weak. Quenching from the forging heat is never advisable. Carbon steel of approximately 120 points will be sufficiently hard for average cutting if heated to the proper temperature and allowed to cool in the air. Moderate care is necessary, however, when this method is used. If the bits are thrown on a damp floor, good results cannot be expected. They should be laid on a dry surface and shielded from cold air.

## Special Treatment for Alloy Steels

Alloy steels require special treatment. The instructions furnished by the maker for the handling of these products must be intelligently followed if good results are to be attained. Bits made from high-speed steel should be hardened at the point only. If they are hardened all over, the percentage of fracture in service will probably be high. In cold weather it is advisable to warm the steel before placing it in the fire.

In the selection of steels for cutter bits due regard should be paid both to local conditions and to the first cost of the material. An alloy steel may give better service than a carbon steel under certain circumstances yet be so expensive that its use is out of the question. The desirable qualities of any bit are: ability to withstand shock and abrasion, with sufficient hardness to permit the formation of a fairly keen, durable edge. Carbon steel of about 70 points, containing a small quantity of chromium and nickel, seems to be quite satisfactory in average cutting. It has the advantage of being relatively cheap.

Where greater hardness is required, steels of higher carbon content, up to 100 or 120 points are often used. Although such a steel frequently gives excellent service, it must be borne in mind that supersaturated carbon steels are comparatively brittle. Breakage is the commonest form of failure noted for this material. In several instances, shallow grooves made by the setscrew have been sufficient to determine the point of fracture. Burrs and indentations, should always be removed in sharpening. Besides being a source of weakness, such imperfections sometimes make it hard to set the bits and especially difficult to remove any that are broken. This increases the machine runner's temptation to operate with dead lugs. This steel is more expensive and harder to work than that first mentioned.

High-speed steel is seldom used in coal. Ability to stand high temperature without injury is its chief advantage. It is so expensive that its use, except under unusual circumstances, is not an economy.

Practically everything that has been said in regard to sharpening and heat treatment is generally applicable to cutting tools, and is known to every mechanic. Failure to apply the principles stated in the production of cutter bits probably arises from the type of labor and the facilities available at the average mine. Where the bits are sharpened by hand, the results obtained depend altogether on the skill of the blacksmith. Often his equipment is extremely limited, and if there is much bit sharpening to be done, uniformity of shape and temper can scarcely be expected. Die forging makes it easy to turn out correctly shaped bits with a large saving in time over hand methods but does not affect the problem of heat treatment. Dies are expensive, and their life is comparatively short. All bits produced by a defective die will be badly formed. Because of their high cost, and the time saved, as compared with hand work, there is a tendency to keep in service dies that ought to be discarded.

Finishing bits by grinding after they have been forged, in order to obtain correct and uniform shape, has been tried at a few mines with apparent success. Unquestionably, a better edge can be made by grinding than in any other way. A bit so designed that it could be shaped by a simple grinding operation from a length of bar stock without forging and that could be repeatedly sharpened in the same way, would be almost ideal. This method would eliminate the uncertainty of heat treatment.

Just as in the case of a lathe or planer, the efficiency of a mining machine cannot be greater than that of the cutting tools with which it is armed. Excellence of mechanical design and construction is useless if the bits employed are composed of poor material or are wrongly shaped. The majority of mines might well pay more attention to the forming, sharpening and tempering of their bits than they do at present.

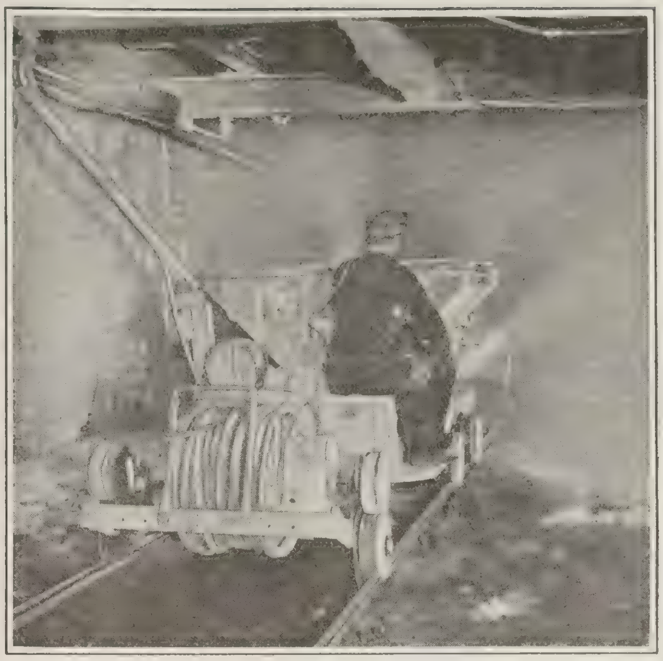
**A Coal Miner's Home in the West**

The best home in Rock Springs, Wyo., is owned by a Tyrolese miner, John Schlachter, who mines coal at Winton, a coal town nearby, operated by the Union Pacific Coal Co. Schlachter is a skillful stone cutter, mason and builder. Most of the stone work he did himself, using the castellated style so general in his home country. All the house needs is a little grass on its lawn, but to grow that in Rock Springs requires an infinitude of coaxing.

# Rock Dusting Reduces Danger and Lowers Compensation Rating

## All Passages, Even to Rooms, Thoroughly Dusted—Machine Delivery Nozzles Oscillate, Effectively Coating Surfaces

**By Alphonse F. Brosky**
Assistant Editor, *Coal Age*,
Pittsburgh, Pa.



IT IS PROBABLE that the Harmar mine of the Consumers Mining Co., a subsidiary of the Wheeling Steel Corporation, is as thoroughly rock dusted as any coal operation in the United States. This mine is located at Harmarville, Pa., a few miles from the city limits of Pittsburgh. It was the first coal operation in Pennsylvania to be completely treated with inert dust according to the judgment of the state Compensation Rating and Inspection Bureau, for the bureau granted to this company the first credit in compensation rating amounting to 10c. for rock dusting, at the same time removing the charge of 5c. against Item 85, pertaining to a dry and dusty mine.

Standing haulage entries were cleaned up before rock dust was applied for the first time. In the primary application 5.85 lb. of dust was spread per linear foot of entry. Rock dust is applied by hand to the top of all beam roof supports. As places (including rooms) are driven up, rock dust is periodically laid, each such extension reaching to the face. All return airways have been dusted by hand—two sacks or 160 lb. of dust being applied to every 25 lin.ft. These passages are further protected against the dangers of coal dust by a secondary defense consisting of 107 barriers installed at intervals of 500 ft. Each barrier holds 640 lb. of dust. It is now the practice to rock dust by machine the back entries as they are advanced, before the track is torn out.

Thus far the company has applied 483 tons of rock dust to about 25 miles of entries and rooms. The practice was started Oct. 1, 1924, and the initial dusting was completed on Feb. 19, 1925. In that period of five months $2,874.52 was spent for rock dusting and 185,901 tons of coal produced so that the cost of the initial treatment per ton of coal amounted to 1.54c. The expense of rock dusting extension and maintenance per ton at the present time is 0.9c. the dust being applied at the rate of 5.85 lb. per linear foot. The cost should be about 0.5c. per ton of coal under similar conditions if only 3 lb. of dust per linear foot were applied.

An application of 3 lb. of rock dust per linear foot of passage treated is not enough in the Thick Freeport bed. A 3-lb. coat is too deeply embedded in the cleats and crevices of the coal to be dislodged instantaneously into a cloud. This fact was determined experimentally by applying a jet of air under 80-lb. pressure first to a 3-lb. coat and then to a 5.85-lb. coat. The dust of

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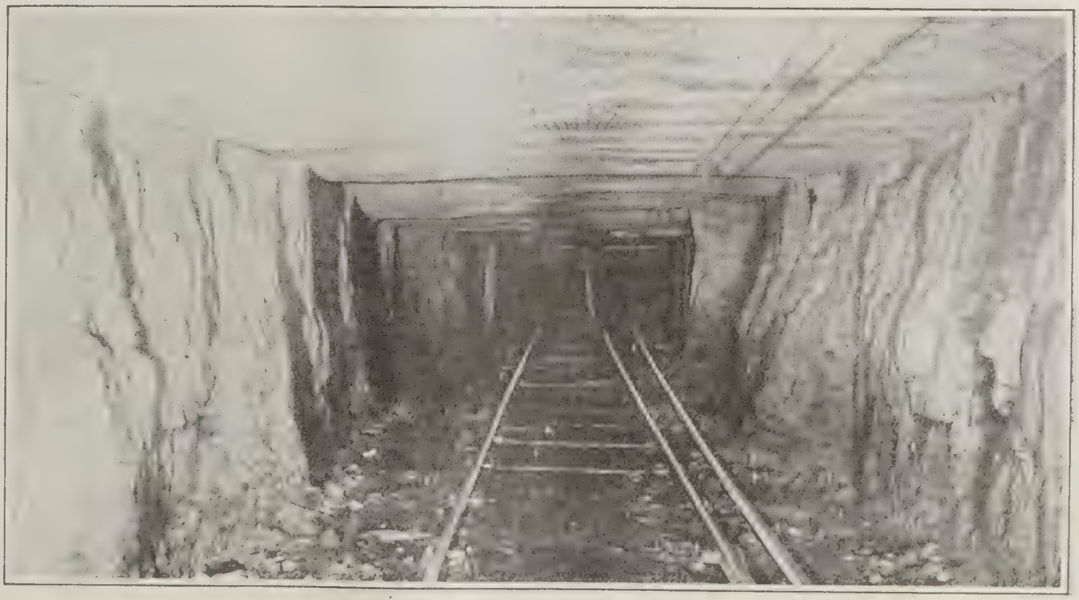
In the headpiece accompanying this article may be seen the Harmar mine duster in action. The operative is not enveloped in the cloud of dust produced but in his position on the rear of the machine breathes pure air while controlling the movements of the duster. Rocking nozzles direct the material discharged to the roof and ribs, effectively coating them.

**This Entry Is Well Dusted**

Approximately 25 miles of entries have been treated with rock dust in this mine, which was the first to receive a reduced compensation rate by virtue of this protection. This entry is a main aircourse near the face. The smoothness of roof and the absence of timbers is an indication of topcutting. The cross-section of this entry appears "upside down," that is it is larger at the top than at the bottom. This is because of the top cutting. Ribs sloping inward will, naturally, gather more dust.



**Rock-Dusted Face of an Entry**

The face of this entry is only about 30 ft. inby of the last breakthrough, yet it is thoroughly rock dusted. Note how the topcutting makes a dangerous roof safe. The man on the left is the safety boss who is in the act of showing the miner where to drill his shot holes in the face.

the lighter coat was only partially stirred up by the air jet whereas that in the heavier application immediately formed into a dense cloud. The point is that a certain quantity of rock dust must be applied to smooth out the recesses in the coal. The filling-in dust is not nearly so effective as that which lies over it.

It is unwise to apply a second coat to an initial layer that is covered with coal dust, as on a shaft bottom. The coal dust will bind the two coats together only while the mine is dry. It forms a plane of weakness from which the second coat separates, falling to the floor, after the dust becomes moist. This was experienced in the Harmar mine. The initial coat should be removed by air or brushing, if necessary, before the fresh coat is applied.

Light, fine dust is not suitable for treating haulage roads. Such material will not stick securely to the ribs and roof and much of it travels with the air, to settle finally on the bottom, where it is picked up and swirled into a cloud by passing trips. But this dust is well-suited for back-entry use if its distribution by the mine air has any distinct value.

High-pressure dusting tends to produce a dense coat whereas low-pressure application results in a fluffy coat. This company prefers the latter, believing it to be the more easily blown into a cloud.

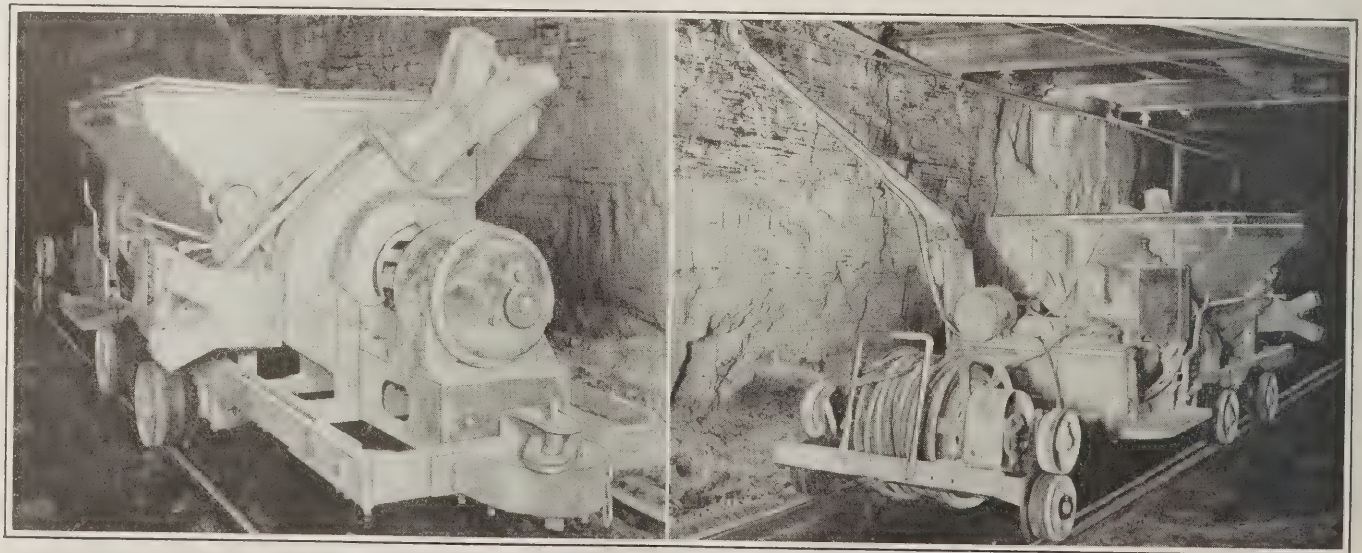
In mines where the roof is bad, as in the Harmar operation, shelf and even trough barriers are maintained in back entries only with difficulty and at high cost because of frequent falls of roof which dislodge these barriers.

Animal haulage is a big producer of coal dust. Until recently two horses were used for gathering in a small isolated section of the Harmar mine. The roadways were cleaned and then dusted. In a few days' time so much spillage from the mine cars was pulverized to such a degree, and so effectually mixed with the rock dust between the rails, as to make the two dusts appear as one. Even on the undisturbed rock dust in the clear a readily perceptible blanket of coal dust had settled.

High-silica dust and its ill effects on the human respiratory organs are almost as readily detected by the practical mining man as by the scientist in the laboratory. A high content of silica can be detected by the reflection of light from its particles. Workmen will complain about the effects of a high-silica dust without knowing that the content of that material in the dust inhaled is high. Further, a high-silica dust will not stick well to the mine surfaces but tends to drop to the floor. These manifestations were noted during the application of one lot of dust containing 7 per cent of silica. The Harmar mine uses a dust of a fineness such that all will pass through a 20-mesh and 75 per cent through a 200-mesh screen. It also must otherwise meet Bureau of Mines requirements.

A rock dusting machine has been developed at the Harmar mine, of the low-pressure type, which applies dust automatically to ribs and roof. One man controls the feed and speed of travel of this device from the rear end. He is in the clear of the dust cloud produced and is assisted by a helper.

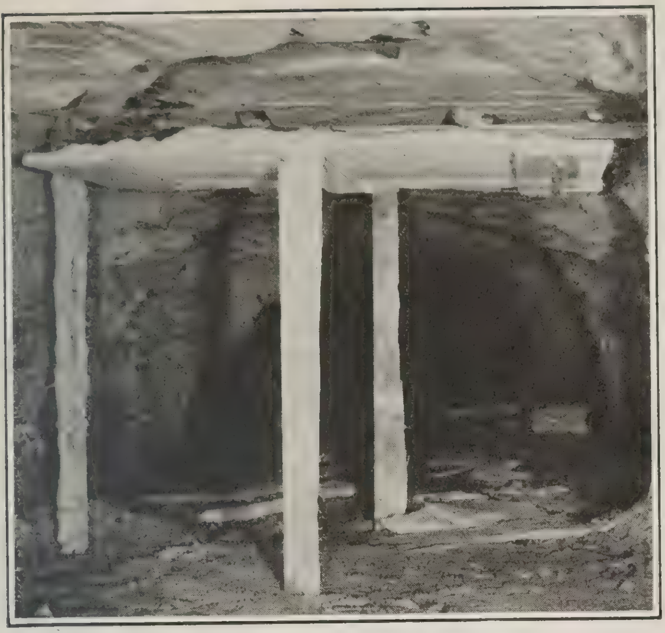
A front view of this duster is shown in one of the accompanying illustrations. The overall height of the machine, as measured from the rail to the tips of rocking nozzles when these are in their highest position, is 52 in. The elevation of the top of the storage bin



**Fore and Aft on the Harmar Mine Dusting Machine**

The front of duster with its rocking nozzles is at the left. Dust is fed into a two-compartment blower and discharged into the atmosphere through double or forked nozzles, which rock up and down with the blower housing through an angle of 45 deg. The dust is thus effectively distributed to all of the mine surfaces.

The rear of duster showing cable reel is pictured at the right. This reel, which is of the friction type coiling 500 ft. of No. 6 duplex cable, enables the machine to reach the faces of rooms and advancing entries. Speed of travel of this duster is controlled through resistance.



**Double-Hinged Door Rock-Dust Barrier**

In the back entries of the Harmar mine 107 barriers of the type here shown have been erected. Each of these has been charged with 640 lb. of rock dust. They are hard to maintain because of roof falls. Note the freshly fallen slabs of slate at the foot of this barrier.

**A Rock-Dusted Room**

Rooms as well as entries are dusted in the Harmar mine; in fact the management believes that the dusting of room and entry falls is more important than the treatment of entries themselves, for it is at these places that most explosions originate. The roof here shown is much better than the average found in this mine.

above the rail is 45 in. This container has a capacity of 3,000 lb. of dust. It is covered with a wooden lid, not to prevent back pressure (for there is none) from disturbing the dust within it but to forestall damage to the feeder inside the bin in case of a roof fall.

The feeder is a 4-in. screw which so revolves as to force dust into a blower. Above it rotates a shaft carrying projecting arms which serve to break any arching of dust above the screw. The dust is fed through a pipe into a two-compartment blower. This pipe is provided with two slot regulators, by the opening or closing of which the feed may be equalized between the two compartments. By the blower the dust is thoroughly mixed with the air and carried to two outlets, one on the right and the other on the left side of the fan housing.

Telescoping over and projecting from these two outlets are two branched ducts 135 deg. apart. Thus a split nozzle, in the shape of a Y is formed. The dust is applied to ribs and roof by a rocking motion of the blower housing and the attached double-outlet ducts, through an angular displacement of 45 deg.

The blower is direct-driven by a 5-hp., dustproof motor at a speed of 1,700 r.p.m. The fan and motor armature are mounted on a single shaft in a triple ball-bearing suspension, doing away with undue vibration and heating.

The rocking motion is imparted to the nozzles by a crank, connecting rod and rocker arm arrangement, as shown in one illustration. On the side of the hopper and parallel with its major axis is a shaft which is chain-driven from the screw-feed shaft. This drives a pair of gears on one of which is mounted a crank. A connecting rod joins this crank to the short arm of a bell crank pivoted at the knuckle. The long arm of this bell crank rocks the blower housing and nozzles back and forth through an arc of 45 deg.

The feed-screw shaft is driven by a chain from a 1-hp. dustproof motor. This shaft also carries a pinion engaging with a gear which drives the agitator.

A 6-hp. motor propels this machine which will haul two or three cars of dust if desired. The drive is by a 6 to 1 reduction from the motor to a countershaft and by a 3 to 1 reduction from there to the axles of the truck. By resistance control this machine can be made to travel at speeds ranging from 6 miles to 660 ft. per hour. As may be seen in one of the accompanying illustrations a mining-machine type of friction-driven reel capable of holding 500 ft. of No. 6 duplex cable may be attached to the rear of this machine.

Two men in 8 hr. can apply 125 to 150 sacks (80 lb. each) of rock dust, including the time required for back-tracking and filling the hopper.

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## An Explanation

George R. Pratt, Alberta government fuel engineer, whose paper before the Canadian Mining Institute was abstracted for an article on page 700 of the Nov. 19 issue of *Coal Age* under the headline "Beating Anthracite Is Difficult in Winnipeg," feels that the article misinterpreted what he said. He has wired *Coal Age* this message: "What we have done to take the anthracite market in Winnipeg is common knowledge to Institute members, consequently it was not stressed in my paper. This led to your misconception as shown by the title. The intention of the paper was to show what must be done to stabilize the industry. Six years ago Winnipeg fuel was 90 per cent anthracite; three years ago 10 per cent. Now we ignore anthracite as a competitor. Alberta competition comes from soft coal from other sources."

There was no misconception of Mr. Pratt's intentions by the editors. Because so large a part of the United States is now trying to "beat anthracite" with soft coal—and with some success—only those parts of Mr. Pratt's paper which dwelt upon Alberta's experience in this regard were used. It is regretted that there was not space available for printing all of Mr. Pratt's paper.—Editor.

# Million-Dollar Tunnel Puts Mine Nearer Seattle

### Mile-Long Drift Under Cedar Mountain Gives Old Black Diamond Operation an Outlet Only 17 Miles from City for 2,000-Ton Output

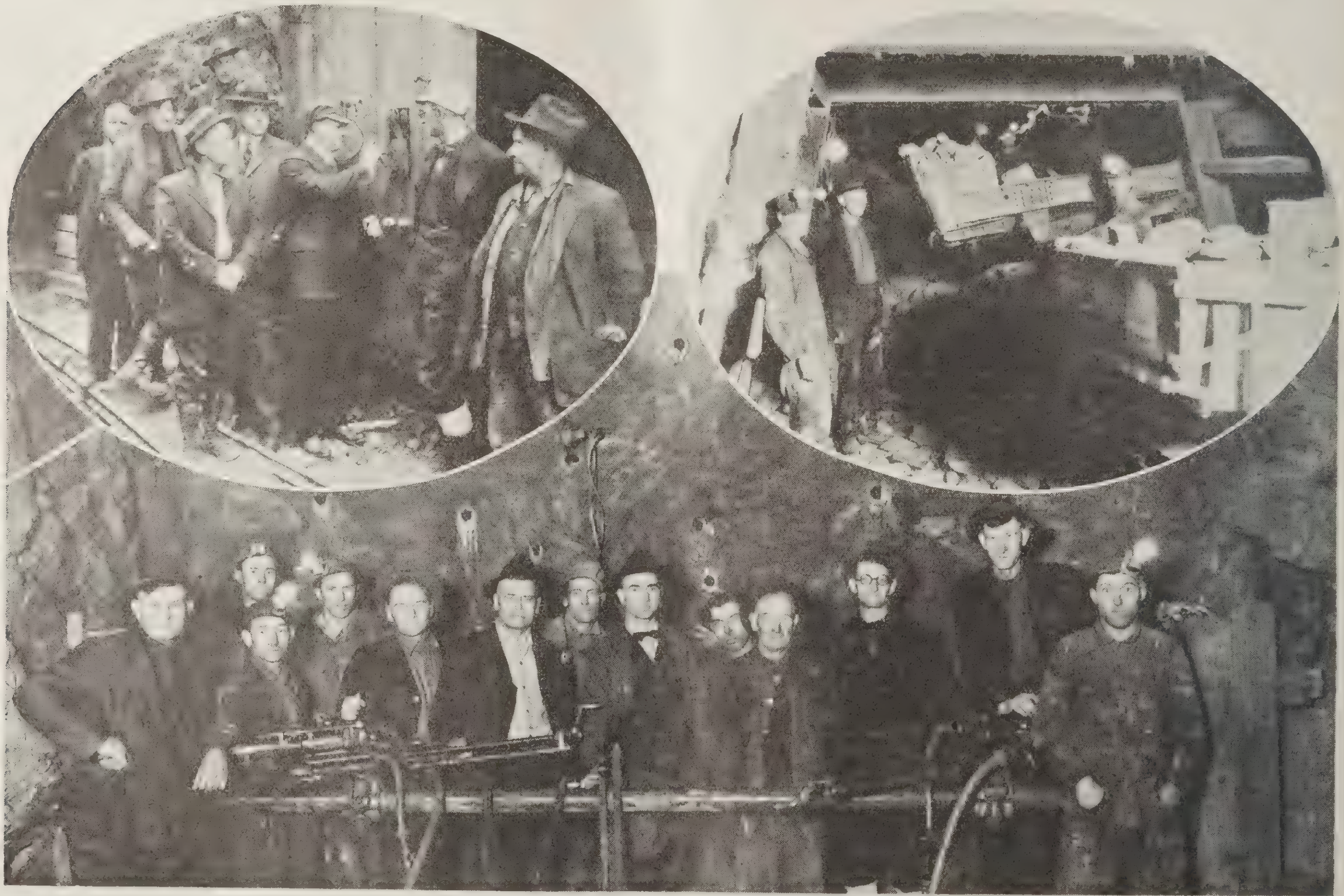
THE LAST PIECE OR ROCK separating the ends of the Pacific Coast Coal Co.'s tunnel under Cedar Mountain was blasted through on Oct. 16, thus completing an underground passage over a mile in length through which coal from the new Black Diamond mine will be delivered to the tipple on the Pacific Coast R.R. Completion of this tunnel—the two ends met fairly—is an engineering feat of no mean importance. One end of this passage was driven from daylight while the other started in the mine workings on the other side of the mountain. Junction of the two sections was effected almost exactly midway between their starting points. The project cost a million dollars but it brings out coal much cheaper and in better condition than that from the company's older operation at Black Diamond while reducing the distance from the mine to Seattle from 33 miles to 17 miles.

In the driving of this tunnel many formidable difficulties were encountered and overcome. Thus the course of this passage lay through a fault of considerable width and displacement, also through the buried bed of an ancient river, now several hundred feet beneath the surface and filled with loose material and detritus. These difficulties, however, were all surmounted and the tunnel pushed to completion.

The new Black Diamond mine lies in the McKay coal bed. Its extent is such that it is calculated that 2,000 tons can be extracted each day for 50 years before the mine will be worked out. Modern equipment only is installed and although the delivery tunnel just completed was expensive it is estimated that the cost of coal from this mine will be much less than from others in its vicinity. Location of the tipple within 17 miles of the business center of Seattle, Wash., assures an excellent market.

## Expect More Lump

The coal produced will be of the same grade as that mined at the company's older Black Diamond operation, which will be worked out in the course of a few more years. A tipple and screening plant at the new opening is now under process of construction. It is believed that a much larger percentage of lump will be realized from the new mine than was obtained from the older one. This will be because of the lesser thickness of overburden above the new operation and the consequent



**Bringing the Mine to the Tipple Cuts Cost of Coal**

The large illustration shows the face of the last barrier, 9 ft. thick, the blasting down of which joined the two sections or ends of the tunnel under Cedar Mountain. The two sections of the underground passageway met almost exactly, thus completing a direct and unobstructed passage between the mine and the tipple on the opposite side of the mountain, and one that will be entirely unaffected by weather.

In the illustration in the upper left-hand corner N. D. Moore, vice-president of the Pacific Coast Coal Co., surrounded by other officials is shown throwing the switch that fired the loading in the last barrier of the tunnel. Although this barrier was half a mile away, it was completely shattered by the closure of this switch on the surface.

In the illustration in the upper right-hand corner is shown one of the little Hoar shovels cleaning up the remains of the last barrier and uniting the two halves of the haulage tunnel. In driving this passage these little shovels gave an excellent account of themselves and will now be put to work in loading coal cars in the mine proper, thus cheapening production.

lighter pressure to which the coal face is subjected. In the older mine neither undercutting nor explosives are necessary, the coal coming away from the face, sometimes with appreciable force, under slight action of the miner's pick. This condition is not conducive to a yield of large coal.

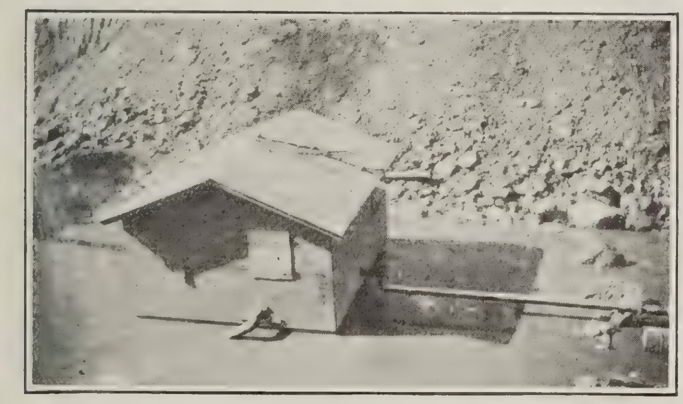
In the newer operation, on the other hand, both undercutting and explosives will be employed as the depth of cover encountered is only a fraction of that found in the older mine. A goodly percentage of lump can thus be obtained. The modern screening and preparation equipment installed on the new tipple will enable the company to take full advantage of this fact and market a product of excellent quality and grade.

In this operation modern methods and equipment will not be confined to the tipple and preparation plant. The mine itself will be electrically lighted, at least along the main gangways. Electric locomotives will be employed for haulage and revolving mechanical shovels will be used in loading out the coal. Machines of this kind gave an excellent account of themselves in mucking operations in the tunnel.

# Floating Pump Scow Quickly Drains Surface Pit

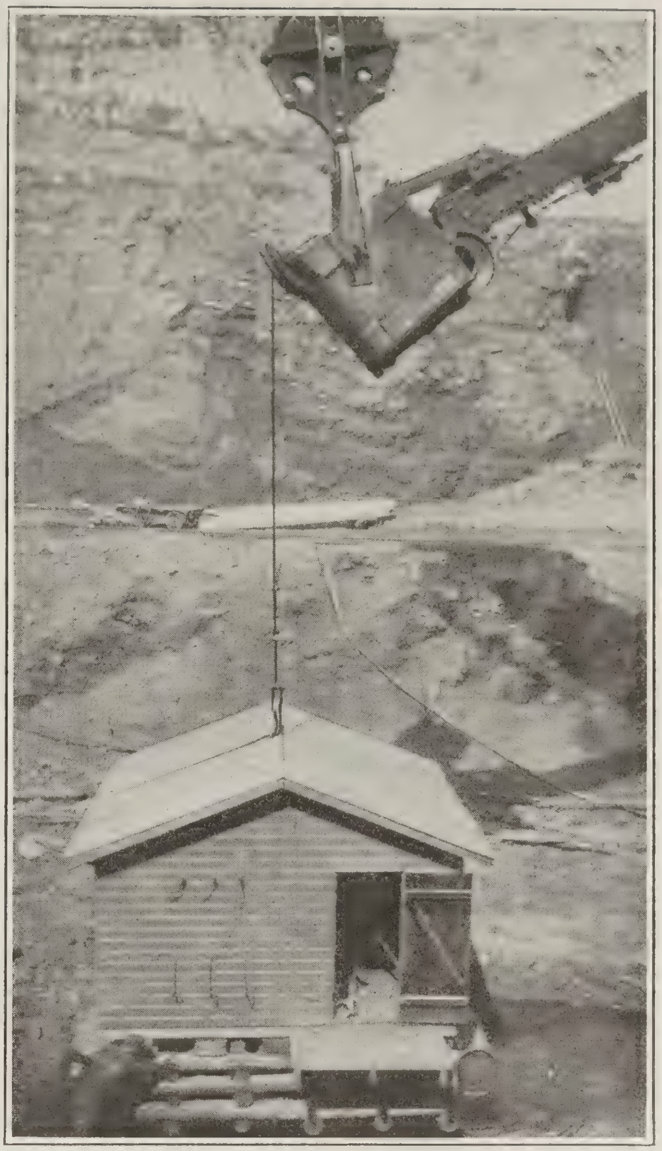
### Equipment Assembled with Small Cost Put in Operation in Minnesota Mine—Easily Moved About by Big Pit Shovel

An inexpensive equipment to keep an open pit free from water and to prevent any danger of submerging the pumping equipment, says L. C. Moore in *Enigneering and Mining Journal-Press*, was designed and put into service at the Boeing mine, Hibbing, Minn. Eight-inch poles, 16 ft. long, were used in the construction of a square crib, openings being left to fit 50-gal. empty, steel oil barrels. Thirty-four barrels were placed in the cribbing and fourteen additional barrels were lashed to the sides with discarded ⅝-in. steel cable. Timbers 8x16 in. in section were bolted on top to support the pumps, and a pump house, built in sections, was set on the top of the scow thus formed. Two 1,000-g.p.m. centrifugal pumps, 175-ft. and 350-ft. head respectively were available and were placed on the scow. A 2,300-volt, three-conductor, steel-armored power cable connected the pump motors to the transmission line.



**Pumping Station Afloat in the Pit**

The discharge piping from this station was provided with swing joints permitting a variation of several feet in the pumping level. When the pit became flooded from a cloudburst this station pumped the water out in a few hours and stranded itself.



**Swinging Pump House Into Place**

Sectional construction was employed in building the pump house and the raft or scow upon which it rests is of what might be termed a "semi-knockdown" type, that is, when not in use the various pieces may be separated and stored or put into other service. The whole plant can be moved about in the pit by the stripping shovel.

As the pumps operated under a head of only 30 ft., a gate valve on the discharge line was necessary to prevent overloading the motors. The discharge line was provided with swing joints admitting of a variation of 12 ft. in the elevation of the scow. The complete outfit weighed eight tons. It was built upon a flat car and was shifted by means of the 350-ton shovel used in the pit. Four ⅝-in. cables were attached to the corners and connected to a clevis at the center. A short wire rope sling was attached, the other end being looped over the bucket teeth.

The equipment was tested out in August when a small cloudburst filled the pit sufficiently to float the scow. The shovel trucks were submerged but in seven hours the water was out and the shovel at work. The outfit, as designed, can be dismantled readily, the equipment and sectional pump house can be used separately and the oil barrels after cleaning and painting are ready for further service. The timber employed in the construction of the scow had been discarded and was of little value.

# News Of the Industry

## Pinchot Still Central Figure in Hard-Coal Controversy; Operators Declare for "Stronger Union"

The Pinchot plan for settling the anthracite strike, submitted by the Governor of Pennsylvania at Harrisburg on Nov. 28, is still the storm center in the hard-coal situation. The business interests of the anthracite region who tried to stop the calling of the strike of Sept. 1 are again active in efforts to bring the miners and the operators together. Union officials are ballyhooing for the Pinchot program and are endeavoring to persuade the public that the operators' rejection of the Governor's eleven points—one of which (that providing for an immediate resumption of mining) the union leaders themselves kicked into the discard—is proof of the employers' contempt for the consumers' necessities. The mine owners, on the other hand, have been busy reiterating the reasons for their position and, as the details of the Pinchot program become better understood, public opinion is again lining up behind the operators.

That the rejection of the Governor's proposals has closed the door to negotiations was vigorously denied by Major W. W. Inglis, spokesman for the producers. On the contrary, he asserted, the Pinchot plan had been turned down because it did not promise permanent peace and justice. The cry of the miners that the operators were leagued together in a conspiracy to wreck the union was met with the statement that the employers would like to see an even stronger labor organization than the one now functioning.

### Operators Are Receptive

"The door has not been closed to negotiations," said Major Inglis. "Quite the contrary. We are anxious to secure a real and lasting peace, and negotiations to that end cannot be begun too quickly. The difficulty with the Pinchot proposals is that they do not pave the way even for peace, much less a lasting one.

"As to arbitration, we are willing to accept any plan or scheme that will provide for reasonable, fair and impartial determination of the conditions and make awards in accordance with such determination. Governor Pinchot has not proposed arbitration. What he proposed is to be the index to wages and prices for five years. No person knows what changes will come in that time and no sane business man will make a contract that he is not certain he can keep. The contract proposed would in the end be bad for all and for the men most of all.

"There is no desire on the part of the operators to break down or weaken the union. We want a strong union, even a stronger one than we now have. The trouble is the union is not strong enough. It is strong politically but not constructively. Absolutely the last thing we would wish would be a return to the conditions existing prior to the coming of the union."

Governor Pinchot accused the operators of rejecting peace for industrial war, but still expressed the hope that his program eventually would be accepted. Something of this last hope seemed to be in the minds of the scale committee of the miners as its members left Harrisburg. President Lewis, who seized upon the new deadlock as an opportunity to revisit his family, was less bellicose than usual in his condemnation of his opponents. "The fight is now between the public and the operators," was his statement before departing for Springfield, Ill.

### Father Curran Still Active

Other figures in the controversy were less restrained in their comments. Thomas Kennedy, international secretary-treasurer of the United Mine Workers, declared that the operators "have now come out in the open and are out to smash the union and to force wage reductions." Father Curran, of Wilkes-Barre, again criticized the attitude of the operators, but renewed his efforts to win acceptance to his proposal for a 5-per cent increase and a modified check-off. Some of the local unions in the region, particularly in District No. 1, demanded that the maintenance men be withdrawn in reprisal for the operators' refusal to accept the Pinchot terms. Certain workers in the southern end of the field also took a similar stand, but the higher officials of the organization have declined to sanction the demand.

First reactions to the operators' rejection among the men were favorable to the union. Morale was strengthened. Underneath, however, were signs of growing dissatisfaction with the continued suspension and despair over shattered hopes. Observers in the region noted a more intensive program of economy, the disappearance of the holiday spirit with which the strike was welcomed. The movies so far have survived the general depression, but merchants in the region are gloomy because of the marked curtailment in buying and the outlook for a slim Christmas business.

These unfavorable prospects spurred the business interests of the anthracite region to fresh efforts to effect a resumption of mining. The Chambers of Commerce of Scranton, Wilkes-Barre and Hazleton took the lead in this movement. The Pinchot program, reported to have had their indorsement at the time it was submitted to the operators, was scored and the report of indorsement repudiated. Commercial interests denounced the program as a political maneuver designed to further the Senatorial aspirations of the Governor. The immediate upshot of this "rebellion" against political interference was the invitation of the Governor to the business leaders to confer with him in Harrisburg on Tuesday of this week.

### Round-Robin Advises Industry

Establishment of a "continuing joint agency" to study the underlying "economic and technical facts" of the industry was offered as the only permanent solution of the troubles besetting anthracite, in a round-robin to Major Inglis and Mr. Lewis signed by forty-one engineers and economists at a meeting in New York on Dec. 4. The signatories, including a number of well-known college professors and past presidents of engineering societies, declared their belief that no agreement will insure continuity of production and distribution in the future which did not set up the agency suggested.

"Observation and experience convince us," asserted the forty-one, "that joint effort on the part of management and workers in improving methods of production and distribution can increase wages and lift and stabilize earnings at the same time that they lower the price to the consumer. The constructive results of such joint effort would, we believe, be of far larger importance both to you and to the consumers of anthracite than the mere temporary settlement of symptomatic grievances. We submit that the present price of anthracite and the recurring interruptions to its production constitute a challenge to you jointly to grapple with these fundamental problems of economic and technical organization."

"We entirely agree," replied the Anthracite Operators' Conference on Dec. 7, "that so far as our industry is concerned, the need is for 'constructive consideration of the underlying economic and technical facts by which all questions of wages, working conditions and earnings must, in the end, be determined.'

"The basis of consideration you propose, namely, one of facts, and which will take into account all economic, industrial and commercial factors, has our hearty assent. The ideas you express are upheld by the findings of the U. S. Coal Commission which said in effect that what was needed was more dependence on facts and less on force. It is for the maintenance of this principle that we have been contending from the beginning of the present dispute."

Although on the surface operators and miners are still far apart on the key issue of arbitration, there are some who privately take a more optimistic view of the situation than they are willing to acknowledge publicly. They feel that the men themselves are anxious to get back to work and that the union leaders would like to find a way out of a tight corner. In support of this view they point out that the union in its dubious acceptance of the Pinchot program agreed to a limited arbitration of wage issues despite earlier fulminations against anything smacking of such determination. They are confident that the more the public comes to understand that the operators are willing to submit the whole dispute to unrestricted arbitration, the less the union will be able to resist the pressure for settlement.

The greatest danger spot is Congress. Senator Borah undoubtedly will lean upon the anthracite strike to support his plea for favorable consideration of his legislative program on coal. Senator Oddie may be expected to do likewise. Radicals like Representative Berger of Wisconsin will see in the situation an opportunity to press their doctrines; other members of Congress who are disposed to make political capital out of the suspension will not be silent.

## Jersey Names Coal Board

A coal commission of twelve members was appointed last week by the New Jersey State Chamber of Commerce to act to protect the fuel requirements of the state under the conditions created by the anthracite strike. The members of the commission are:

James Wilson, Paterson (chairman), vice-president, State Chamber of Commerce, Paterson Coal Dealers' Association; James C. Tattersall, Trenton, director, National Retail Coal Merchants' Association; C. B. Ace, Hoboken, president, Hudson Coal Credit Association; Richard McAllister, Jr., Camden, representing coal dealers in southern New Jersey; A. E. Broadbent, Newark, acting secretary, New Jersey Coal Dealers' Association; F. C. Conkey, Elizabeth, acting secretary, Central New Jersey Coal Exchange; J. J. Mantell, vice-president, Erie R.R.; R. M. White, superintendent, Delaware, Lackawanna & Western R.R.; C. H. Stine, general manager, Central R.R. of New Jersey; F. H. Moser, coal freight agent, Lehigh Valley R.R.; Frank A. Keys, coal freight agent, Baltimore & Ohio R.R., and J. W. Warwick, special operating agent, Pennsylvania R.R.

## *Act on Commission Report to Meet Emergencies, Says Coolidge*

In his message to Congress, delivered at Washington Dec. 8, President Coolidge made the following comment and recommendations in regard to coal:

"The perennial conflict in the coal industry is still going on to the great detriment of the wage earners, the owners, and especially to the public. With deposits of coal in this country capable of supplying its needs for hundreds of years, inability to manage and control this great resource for the benefit of all concerned is very close to a national economic failure. It has been the subject of repeated investigation and reiterated recommendation. Yet the industry seems never to have accepted modern methods of adjusting differences between employers and employees. The industry could serve the public much better and become subject to a much more effective method of control if regional consolidations and more freedom in the formation of marketing associations, under the supervision of the Department of Commerce, were permitted.

"At the present time the national government has little or no authority to deal with this vital necessity of the life of the country. It has permitted itself to remain so powerless that its only attitude must be humble supplication. Authority should be lodged with the President and the departments of Commerce and Labor, giving them power to deal with an emergency. They should be able to appoint temporary boards with authority to call for witnesses and documents, conciliate differences, encourage arbitration, and in case of threatened scarcity exercise control over distribution. Making the facts public under these circumstances through a statement from an authoritative source would be of great public benefit. The report of the last coal commission should be brought forward, reconsidered, and acted upon."

## Says Real Secret of Safety Is Co-operation

Phil Penna, secretary of the Indiana Coal Operators' Association, expressed the predominating thought of the safety conference called recently by the Indiana mining board when at the end of the meeting he said: "The sooner operators and miners forget politics and their differences and go into co-operative efforts in safety promotion the better for all of us. If safety precautions and safe practices cannot be enforced by co-operation, it can't be done."

More than a score of delegates representing coal mine operators, miners, insurance companies, the state department and the U. S. Bureau of Mines attended the meeting. William Johnson, president of the state mining board, presided at the conference.

Francis Feehan, mine safety commissioner of the U. S. Bureau of Mines, explained what had been accomplished along safety promotion as a result of co-operation in several districts around Pittsburgh. He said some states had laws regulating the miners in taking proper precautionary measures for their own safety that he would recommend for Indiana. He explained the suspension system now employed in some fields. He also said that Indiana mines were violating one of the most necessary precautionary measures in continuing to use the open-flame lamp instead of the electric torch.

J. H. Gritner of Illinois, representing the Associated Insurance Companies, in summing up the results of the conference, said it was evident that co-operation was the fundamental need, that there was an obvious need for law revision in Indiana and that supervision should be clothed with the authority to inflicting penalties.

## Court Remands Utah Land Case to Trial

Carbon County, Utah, has been adjudged not implicated in the proceedings brought by the government to recover title to coal deposits assigned to individuals through alleged fraudulent means. The decision was rendered by the U. S. Court of Appeals sitting at St. Louis. The Carbon County Land Co. made use of the state as a mere conduit through which the lands were fraudulently acquired, the court decided. It is believed that the case will go to the U. S. Supreme Court for final decision.

The federal government brought suit to try to disprove title of the Carbon County Land Co. and the Independent Coal & Coke Co., and the defendants moved for a non-suit on the ground that the government was barred by the statute of limitations. Federal Judge Johnson upheld the plea for a non-suit, and the Circuit Court of Appeals has now reversed his decision, remanding the case for trial and requiring the defendants to answer. It is said that the importance of the case is found in Utah's fight against the federal government's policy of centralizing power and depriving the state of valuable land granted under the enabling act. The land grants were selected by the state between 1900 and 1904 and were classified at that time as non-mineral. The classification was based on the ruling of the Interior Department which was to the effect that no coal land was mineral in character unless coal in commercial quantities was exposed in each 40-acre tract. This classification is alleged to have been approved by the Secretary of the Interior.

# Hard-Coal Control in Borah Bill Opposed by New York Business Men

Opposition to government control of anthracite such as Senator Borah is expected to propose at the present session of Congress was registered Dec. 3 by the New York State Chamber of Commerce at a monthly meeting in New York. This action was taken without discussion, beyond a few remarks by former Senator Calder, who wished that the Chamber would propose something constructive looking toward the correction of coal ills instead of merely opposing legislation. Senator Calder, however, is against the Borah bill.

The Chamber's committee on internal trade and improvements, in its report, summarized the Borah bill—as it was once before prepared—and the arguments against it thus:

The Borah bill creates an anthracite coal division of the Interstate Commerce Commission. Its many provisions comprise 633 lines, indicating the great details into which it goes and the endless amount of interference with the anthracite industry.

We consider this measure one of the most dangerous ever introduced into Congress. It goes farther toward putting the government into business than anything heretofore attempted. It not only declared "the production and distribution of anthracite coal are services indispensable to the health, comfort and welfare of the people of the United States," which is not true, but it proceeds to convict everyone connected with the industry through its assertion that these services "are subject to exorbitant charges and arbitrary control."

This measure not only gives the division of the Interstate Commerce Commission which it creates the right to investigate the ownership and title of the mines, but also "the persons connected with the anthracite coal industry directly and indirectly." The opportunities under this inquisition probably are without precedent in this country. It gives the Commission power to compel persons engaged in commerce in anthracite coal to secure licenses from it and to suspend or revoke such licenses. In other words, it may say just who shall and who shall not engage in the coal business. It is to prescribe standards of weight, size and purity of anthracite and has even the power to issue mandatory orders with regard to the rents and royalties paid by operators and the prices for which coal is to be sold.

A point which requires special emphasis is that which authorizes the coal commission to serve as part of the main Interstate Commerce Commission in the hearing and determination of all cases involving anthracite freight rates, car distribution to anthracite mines and regulations of carriers affecting the anthracite coal industry.

### Opposes Super-Regulation

Under this provision, the coal product of only eight counties in the State of Pennsylvania would be singled out for a closer measure of government scrutiny and interference than any other industry in the country. The railroads which serve this industry would have imposed upon them a super-regulation far in excess of that of carriers which do not handle anthracite as a major part of their traffic. This super-regulation would compel the affected railroads to make a volume of special reports, as the Commission may require, regarding their "organization, business, conduct, practices, management and relations to other persons"

Obviously the adoption of any legislation of the sort proposed must necessarily serve to make a continuance of the anthracite industry even more difficult than it has been made as a result of the frequent strikes of the miners.

At the same time it is not desirable that new regulations be imposed on the railroads. Such a step could very easily break down once more the credit they have so laboriously built up since the government's experiment in operating them during the war.

P. & A. Photos

**William H. Woodin**

Elected president of the American Locomotive Co. last week. He also will retain his position as president of the American Car & Foundry Co., with which he has been identified since its inception, in 1899. He was Fuel Administrator of New York State during the latter part of 1922, following the general coal strike.

The anthracite labor situation is complicated by the miners' license law, which makes it unlawful for any miner, no matter what his experience or competence, to work as such in Pennsylvania unless he has been employed in that state for at least two years as an anthracite miner's helper, and has been granted a certificate by a state board of examiners composed of practical miners. Many important business interests in the State of Pennsylvania believe this law is unreasonable and discriminatory. It has had much to do with the serious trouble with which the anthracite industry has suffered since its passage in 1897.

Your committee on internal trade and improvements believes there is no more reason for congressional action looking to the regulation of the production and sale of anthracite coal than for similar legislation as to copper, wool, oil, wheat, sugar, or any other staple commodity.

# Mines Co-operate to Fight Oil Competition

A unique plan has been worked out by coal mining companies of western Washington to combat the competition of fuel oil, particularly in heating dwellings. The Pacific Coast Coal Co., Seattle; Bellingham Coal Co., Bellingham, and Wilkeson Coal & Coke Co., Wilkeson, have formed a corporation known as the Automatic Coal Burner Co., of Seattle, and through this agency are marketing a new type of automatic coal stoker, which has been installed by apartment-house and dwelling owners to replace fuel-oil systems, and greater efficiency is claimed for the new device.

The new automatic coal stoker consists of a hopper, which is filled with sufficient fine coal for a day's requirements, and a motor with a screw drive which feeds the fuel into the firebox under thermostatic control. The owner sets the thermostat and the stoker automatically keeps the heat within two degrees of the temperature indicated. Besides utilizing a cheap grade of fuel, less coal is used and there is no loss in handling or storage. The most outstanding advantage pointed out by the users of the device is elimination of the explosion hazard attendant upon using automatically controlled fuel-oil burners.

# Vandalism Renewed in W. Va. Strike Zone; Union Builds Barracks

Violence broke out in the northern West Virginia coal fields again last week, when vandals tried to burn down the wagon-mine tipple of W. F. Shafer early Dec. 3 at Brummage mine, near the city limits of Fairmont. The tipple, which is small, was saved from ruin by the city fire department.

Three alleged union miners tried, Dec. 1, in the Harrison County Criminal Court at Clarksburg for burning down the tipple of the Consolidation Coal Co. at mine No. 55, at Meadowbrook, Harrison County, on Aug. 29, were acquitted.

The Consolidation Coal Co. has 200 or more miners at work in the Monongah mine and substantial progress is being made at the three mines of the company at Wyatt.

Coal production at non-union mines in the 12½ counties of northern West Virginia totaled 7,185 cars in the first four days of last week compared to 5,887 cars for the corresponding period of the previous week, which was low because of the observance of Thanksgiving Day. Union mines in the first four days of last week loaded 1,173 cars of coal compared to 886 cars in the corresponding period of the previous week.

On an average 220 non-union mines were at work in the region during the first four days of last week. Fourteen union mines worked daily on the average in the region in the same period. The largest number to work was 16, on Nov. 30 and Dec. 1. Since then the two union mines on the Monongah Division, B. & O., have closed down.

Officials of the United Mine Workers said early last week that they will be obliged to care for 1,400 families of striking union miners by Feb. 1, due to evictions which various coal companies will exercise. The work of erecting additional barracks was well under way last week.

It is reported that approximately $100,000 a month is being spent in the Fairmont field for relief at present.

# 65 per Cent of Bay State's Hard Coal Needs In

Stocks of domestic anthracite in dealers' yards in the State of Massachusetts on Nov. 1, 1925, according to the Special Commission on the Necessaries of Life, totaled 336,908 net tons. As stocks on hand April 1 were 725,558 tons and receipts from April 1 to Oct. 31 inclusive were 2,952,744 tons a total of 3,678,332 tons has been available for distribution, or approximately 72 per cent of the state's coal-year requirements based on deliveries between April 1, 1924, and March 31, 1925. Deliveries to consumers for the seven months April to October inclusive were 3,341,424 net tons, or 65 per cent of the year's requirements. Stocks in the metropolitan Boston district on Nov. 1 were 142,097 net tons; deliveries, April to October inclusive, 1,335,990 tons; deliveries, coal year, 1924-25, 2,053,630 tons.

# Crisis in Hard-Coal Strike at Hand, Washington Sees Lasting Settlement Or Makeshift Peace in Public Hands

**By Paul Wooton**

Washington Correspondent of *Coal Age*

Whether this anthracite strike settles anything or whether it is to be just one more patchwork compromise is largely in the hands of the public now. The critical period of the struggle seems to have arrived. If the public sustains the anthracite operators in their refusal to have any of Governor Pinchot's tinkering, the suffering they have undergone thus far will not have been in vain, many think.

The hard-coal producers have done all they can do. They are holding fast for the principle of arbitration. They have nailed their colors to the mast, but public support is necessary or they will be torn down and a settlement that does not settle will be forced. If the public allows itself to be deceived by Mr. Lewis' claim that the miners are for peace while the operators have declared for a continuance of war, the odds may be swung against the operators and there will be another evasion of fundamental issues that will not down.

Two things are demanded of the public at this time if it wishes to avoid frequent recurrence of the experiences of the past three months. One of these things is to continue to accept cheerfully the inconvenience of substitutes. All that is necessary is for anthracite consumers in other states to emulate the example of the New England Yankees, who have pointed the way to independence from biennial coal strikes. They believe the sacrifice of convenience is not too much to pay for the cure of an ill that has become a running sore on the body politic.

### Stack Cards Against Operators

The other thing which the public may do to protect its own best interest in this situation, competent observers assert, is to take care to distinguish between camouflage and reality. Governor Pinchot and Mr. Lewis have camouflaged compromise and are parading it as arbitration. What they really are offering is a stacked deck of cards—stacked against the public and against the operators in favor of the mine workers. The results of the brand of alleged arbitration which they are sponsoring can favor only one party to the controversy. The need of economy and increased efficiency is stressed, but the sole beneficiaries are to be the miners. If the impartial tribunal discovers that profits are needlessly large or if it finds a way of cutting costs, the entire surplus, the whole saving, is to go to wages. That the operators rejected such a clumsy semblance of arbitration causes no surprise in Washington.

Real arbitration, it is pointed out, does not prejudge the verdict. By agreement arbitration may limit the subject to be considered but would not direct arbitrators to find for one side. The great need of the hour, public-spirited observers say, is that the public recognize the spurious character of the Pinchot settlement.

Some newspapers are condemning the operators for prolonging the strike. It is notable, however, that such a reaction comes largely from newspapers that frequently express half-baked and superficial editorial opinions or from newspapers that are notoriously demagogic. The well-informed and profound thinkers among the editorial writers will be found supporting the position of the operators.

The real need of the situation would appear to be, however, a mandate from the consumers of anthracite that no settlement be accepted until there shall have been written into the terms of the contract a provision for keeping the mines in operation during negotiations and for the submission to arbitration of all points on which agreement cannot be reached.

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## Glace Bay Living Conditions Worst Ever, Says Doctor

At the session of the Nova Scotia Coal Commission at Sydney, C. B., on Nov. 18 James B. McLachlan, former secretary-treasurer of district No. 26, United Mine Workers, and a prominent Communist, asserted that the object of the British Empire Steel Corporation in fixing wages was to make operations pay dividends on idle assets.

When the examination of McLachlan was continued on the 19th, he stated at some length his views on labor conditions and education. He said he believed that there would be no end to the unrest until the men had enough to live on and the fear of unemployment was removed. The Communist party, he said, had changed from a territorial body to a factory organization. Several miners testified as to unfavorable working conditions at Colliery No. 22, where men from Birch Grove and Port Morien were employed. Not enough working places were provided.

Dr. A. S. Kendall, county health officer, testifying Nov. 20, stated that the water supply was inadequate and the sewerage system defective. Many of the houses were unsanitary and some that had been recently built ought to be torn down. The provincial and municipal governments, he said, should join with the coal company to bring about more modern conditions.

Dr. McAvoy stated that he believed that living conditions on the average in Glace Bay were the worst of any place he had seen. The issue of the last strike was clearly defined as to whether the wages should be cut. Dr. D. J. Hartigan, of New Waterford, testified that sanitary conditions were not good, the open drains being a menace to public health.

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## *Test Coming on Fines For Illegal Strikes*

A strike of miners employed at No. 2 shaft of the Buffalo & Susquehanna Coal & Coke Co., at DuBois, Pa., promises to develop a case that will test the fining clauses of wage agreements. This company had imposed a fine of $1 per day on miners for violating the agreement in striking and thus shutting down the mine. The fines amounted to approximately $29 each on 400 miners.

The United Mine Workers had two men bring suit against the company for a refund of the money. The action was brought before a justice of the peace in Sandy township. The company did not appear and judgment was entered by default. The case will be appealed to the Clearfield County Court. The provision for the fine was first put into the wage agreement in 1917 by the U. S. Fuel Administration as a disciplinary measure to prevent outlaw strikes and this is the first time the United Mine Workers has resorted to legal action to resist the collection of such fines.

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## Mining Congress Studies Output and Distribution

Secretary of Labor James J. Davis, Secretary of Commerce Herbert Hoover, Federal Trade Commissioner William E. Humphreys, Representative Joe J. Manlove of Missouri, James Murdock, former Minister of Labor of Canada, and leading mining men from all parts of the United States were scheduled to discuss important questions affecting the production and distribution of mine products at the twenty-eighth annual convention of the American Mining Congress at the New Willard Hotel, Washington, Dec. 9, 10 and 11. The convention was to consider a national labor policy, mine taxation, joint selling agencies in the distribution of mine products and other important mining problems.

Among those who were to outline the requirements of the mining industry in the various mining districts of the country were M. L. Gould, of Indianapolis, Ind., president of the National Coal Association; S. D. Warriner, of the Lehigh Coal & Navigation Co., Philadelphia, and Harry N. Taylor, president of the United States Distributing Corporation, New York.

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## Russian Coal Output Lags Below 1913 Level

During the first nine months of 1925 the total production of coal in Russia was 16,107,000 tons. Of this quantity the Donetz district produced 12,328,000 tons; the Ural district, 1,300,000 tons; Siberia, 1,070,000 tons; the Far East, 700,000 tons; the Moscow district, 556,000 tons, and other districts, 153,000 tons. The output was 56.8 per cent of that of 1913.

## Of 86,000 Killed Annually Less Than 2,400 Perish In Coal-Mine Accidents

Eight times as many men are killed by automobiles as by all causes in coal mines, according to J. V. W. Reynders, president, American Institute of Mining & Metallurgical Engineers, at the joint safety conference in New York City which was fostered by the American Society of Safety Engineers—Engineering Section, National Safety Council and the four "parent" societies, the American Institute of Mining & Metallurgical Engineers, the American Society of Mechanical Engineers, the American Society of Civil Engineers and the American Institute of Electrical Engineers.

Mr. Reynders said that the dangers of coal mining had been greatly overestimated by the public. There were 18,000 fatalities yearly from automobiles and in 1924 only 2,381 fatalities in coal mines. The public, impressed by disasters that gave opportunity for sensational headlines, had become obsessed with the idea that the hazards of the coal industry were much greater than they actually are. So needful had it been to make sensational appeals to Congress in order to obtain funds that the training cars of the bureau had been named mine-rescue cars, though that was only a part of the work that such cars performed.

The death rate in the coal-mining industry figures out so that a 1,000-ton mine, which is quite a sizable operation, averages only about one fatality per year. Mr. Reynders, who is presiding officer of the Advisory Board to the Bureau of Mines, did not, however, regard this as any reason for curtailing the activity of the bureau in the work of safety. Ten cents per ton would not, he said, be an expenditure in the minds of most mining men too large for the promotion of safety in mines. That would be an appropriation of $60,000,000. Instead the bureau receives barely ½c. for every ton mined. He considered the investment a most excellent one.

### Annual Loss, $2,390,000,000

Another interesting paper at that meeting was read by W. C. Dickerman, vice-president of the American Car & Foundry Co., New York City. Mr. Dickerman declared that there were 86,000 deaths from accidents annually and more than 2,000,000 persons were injured. He added that the loss due to accidents was $2,390,000,000 annually. He said that his company had in 14 years spent about $1,000,000 in safety and had saved thereby $2,700,000. He mentioned a brick company whose accident costs were 18.3c. per thousand which had cut the cost to 5c. per thousand, and a construction company that had reduced its accidents 76 per cent. He recalled also the record of the United States Steel Corporation. It had spent $9,700,000 in safety and saved $14,500,000 thereby. He declared that safety work decreased turnover, bettered and increased product and improved morale. Harry Schulze, who spoke later, said that the United States Steel Corporation had cut fatalities 61 per cent and accidents 79 per cent. However, the company regarded the economies of its safety work as the least of its returns. The satisfaction of reducing hazards was greater than any attained by reason of the economies effected.

**E. B. Jermyn**

After a close and bitter contest, Mr. Jermyn was declared elected Mayor of Scranton, Pa., in a court opinion delivered Nov. 25 by Judge H. A. Fuller, who had been named by the state Supreme Court to act as umpire. Mr. Jermyn, who ran on the Republican ticket, won over his Democratic opponent, M. J. McHugh, at present Chief of Police, by the narrow margin of 109 votes. The Mayor-elect served as the city's chief executive from 1914 to 1918. He formerly owned the Langcliffe colliery, near Avoca, Pa., which he operated for a little more than a year.

Walter Rautenstrauch, professor, Columbia University, New York City, declared that ten fatalities occurred in the United States for every hour of the day and night and that, estimating the wages of industrial workers at $40,000,000, the loss from accidents was 5 per cent of that sum.

E. A. Holbrook, dean of the School of Mines, Pennsylvania State College, State College, Pa., spoke in favor of the recognition by colleges of the importance of safety and stressed the greater activity shown by mining colleges in this needful portion of the curriculum.

S. D. Keller, professor of industrial management, of the same college, discussed the same subject and declared that only 5 per cent of all accidents were industrial, 25 per cent occurred in the home and 50 per cent occurred in public places, two-thirds of these last being traffic accidents.

Harold Seagrove gave a demonstration of the use of a mixture of 5 per cent carbon dioxide and 95 per cent oxygen in resuscitation, showing that with normal breathing, breathing induced by the prone-pressure method and breathing intensified by the aforementioned mixture the relative volumes of air expired were 0.41, 1.60 and 1.74 respectively.

The three sessions were presided over by Kingsley Martin, chairman, Metropolitan Section, A.S.M.E.; Robert Ridgeway, president, A.S.C.E., and Michael Pupin, president, A.I.E.E.

## Alberta Coal Control Urged by Stutchbury At Canadian Institute

Remedies for some of the ills of the western Canada coal-producing regions were proposed by Howard Stutchbury, trade commissioner for the province of Alberta, at the seventh annual western meeting of the Canadian Institute of Mining and Metallurgy in Winnipeg, which was held Nov. 3, 4 and 5. The coal session of the convention occupied one day and was presided over by J. A. Richards, inspector of mines. Several addresses were made.

Mr. Stutchbury, in his paper, held out for a stronger anti-dumping law against foreign coals, urged lower freight rates on Alberta coal for the East and suggested a method of reducing the number of "gopher-hole" mines by commission control of all crown lands.

The problem of the "gopher hole" mine is a very serious one to the Alberta operators, being caused in the speaker's estimation by the present regulations affecting coal mining in that province. In 1924 there were 399 producing mines in Alberta, 322 of which produced only 5.66 per cent of the coal mined. Alberta is dotted with abandoned mines of this variety, said Mr. Stutchbury, and "in my belief, it would be in the interests of economy and conservation if many of these mines were consolidated."

A certain section of the coal operators felt that the suggestions were too drastic and would prevent proper prospecting and exploration work, and would entail a great hardship on certain small operators. Mr. Stutchbury refused to enter into any discussion on his paper, stating that the questions involved were too momentous to the coal trade generally to be lightly discussed and that the time was too short to even touch on the subjects.

George R. Pratt, Alberta government fuel engineer, of Winnipeg, read a paper on "The Winnipeg Market for Alberta Coal." In an interesting paper on "The Steam Coal Situation in Manitoba," George B. Saunders, manager of the Consumers Coal Co., declared that the Western mines producing steam coal will find a better market this year in Winnipeg than formerly because lower wage schedules have been signed by the mine workers and because the duty on slack coal coming in from the United States has been raised to 50c. per ton.

## Southern Ry. Denied Permit for Kentucky Extension

The Interstate Commerce Commission has denied an application of the Southern Ry. for privilege to build 20 miles of road from one of its Virginia points into the Harlan County coal fields of southeastern Kentucky. It was held that the Louisville & Nashville R.R. is adequately serving the territory and that it has surveys and plans for extensions and lines connecting with the Carolina, Clinchfield & Ohio R.R., which are now pending before the Commission. Commissioner McChord dissented in the opinion.

# Senator Oddie Reintroduces Coal Bill In Modified Form

Tasker L. Oddie, chairman of the Mines and Mining Committee of the Senate, has reintroduced his coal bill, with important changes.

The provisions for withholding cars from those who fail to report basic facts has been eliminated. The legislation has been divorced from the Department of Mines bill. The Bureau of Coal Economics which it proposes now is placed in the Department of Commerce. The bill also proposes the creation of an "under secretary of Commerce" who would be in immediate charge of a major subdivision of the department, under which all its mining activities would be concentrated.

The bill calls for the creation of advisory committees, one for the bituminous and one for the anthracite industry, who are to confer with the Secretary of Commerce to discuss plans for "storage of coal by the consumer; supply and distribution of coal in times of emergency; equitable adjustment of royalty rates; taxation policies; prevention of waste; improvements in underground management; removal of restrictions on output; the free introduction of machinery in the coal mines under safeguards that will protect the rights of employees; relief from irregular operation and overdevelopment; integration of the industry into larger productive units; improvements in the preparation of coal for market; the training of mining engineers and foremen; the prevention of accidents and compensation for the same; the improvement of housing, sanitation and living conditions in mining communities; improvements in the transportation of coal, including methods of mine rating and car distribution; elimination of needless cross hauls and long hauls, and bulk handling at yards, terminals and ports; improvement in marketing, including standardization of contracts, inspection and grading, wholesale methods, retail costs and methods, and co-operative marketing and buying; promotion of the export coal trade; standardization and simplification of accounts and reports; development of trade statistics; constructive activities of coal trade associations; economy in the use of fuel and power through better combustion, electrification and improvements in gas and coke manufacture; increase in available supplies of household fuel; improvement in labor relations, including reduction of absenteeism and labor turnover, personal management, improved machinery for the adjustment of grievances and the negotiations of wage agreements; and such other possible improvements in the methods and practices of the mining, transportation, distribution and use of coal as will foster the growth and prosperity of the industry and the welfare of the mine workers, and as will insure the public a steady supply of fuel at minimum prices."

The bill also provides for the inspection and grading of coal which, however, is to be on a voluntary basis. It provides for the adoption of an export certificate, if and when the producer desires that such a certificate be extended. It directs the Secretary of Commerce to formulate, with the advisory committees, a plan for distribution of coal during emergencies.

## *Real Earnings of Contract Miners In Anthracite Fields*

Are contract miners in the anthracite fields underpaid?

John L. Lewis, international president of the United Mine Workers, insists that they are. He has repeatedly drawn upon the reports of the Coal Commission, with their misleading figures basing earnings upon the number of starts made, to support his assertion. In a statement published in the Sept. 15 issue of the *United Mine Workers' Journal*, Mr. Lewis declared that the average was $1,700 per year, from which "there must be deducted over $200" for supplies.

Check of actual payrolls, however, tells a far different story.

For example, in 1924, the West End Coal Co. worked 292 days and employed 289 miners. Although full-time work was offered to all, only 174 men, or 60 per cent, worked regularly enough to appear on each of the 24 semi-monthly payrolls. Those that took full advantage of their opportunities earned over $4,000 *net* and averaged less than 6¾ hours per day. The average earnings by $100 groups for the 174 were as follows:

| Miners | Average Annual Earnings | Miners | Average Annual Earnings |
|---|---|---|---|
| 12 | $4,161 | 12 | 2,561 |
| 1 | 3,445 | 11 | 2,448 |
| 5 | 3,358 | 8 | 2,334 |
| 5 | 3,241 | 18 | 2,255 |
| 4 | 3,160 | 12 | 2,165 |
| 6 | 3,034 | 9 | 2,037 |
| 10 | 2,969 | 12 | 1,957 |
| 9 | 2,853 | 11 | 1,846 |
| 13 | 2,754 | 1 | 1,733 |
| 13 | 2,674 | 3 | 1,680 |

The average per man for the entire group was $2,613. Over 50 per cent of the group earned more than $2,500 per annum. Less than 16 per cent of the group received under $2,000. Only 24 of the 174 worked every day the mine was in operation. The three men in the lowest rated group ($1,680 per annum) worked only 249 days.

Unskilled labor in this colliery was paid 58c. per hour, as compared with rates of 25 to 45c. per hour in other industries.

## Attack Non-Union Miners at Pittsburgh Coal Co. Mine

Two negro miners were beaten severely, two deputy sheriffs were slightly injured and considerable excitement resulted at Library, Pa., Sunday, Dec. 6, when a mob believed to include members of the United Mine Workers and their wives attacked employees of the Pittsburgh Coal Co. The attack followed a mass meeting held by the union miners at Library, where the coal company is operating Montour No. 10 mine on the 1917 scale.

The tipple was stoned by the mob and the two deputies were injured by missiles. The negroes were attacked as they alighted from interurban street cars. One man was imprisoned in an automobile and carted from one point to another, being beaten at each stop.

The Pittsburgh Coal Co. set a new production record for the five mines working in western Pennsylvania under the 1917 scale in the week ended Dec. 5, when 19,755 tons of coal was produced. The amount loaded by each mine was Banning No. 2, Youghiogheny River, 6,378 tons; Banning No. 1, 4,503 tons; Midland mine, near Canonsburg, 5,300 tons; Montour No. 10, Library, 3,059 tons, and Mansfield mine, at Carnegie, 515 tons. The number of men at work by the end of the week was 1,040, a new maximum.

## To Discuss Economic Branch Of Mine Bureau

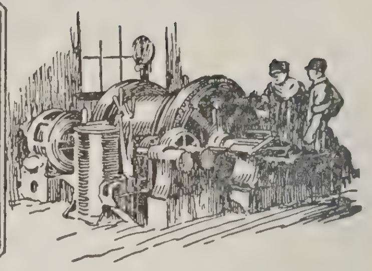
An important meeting of the Bureau of Mines advisory committee will be held Dec. 12 in Washington. Final reports of the sub-committees will be submitted at that time and the organization of the new economic branch discussed. The broad outline of organization has been approved but much remains to be done in the way of subdivision and in the selection of personnel to head up the commodity sections. C. P. White, in addition to his duties as assistant director, will continue to direct the coal work, which is expected to absorb one-half of the appropriations that will be available for use in the economic branch.

It is expected that most of the commodity places can be filled from the present staff of the Bureau, but one requirement will be a first-hand knowledge of the industrial side of mineral commodities.

## Brings Contempt Verdict For Stream Pollution

Seven coal companies and four individual operators were adjudged in contempt of court following a hearing in Fayette County (Pa.) Court Dec. 3 in the Indian Creek water case. The case resulted from an order in which the coal companies were directed to abate the pollution of water in Indian Creek from mine workings. The Rogers Coal Co., Warwick Coal Co., Mill Run Coal Co., Charles Rose, John W. Barger, trading as Rice & Watkins Coal Co., Laurel Run Coal Co., Indian Ridge Coal Co., Ralph Ritenour, Simon Snyder and the Wingrove Coal Co. were the parties haled to court.

# Practical Pointers For Electrical And Mechanical Men



## Portable Cord Serving as Cable For Underground Power

Coal cutters and loading machines used in Mine A of the Pike County Coal Corporation, Petersburg, Ind., are operated by 220-volt induction motors. The use of this type of motor requires that the voltage be held close to normal. This means that power must be taken into the mine at a voltage of 2,300 or more, and that the step-down transformers should be kept close to the motors.

It would be an expensive proposition to distribute the alternating-current energy from a centrally-located entrance, especially to motors which have no permanently-fixed location. At Mine A the 2,300-volt energy is distributed on pole lines along the surface and taken down through boreholes. The cover over the coal is fairly uniform in thickness, averaging about 100 ft. To this depth it is not expensive to drill a 6-in. borehole which is the size used for the 2,300-volt cables.

A feature of the borehole installations is the inexpensive electrical construction. This is indicated by the accompanying photograph. A No. 10 three-conductor rubber-sheathed cord is used. Each conductor is made up of 81 wires covered by a $\frac{1}{16}$-in. wall of rubber. The outer sheath consists of $\frac{3}{32}$ in. of rubber and the overall diameter of the cord is approximately $\frac{5}{8}$ in. The weight is only about 35 lb. per 100 ft.

The cord is carried down through the borehole in a $\frac{3}{4}$-in. iron conduit, which is supported at the top of the hole by a clamp resting on the end of the 6-in. borehole casing. The cord is so light in weight that it is supported by a firm wrapping of tape at the top of the conduit. A means of opening the circuit, and protection in case of trouble, is afforded by fused cutouts on the pole.

At the bottom of the borehole the $\frac{3}{4}$-in. conduit and No. 10 cord both end at a junction box from which a standard 2,300-volt rubber cable extends to the transformers. The maximum distance that the transformers are allowed to be located from the borehole is approximately 1,300 ft. When the mine development gets beyond that limit, a new borehole is drilled. The transformers, three in number and each of 37.5-kva. capacity are mounted on a mine-car.

The connected load on each bank of transformers consists of a 125-hp. motor driving the hoist of a loading machine, a 15-hp. motor driving the dumping platform, a 5-hp. motor driving the car spotter, and a 50-hp. motor driving the mining machine. The fact that the mining machine is not used while the loading machine is in operation, and that the load is intermittent on the hoist, makes possible the use of the small conductor through the borehole.

**A Small Cable for a Big Job**

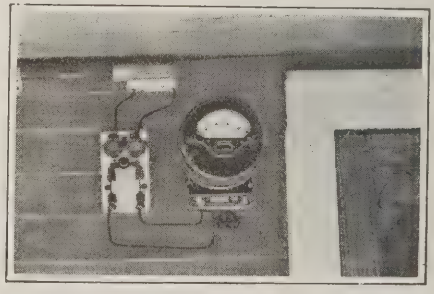
This No. 10, three-conductor, rubber-sheathed cord, approximately $\frac{5}{8}$ in. in diameter, carries 2,300-volt energy through the borehole to a connected load of 195 hp., but shows no sign of overload.

### 300 Kw. Cut from Load by Metering Houses

When electric light lines to company-owned houses in coal towns are not metered it is the common practice to charge the house occupant 25c. per lamp per month and to maintain 24-hr. service. Most coal companies operating with this arrangement lose money on their house lighting. The plan also encourages the theft of headlight lamps and of other high-wattage lamps from the mines and company buildings. In certain instances there are other disadvantages of a flat rate. Metering usually is preferable. A specific case is that at the Stone division of the Fordson Coal Co. in Kentucky.

At Stone a reduction of 300 kw. in the power plant load resulted from the installation of meters in all houses and company buildings. This reduction was desirable because of the overloaded condition of the power plant equipment.

The accompanying photograph of a meter on the front of a miner's home at Hardy, Ky., is typical of all of those on the Fordson houses. Approximately 1,200 meters were installed at mines of the Stone division. The rate now charged is 8c. for the first 25 kw.-hr., and 5c. for all energy more than this amount. It is the intention to lower the rate to 5c. and 3c. as soon as certain improvements have been completed.



**Meter on House at Hardy, Ky.**

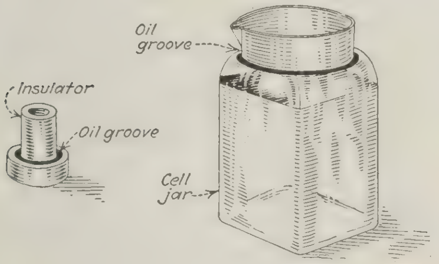
The meter is located on the porch close to the ceiling. This installation is typical of all of those on the Fordson houses. About 1,200 meters were installed at the Stone division.

in the power plant, for taking care of additional load.

The care and reading of the 1,200 meters takes about one half of one man's time. The cost of power used in company buildings such as commissaries, recreation halls, and club houses is charged each month against the respective departments. This practice encourages the turning out of unnecessary lights. The application of meters to double houses necessitated splitting of the wiring into two circuits. In most cases this practically meant that one side of the house had to be rewired.

## Oil Ring Prevents Current Leakage from Cells

Anyone who has been in charge of mine electrical equipment is familiar with the leakage which invariably takes place from cells used for signaling. These cells usually are of either Leclanche or bichromate type. Mining conditions, especially below ground, are often damp and it is difficult to prevent leakage due to the moisture-laden atmosphere causing a conducting surface over the cell jars and about the boxes in which they are placed.



**Oil Grooves Stop Leaks**

A ring of oil formed by a recess in the insulator (left) prevents surface leakage to ground. Cell jars (right) can be made so that an oil groove around the neck stops current from passing down the side of the jar.

### Acid Causes Leakage

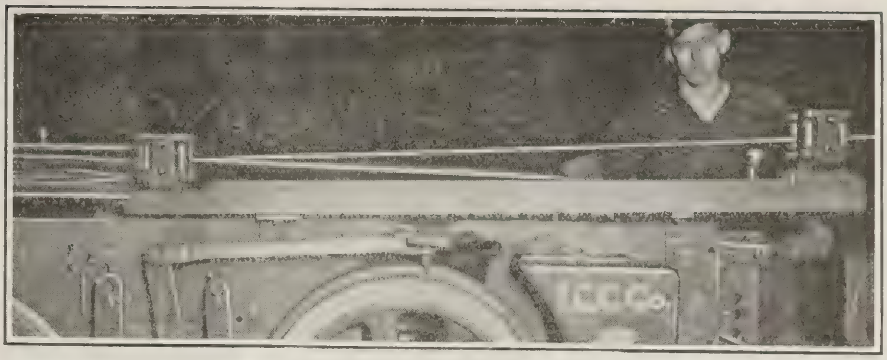
Leakage is to some extent counteracted by a coating of shellac or paraffin placed around the necks of the cell jars during the process of manufacture. This, however, is not sufficient to prevent the acid creeping by capillary attraction down the outside of the cells to the box and setting up leakage which prematurely discharges the whole battery, causing increased maintenance costs and interfering with the efficient operation of the cells. This trouble is often aggravated by operators allowing water or acid to spill when the cells are being recharged.

Much of this leakage can be overcome by dividing the cells into small groups placing each on a board supported on insulators. A better plan is to employ insulators provided with a groove for carrying a small quantity of heavy insulating oil or grease as shown at the left in the accompanying drawing. An alternative is to have the cell jars made with an oil groove just below the lip as shown at the right in the sketch. The advantage of this method is that each cell is provided with its own insulation ring, which effectively prevents creeping of acid, and insures protection against leakage.

L. Fokes.

England.

## Grounds Are Reduced by Insulated Guides



**These Cable Guides Are Safe**

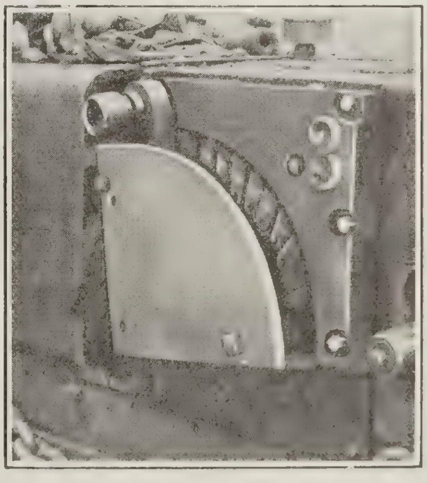
When they are not insulated the combination of a bad cable and a worn roller results in a short circuit close to the motorman's eyes. With the arrangement shown here there is little chance of the cable touching any part of the locomotive and becoming grounded. The guide unit can be changed by removing two bolts.

Several years ago the Island Creek Coal Co. found that it is worth while to insulate cable reels from the frame of the locomotives. A comparatively recent practice of the same order is that of insulating the cable guides. This not only reduces delays and repair costs, but also is a safety feature of importance.

In time, reel cable becomes frayed and likewise the wooden rollers of the guides wear or break, thus exposing the metal parts. When the body of the guide is not insulated from the locomotive frame, the combination of a bad cable and a worn roller will result in a ground which forms a short circuit from the trolley to the rail through the cable. The common result is a severed cable and an interruption of power to that section or to the whole mine by the opening of a circuit breaker. Far more serious results are injury to the motorman by the arc, and a wreck caused by his falling or jumping off the locomotive.

The method used at the Island Creek mines to insulate the cable guide from the locomotive is shown in the accompanying illustration. The two guides are mounted at the ends of a piece of 3x4-in. oak plank, the use of which brings one guide beyond the end of the top of the locomotive. This, and the fact that the wood is continuous between the two guides minimizes the chance of the cable touching any of the grounded parts of the machine.

All of the gathering locomotives of the Island Creek company are equipped with wood supports. Extra mountings complete with cable guides are kept at each mine. The fact that but two bolts hold the support in place makes the changing of a guide unit an easy matter. The locomotve shown in the picture is one of the oldest in use at the Island Creek mines. It was purchased about 1910 and recently was entirely rebuilt; this included the renewal of all rivets, and it is again practically as good as new.



**Controllers are Guarded**

This electric undercutting machine, No. 3, was "snapped" while being repaired, at No. 8 mine, Stone, Ky. The old type of open controller, with which the machine is equipped, has been guarded by the addition of a sheet of $\frac{3}{8}$-in. fibre, thus minimizing the chance of burns or shock.

# Problems In Underground Management

## "Slab System" Increases Percentage of Lump and Lessens Labor

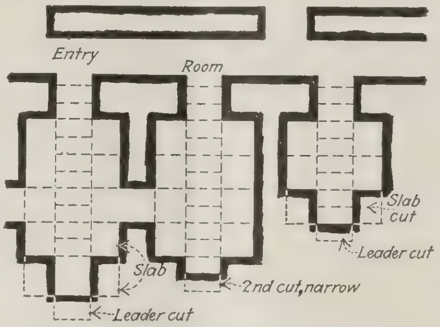
Various methods for increasing the proportion of lump coal produced in mining have been suggested from time to time. Most or all of these schemes have tended either to increase the labor necessarily expended or the cost per ton. Under the plan of working about to be outlined, however, and which I shall term the "slab system," the cost should not be increased and the labor expended should be appreciably lessened while a larger percentage of lump should be obtained.

Under the present usual plan of mine operation a room is necked off the entry or heading. After a certain depth has been attained it is widened out to the full width desired, after which it is driven to the depth limit by a succession of cuts under a straight face.

By the slab system the room would be turned narrow as before, that is, with a width of, say, 12 ft. After this width had been carried in for about 36 ft. a slab cut 12 ft. long is made to the full depth of the cutterbar upon each side of the room thus widening it. On the same shift a face cut is made of the original 12-ft. width. Thereafter two face cuts, or one leader and one finishing cut, are made to each pair of side or slab cuts, the idea being to successively develop 12-ft. slab cuts. To this end, if the cutterbar is more than 6 ft. long the second or finishing face cut may be made of less depth than full bar length.

### Order of Undercutting

After the first two slab cuts (one on either side) have been removed all succeeding slab cuts are left with loose ends. Coal from such cuts requires appreciably less explosive to bring it down than does that for ordinary cuts with tight ends. The order of undercutting would be: On one shift, a leader face cut and two slab cuts would be made; on the next cutting shift, the second or finishing face cut only would be made. This cutting sequence would be followed until the room had attained its full depth limit. The appearance of a mine section operated on this plan may be seen in the accompanying illustration. Naturally, breakthroughs will be driven between rooms at the required intervals and in the ordinary manner.



**Section of Mine Worked by Slabbing.**

Rooms are turned narrow as in the ordinary method, but after a suitable width of entry pillar has been penetrated, slab cuts are made on each side of the room, thus widening it out to both right and left. Thereafter two slab cuts and one face cut alternate with a single face cut. All slab cuts have a loose end and, consequently, do not require as much explosive to bring them down and the proportion of lump is higher than that obtained from faces merely undermined in the ordinary manner.

### System Aids Safety

From the standpoint of safety this system offers many advantages. The method of operation outlined affords an excellent opportunity to support bad roof for the reason that the slab on one side can be shot down, loaded out and the roof timbered even before that on the other side is drilled. The powder consumed per ton of coal produced would be somewhat less than is necessary under the present system, but the proportion of lump would be appreciably increased because of the loose ends of the slab cuts. The drilling required would be exactly the same as under present conditions. The coal brought down, however, would be easier to load because it would naturally fall and roll out toward the track. Impurities could be separated from the coal with greater ease because the pieces would be larger and would not have to be thrown so far to reach the gob. Plenty of coal would always be available for loading because the finishing cut could be made before the slab cuts had been entirely cleaned up.

Opposition from the miners could be anticipated if an attempt were made to introduce this system of working. This is always the case with any improvement. Such opposition would probably center on the narrow work at the face, but I believe that any miner after giving this method a fair trial would find his work so much easier and safer that he would not willingly revert to the system now prevalent.

George E. Harkess.
Shelburn, Ind.

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## Booster Sometimes Decreases Ventilating Power

By F. C. Cornet
Brussels, Belgium

It often happens, when developing a mine, where nothing but coal of a certain height is thought to exist, that the entries eventually penetrate a region that is lower than expected, thus choking ventilation and creating opportunities for the use of booster fans. This low-coal area is connected with the shaft or other mine opening by passages through higher coal. The area of high coal already proved may be sufficiently extensive to permit of attaining a large output but the entries in low coal, or some of them, will be driven on in order to ascertain what conditions lie ahead and plans made accordingly.

Headings and air courses in low coal must, of course, be ventilated, and when driving require a water gage higher than places of the same width driving in high coal. If such passages are widened out their resistance to air flow would be lessened. The reverse of this, however, is what occurs in most cases, for as soon as a mine foreman discovers that the coal taken out of an entry ceases to pay the cost of driving he generally reduces the width of the place to just what is necessary to allow the cars and locomotives to pass. The coal may be so low, in places, that the top or bottom, or both, must be cut into, in order to provide sufficient headroom. But slate work is costly and the foreman, consequently, will reduce it to what is strictly necessary. The increase in cross-sectional area resulting from increased height, consequently, will afford but small relief so far as ventilation is concerned.

### TO REDUCE CROSSCUTS

Crosscuts, probably, will be spaced according to law, but certainly they will be reduced throughout a portion of their lengths, to a hole just large enough to allow a man to pass through. Holes of this kind have the undeniable advantage of reducing the cost of the stoppings. Unfortunately, their cross-sectional area is but a fraction of that of the heading, which is already small. Such passages, therefore, interpose an excessive resistance in the path of the air current. The throttling to which this current is thus subjected in the last breakthroughs makes it especially important to arrange for an energetic ventilation when plans are made for driving entries in low coal.

Experience with this kind of work, mostly in Tucker and Randolph counties, West Virginia, has convinced me that one must not base his provisions for ventilating air on what the coal height actually is, nor on what other conditions may appear to be when so-called low coal is encountered, for in all probability things will get worse before they show any sign of improvement. One may be certain in advance that, before the worst is passed, a ventilating water gage higher than that found to be adequate in the contiguous high-coal workings will be necessary. This higher water gage might well be provided for from the beginning.

### WOULD WASTE POWER

Even though the fan ventilating the contiguous high-coal workings may be capable of furnishing the increased water gage necessary this pressure cannot be obtained except by subjecting the entire volume of air handled to this same increased head. In other words, the water gage affecting a comparatively large volume of air would have to be raised unnecessarily for the sake of furnishing a small ventilating current to the low places. I say "unnecessarily," for if the workings in high coal are well ventilated under a given water gage, it is a waste of power and money, to run the fan at a speed greater than that necessary to develop this pressure. The power waste would be proportional to the difference between the volumes required respectively by the high- and low-coal workings. This difference, under most circumstances, would be large.

Suppose the high-coal operation requires 150,000 cu.ft. of air per minute, under a water gage of 1 in. Suppose also, that three pairs of headings in low coal need altogether 3,000 cu.ft. of air per minute, which a water gage of 3 in. is required to insure. Would it be economical to treble the water gage on the whole 153,000 cu.ft. when the result desired could be attained by making the increased pressure affect only 3,000 cu.ft., which could be done with the help of a small booster fan?

### BOOSTER SAVES ENERGY

In the first case, the power necessary to impel the 153,000 cu.ft. of air would be 72 hp. In the second, the corresponding power would be 24 hp., to which must be added 1.4 hp. or that expended on the air handled by the booster. This makes a total of 25.4 hp. The saving in energy resulting from the use of the booster, would thus amount to 65 per cent.

Whether or not the use of a booster would be advisable in this case probably would depend on its purchase price, its cost of installation and on the length of time it would be needed. The latter factor, in most cases, would be unknown.

### WHERE RESISTANCE IS SMALL

However, one other consideration must be taken into account. Where mine workings offer so little resistance to ventilation that such a small water gage as 1 in. is capable of keeping in circulation a volume of more than 150,000 cu.ft. of air per minute, it would be necessary to create an artificial resistance of some kind, somewhere in the path of the air current, before undertaking to drive the fan, which must obviously be large, to a speed capable of generating the desired water gage of 3 in. Otherwise, two new factors will surely come into play that will raise the power consumption well above the 72 hp. mentioned previously. The new factors are an increase in both the volume and the velocity of the air circulating through the high-coal workings. Power consumption varies directly with the volume of air driven, but as the square of the velocity at which this volume travels.

Another contingency that must be considered is that the stoppings and air bridges which, perhaps, were lightly built, may crack and leak under the new conditions that would prevail in the atmosphere of the high-coal workings, due to the trebling of the water gage. Operators, therefore, will do well to think twice before placing artificial obstacles in the path of the air current ventilating their mines. When confronted with conditions similar to those assumed above, most men would probably go the booster way.

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## Runaway Switch Saves Time and Money

In the Aug. 6 issue of *Coal Age* on page 195 was a sketch of a double-track runaway switch which is in operation at No. 2 Mine of the Union Pacific Coal Co., at Rock Springs, Wyo. This double track is about 500 ft. long, starting from the mine opening to the first entry on a grade of about 10 per cent.

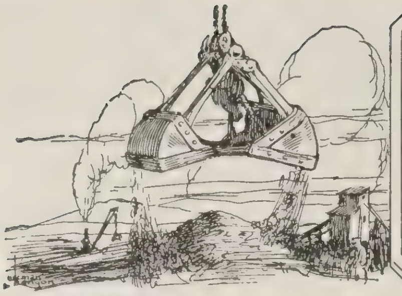
On Oct. 13 it certainly proved itself worthy of mention. A coupling broke near the top, letting eleven cars go back. The runaway cars didn't go far. They were derailed within 100 ft., rubbing against the rib and causing no damage whatever. The other part of the trip was brought back, coupled onto the runaway cars, pulled onto the track again and operation started within 30 min.

### CARS SPILLED LITTLE

The cars are loaded with about a 12-in. top and some were not even broken down. Not more than a ton of coal was thrown off the cars.

Prior to the time this switch was put into operation a runaway of that kind usually caused a delay of from 4 to 16 hr., broken cars and track, and knocked out timber that caused caves. Another feature, no dust was noticed. Does it work? We'll say it does!

CHAS. GREGORY,
Mine Foreman.



# Production And the Market

## Politics Holds Commanding Place in Coal Trade; Mild Weather Handicaps Business

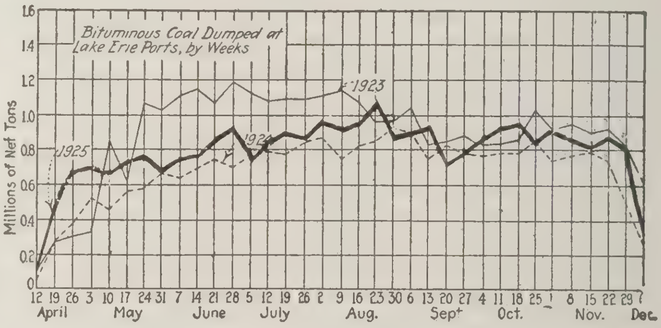
Having taken the stage in the hard-coal controversy, Governor Pinchot of Pennsylvania seems disposed to stick until something tangible has been accomplished—like Mrs. Wiggs, when one plan fails to work he promptly gets to work on another—but whether anything approaching a lasting settlement will result from the Governor's meeting in Harrisburg this week remains to be seen. Some observers profess to see an early end to the strike in the fact that the miners' leaders are at all receptive to plans, but there is nothing surprising about their interest when one remembers —as the operators do—the terms of the Pennsylvania executive's adjustment in 1923.

In most quarters the portions of President Coolidge's message to Congress devoted to coal were considered unusually mild, lacking the specific recommendations for putting the industry in order that many expected. The opening of Congress, however, is fraught with far-reaching possibilities.

Maintenance of bituminous coal production at almost a record rate and the continuance of mild weather have caused symptoms of weakness in the market, though price levels on the whole are being fairly well maintained. Trade in domestic grades is somewhat quieter, steam business pursuing a comparatively even course. The cessation of shipments to the lakes has brought about the usual readjustment, as a result of which there has been a cut in the output of lump and a corresponding falling off in the supply of slack and screenings, with higher prices on the latter.

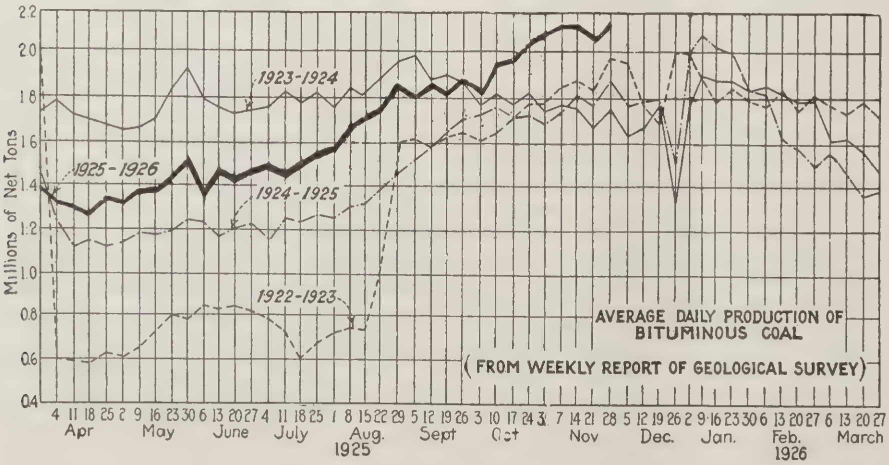
Talk of peace plans in connection with the anthracite situation has made inroads in the market for hard-coal substitutes, consumers showing a disposition to hold back and see what happens. As a result cancellations of orders have been common. There is little doubt, however, that there will be a shortage of hard coal lasting throughout the winter even if Governor Pinchot's efforts should bring about a settlement, and many dealers are of the opinion that heavy buying of coke will continue even when the suspension ends.

Bituminous coal output in the week ended Nov. 28 is estimated by the Bureau of Mines at 11,600,000 net tons, compared with 12,596,000 tons in the previous week. The decline was due to the observance of the Thanksgiving Day holiday. Anthracite production in the week ended Nov. 28 was 36,000 net tons, a decline of 10,000 tons from the week before.



*Coal Age* Index of spot prices of bituminous coal on Dec. 7 stood at 184, the corresponding price being $2.22, compared with 187 and $2.26 on Nov. 30.

Dumpings of coal at Lake Erie ports during the week ended Dec. 6, according to the Ore & Coal Exchange, were: Cargo, 347,329 net tons; steamship fuel, 15,896 tons—a total of 363,225 net tons, compared with 805,424 tons in the preceding week. Hampton Roads dumpings in the week ended Dec. 3 totaled 464,217 net tons, against 483,234 tons in the previous week.



### Estimates of Production

(Net Tons)

**BITUMINOUS**

| | 1924 | 1925 |
|---|---|---|
| Nov. 14 | 10,466,000 | 12,167,000 |
| Nov. 21 (*a*) | 10,910,000 | 12,596,000 |
| Nov. 28 (*b*) | 9,885,000 | 11,600,000 |
| Daily average | 1,912,000 | 2,189,000 |
| Cal. yr. to date | (*c*) 433,150,000 | 467,911,000 |
| Daily av. to date | 1,551,000 | 1,669,000 |
| **ANTHRACITE** | | |
| Nov. 14 | 1,674,000 | 32,000 |
| Nov. 21 | 1,827,000 | 46,000 |
| Nov. 28 | 1,611,000 | 36,000 |
| Cal. yr. to date | (*c*) 82,358,000 | 61,883,000 |
| **COKE** | | |
| Nov. 21 (*a*) | 158,000 | 284,000 |
| Nov. 28 (*b*) | 160,000 | 293,000 |
| Cal. yr. to date | (*c*) 8,691,000 | 9,357,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Weak Symptoms Appear in Middle West

The Midwestern market during the last week has shown symptoms of weakness, principally because the weather has been mild. Domestic coals have suffered most in the decline in prices. Western Kentucky lump, which had been moving at around $2.50, fell as low as $1.85 for a few cars in distress, with the average around $2@$2.15. High grade 6-in. lump coals from southern Illinois are holding firm at $3.50, principally because the operators are still working on a large number of orders that accumulated at $3.25 before they raised their price last November. Eastern Kentucky and West Virginia high-volatile coals are very weak now. Prices vary all the way from $2.25 for 4-in. block up to $3.75. In short, there is no price, as operators and sales agencies are quoting in accordance with the state of their order books and with the idea of keeping their mines on full running time.

Nobody is interested in hard coal. There is no fuel shortage and the demand for coke continues to be satisfactory. Coke prices remain steady as no demand has developed sufficient to increase current quotations. Nobody appears to take much interest in the hard-coal strike situation.

Steam coals are uniformly stronger. Enough talk has gone around that there is danger of a bituminous strike to stimulate purchases, though no sharp advances in prices can be noted. The industries buying are the larger organizations who consume ten to twelve cars a day and more.

Business is not good in the high-grade field of Williamson and Franklin counties nor is it as good as might be in the Herrin field except on lump, and even some mines have some lump "no bills" while others are a couple of weeks behind, but egg and nut and smaller sizes are slow and hard to move and the circular is not always adhered to. The mines that are working are getting from three to five days a week and railroad tonnage is fairly good. Car shortage shows up here and there and the movement of coal is slow, presaging trouble when severe weather comes. Strip-mine operations show good working time although it has been retarded by quiet weather. Their prices are made to meet competition and competition in Illinois coal is bad when Kentucky coal sells from $1.50 to $2 under Illinois prices with the freight rate 25c. higher on Kentucky than Illinois, and in the face of this, Illinois operators raise their prices.

In the Duquoin field there is not a ready market. Strip mines in this field are doing fairly well while shaft mines are getting four and five days a week. In the Mt. Olive field working time is fairly good. This field enjoys rates to points that beat Kentucky coal out. Steam is slow and railroad tonnage fell off sharply Dec. 1. Prices apparently are maintained in spots. Working time is three to four days. In the Standard field it is a hand to mouth existence with prices about at cost of production and plenty of "no bills" of all sizes except 6-in. lump. Prices vary as much

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Dec. 8 1924 | Nov. 23 1925 | Nov. 30 1925 | Dec. 7 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $4.10 | $5.25 | $5.25 | $5.00@ $5.50 |
| Smokeless mine run | Columbus | 2.00 | 3.10 | 3.10 | 3.00@ 3.25 |
| Smokeless screenings | Columbus | 1.25 | 2.60 | 2.60 | 2.50@ 2.75 |
| Smokeless lump | Chicago | 3.85 | 5.10 | 5.00 | *4.25@ 4.75* |
| Smokeless mine run | Chicago | 1.85 | 2.50 | 2.50 | *2.25@ 2.50* |
| Smokeless lump | Cincinnati | 3.85 | 5.25 | 5.10 | 4.75@ 5.50 |
| Smokeless mine run | Cincinnati | 1.85 | 2.35 | 2.35 | 2.25@ 2.50 |
| Smokeless screenings | Cincinnati | .95 | 1.85 | 1.90 | 1.85@ 2.00 |
| *Smokeless mine run | Boston | 4.10 | 5.35 | 5.30 | 5.25@ 5.40 |
| Clearfield mine run | Boston | 2.00 | 2.15 | 1.95 | *1.75@ 2.00* |
| Cambria mine run | Boston | 2.30 | 2.35 | 2.25 | *2.00@ 2.35* |
| Somerset mine run | Boston | 2.15 | 2.25 | 2.10 | *1.85@ 2.15* |
| Pool 1 (Navy Standard) | New York | 2.80 | 2.85 | 2.95 | 2.75@ 3.15 |
| Pool 1 (Navy Standard) | Philadelphia | 2.70 | 2.95 | 2.95 | 2.80@ 3.10 |
| Pool 1 (Navy Standard) | Baltimore | 2.30 | 2.20 | 2.20 | 2.20@ 2.25 |
| Pool 9 (Super. Low Vol.) | New York | 2.05 | 2.30 | 2.30 | 2.15@ 2.50 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.30 | 2.30 | 2.20@ 2.45 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.70 | 2.00 | 2.00 | 2.00@ 2.05 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.80 | 2.00 | 2.00 | **1.95@ 2.25** |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.55 | 1.90 | 1.90 | 1.90@ 1.95 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.70 | 1.75 | 1.65@ 1.85 |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.90 | 1.90 | 1.85@ 2.00 |
| Pool 11 (Low Vol.) | Baltimore | 1.45 | 1.65 | 1.65 | 1.60@ 1.70 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.55 | 1.55 | 1.45@ 1.70 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.60 | 1.60 | 1.55@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.65 | 1.65 | 1.65@ 1.70 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.35 | 2.35 | 2.25@ 2.50 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 2.15 | 2.15 | *2.00@ 2.10* |
| Pittsburgh slack (Gas) | Pittsburgh | 1.20 | 1.45 | 1.45 | **1.50@ 1 60** |
| Kanawha lump | Columbus | 2.30 | 3.10 | 2.85 | 2.75@ 3.00 |
| Kanawha mine run | Columbus | 1.55 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings | Columbus | .90 | 1.20 | 1.20 | 1.15@ 1.25 |
| W. Va. lump | Cincinnati | 2.60 | 3.25 | 3.10 | *2.25@ 3.00* |
| W. Va. gas mine run | Cincinnati | 1.45 | 1.60 | 1.65 | 1.60@ 1.75 |
| W. Va. steam mine run | Cincinnati | 1.45 | 1.50 | 1.55 | *1.45@ 1.60* |
| W. Va. screenings | Cincinnati | 1.00 | 1.20 | 1.25 | *1.10@ 1.25* |
| Hocking lump | Columbus | 2.55 | 3.10 | 2.85 | 2.75@ 3.00 |
| Hocking mine run | Columbus | 1.60 | 1.65 | 1.65 | **1.65@ 2.00** |
| Hocking screenings | Columbus | .80 | 1.25 | 1.25 | **1.30@ 1.45** |
| Pitts. No. 8 lump | Cleveland | 2.45 | 2.55 | 2.50 | *1.95@ 2.75* |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.95 | 1.85 | *1.80@ 1.90* |
| Pitts. No. 8 screenings | Cleveland | 1.20 | 1.55 | 1.45 | **1.50@ 1.65** |

| Midwest | Market Quoted | Dec. 8 1924 | Nov. 23 1925 | Nov. 30 1925 | Dec. 7 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $3.35 | $3.75 | $3.50 | $3.50 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.60 | 2.35 | **2.35@ 2.65** |
| Franklin, Ill. screenings | Chicago | 1.50 | 1.85 | 1.60 | **1.75@ 2.00** |
| Central, Ill. lump | Chicago | 2.85 | 3.00 | 3.00 | 3.00 |
| Central, Ill. mine run | Chicago | 2.20 | 2.20 | 2.30 | 2.25@ 2.35 |
| Central, Ill. screenings | Chicago | 1.35 | 1.40 | 1.40 | 1.35@ 1.50 |
| Ind. 4th Vein lump | Chicago | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.55 | 1.80 | 1.60 | **1.75@ 2 00** |
| Ind. 5th Vein lump | Chicago | 2.75 | 2.35 | 2.35 | **2.35@ 2.65** |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.30 | 1.40 | 1.40 | 1.35@ 1.50 |
| Mt. Olive lump | St. Louis | 3.00 | 2.85 | 2.85 | 2.75@ 3.00 |
| Mt. Olive mine run | St. Louis | 2.35 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.10 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.75 | 2.40 | 2.40 | 2.35@ 2.50 |
| Standard mine run | St. Louis | 1.95 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.05 | .85 | .85 | .75@ 1.00 |
| West Ky. block | Louisville | 2.60 | 2.10 | 2.10 | 2.00@ 2.25 |
| West Ky. mine run | Louisville | 1.60 | 1.35 | 1.35 | 1.25@ 1.50 |
| West Ky. screenings | Louisville | 1.10 | .80 | .80 | **.75@ 1.00** |
| West Ky. block | Chicago | 2.60 | 2.35 | 2.35 | *1.85@ 2.25* |
| West Ky. mine run | Chicago | 1.55 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 3.10 | 2.35 | 2.35 | **2.50@ 3.00** |
| Big Seam mine run | Birmingham | 1.70 | 1.85 | 2.00 | **2.00@ 2.25** |
| Big Seam (washed) | Birmingham | 1.85 | 2.10 | 2.10 | **2.10@ 2.50** |
| S. E. Ky. block | Chicago | 2.75 | 3.75 | 3.60 | *2.75@ 3.75* |
| S. E. Ky. mine run | Chicago | 1.60 | 2.15 | 2.15 | 2.00@ 2.35 |
| S. E. Ky. block | Louisville | 2.85 | 3.60 | 3.50 | *3.00@ 3.50* |
| S. E. Ky. mine run | Louisville | 1.60 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Louisville | .95 | 1.35 | 1.40 | *1.25@ 1.50* |
| S. E. Ky. block | Cincinnati | 2.85 | 3.35 | 3.10 | **3.00@ 3.50** |
| S. E. Ky. mine run | Cincinnati | 1.55 | 1.55 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Cincinnati | .95 | 1.25 | 1.25 | *1.10@ 1.35* |
| Kansas lump | Kansas City | 4.75 | 5.00 | 5.00 | 5.00 |
| Kansas mine run | Kansas City | 3.10 | 3.25 | 3.10 | **3.25** |
| Kansas screenings | Kansas City | 2.30 | 2.30 | 2.30 | 2.25@ 2.35 |

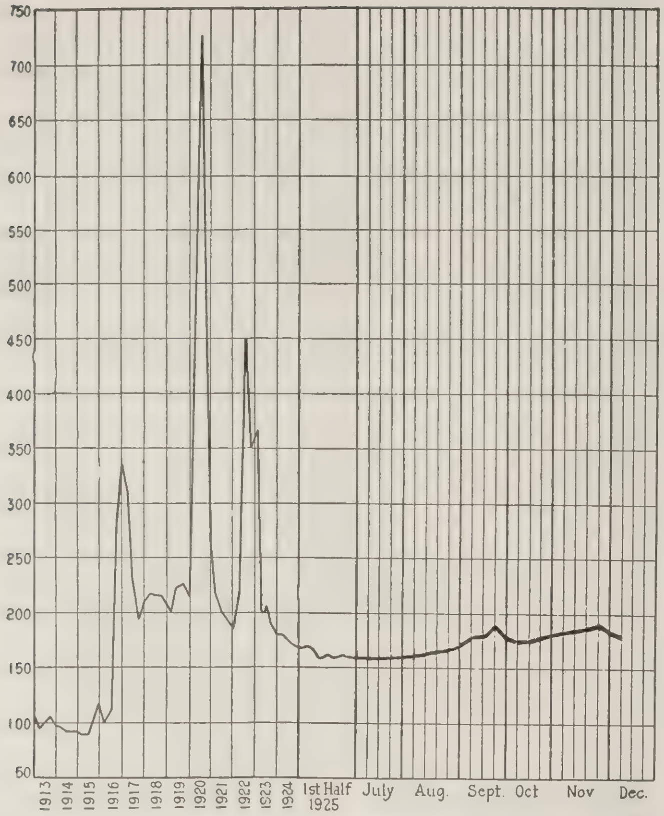
* Gross tons, f.o.b. vessel Hampton Roads.

† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Dec. 8, 1924 | | Nov. 30, 1925 | | Dec. 7, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | | $8.00@ $9.25 | | $8.20@ $8.95 | | |
| Broken | Philadelphia | 2.39 | | 9.15 | | | | |
| Egg | New York | 2.34 | $8.25@ $8.75 | 8.75@ 9.25 | | 8.65@ 8.90 | | |
| Egg | Philadelphia | 2.39 | 9.45@ 9.75 | 8.80@ 9.25 | | | | |
| Egg | Chicago* | 5.06 | 8.17@ 8.25 | 8.15@ 8.20 | $9.50@ 10.00 | 8.03@ 8.25 | $9.50@ 10.00 | $8.03@ $8.25 |
| Stove | New York | 2.34 | 10.00@ 10.50 | 9.00@ 9.50 | | 9.15@ 9.40 | | |
| Stove | Philadelphia | 2.39 | 10.10@ 10.75 | 9.15@ 9.50 | | | | |
| Stove | Chicago* | 5.06 | 8.63@ 8.75 | 8.50@ 8.64 | 10.00@ 11.00 | 8.48@ 8.80 | 10.00@ 11.00 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 10.00@ 10.50 | 8.75@ 9.40 | | 8.65@ 8.95 | | |
| Chestnut | Philadelphia | 2.39 | 10.00@ 10.75 | 9.25@ 9.40 | | | | |
| Chestnut | Chicago* | 5.06 | 8.26@ 8.40 | 8.44@ 8.60 | 10.00@ 11.00 | 8.50@ 8.75 | 10.00@ 11.00 | 8.50@ 8.75 |
| Pea | New York | 2.22 | 4.75@ 5.50 | 5.50@ 6.00 | | 5.00@ 6.25 | | |
| Pea | Philadelphia | 2.14 | 5.75@ 6.00 | 6.00 | | | | |
| Pea | Chicago* | 4.79 | 5.13@ 5.45 | 5.36@ 6.20 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 |
| Buckwheat No. 1 | New York | 2.22 | 2.25@ 2.75 | 3.00@ 3.15 | | 2.50@ 2.75 | | |
| Buckwheat No. 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | | 2.50@ 3.00 | | 2.50@ 3.00 |
| Rice | New York | 2.22 | 1.75@ 2.00 | 2.00@ 2.25 | | 2.25 | | |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | | | | |
| Barley | New York | 2.22 | 1.25@ 1.50 | 1.50 | | 2.25 | | |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | | | | |
| Birdseye | New York | 2.22 | 1.40@ 1.60 | 1.60 | | | | |

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Dec. 7 | Nov. 30 | Nov. 23 | Dec. 8 |
| Index | 184 | 187 | 192 | 171 |
| Weighted average price | $2.22 | $2.26 | $2.32 | $2.07 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to he proportions ach of slack, prepared and run-of-mine normally shipped, and, second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1924, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," publshed by the Geological Survey and the War Industries Board.

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as 50c. a ton on lump coal at different mines. Indications are strong that a proposed merger will go through. Railroad tonnage is light. Working time is three to four days a week with the usual exception. Several mines are idle and all mines carry "no bills." Prices are unchanged.

There is little change in the situation at St. Louis. Coal is moving fairly well for domestic use locally on middle grades and west Kentucky coals, which are beginning to come in heavily; some dealers have given up southern Illinois coal altogether. There is little call for anthracite or smokeless although coke is holding its own. In a general way domestic business is not good and collections are slow. Local wagonload steam continues to show improvement and carload is fairly good, but there is a surplus of coal in the market at all times at all mines on steam. Country steam is quiet but country domestic is fair—buying cheaper coals principally—and there has been a change from Franklin County coals to western Kentucky non-union. No change in prices.

## Kentucky Market Has Possibilities

The Kentucky market is in fair shape, offerings being better on prepared coal, while screenings are tightening up just a trifle. Prices are a little firmer in western Kentucky, where there isn't much shading, but eastern Kentucky prepared sizes have been shaded somewhat on account of larger production, closing down of most of the lake movement and the fact that retailers and other buyers of domestic coal refuse to pay top prices.

Car supply in all sections of the state has improved, loading being faster and cars not being held for long intervals under load at Lake ports awaiting boats.

Domestic consumption is picking up a trifle, although the weather as a whole has been mild over the past ten days. Retailers' stocks are not large, and severe weather would soon bring an active movement of fuel.

Generally speaking, industrial, heating and utility movements are good. Domestic coal is moving into the North and East in better than normal tonnage.

River movement has been somewhat better due to good boating conditions on the Ohio and the fact that some of the West Virginia river shippers are now hustling for river business to replace the lake movement, which is over.

Some eastern Kentucky block coal is priced as low as $2.75 a ton, and some as high as $4, for specialty coal, but the market is around $3@$3.50 for good grade; lump, $2.75 @$3.25; egg, $2.50@$2.75; nut, $2.40@$2.60; mine-run, $1.50@$1.75, and screenings, $1.25@$1.50.

In western Kentucky 6-in. block is $2@$2.25; lump and egg, $1.75@$2; nut, $1.35@$1.50; mine-run, $1.25@$1.50; screenings, pea and slack, 75@85c., and nut and slack, 85c.@95c.

## Warm Weather Brings Lull in Northwest

Warmer weather over the Northwest has been promptly reflected in somewhat of a lull in shipments from Duluth and Superior docks. Car loadings have fallen off during the last ten days, though they are substantially higher than at this time last year. Buying of steam and gas coals by iron and steel plants is especially active. Substantial shipments are going to the Twin Cities to replace Illinois and Indiana coal, which had pre-empted that market before all-rail freight rates were adjusted upward.

Orders from retailers have been light lately, but as stocks are running low in some districts, buying from that quarter is expected to spurt soon. Demand for Pocahontas and other smokeless substitutes for anthracite continues a feature on the market.

Thirty-three cargoes of bituminous coal were unloaded at the docks last week and eleven were reported en route. Coal stocks on the docks at Duluth and Superior have increased to about 4,750,000 tons, of which approximately 2,000,000 tons is owned by railroads.

Quotations are steady and unchanged for both anthracite and bituminous coals, the trade showing no disposition to take advantage of conditions brought about through the miners' strike in the anthracite fields. Inquiry for domestic coke and briquets is gaining and production is being increased correspondingly.

Milwaukee dock managers and retailers report a weather market for fuel. Buying is in small lots and for immediate needs. There is no change in prices, which are steady. The receipts of cargo coal at Milwaukee up to Dec. 3 total 3,609,333 tons. Last year's total on the same date was 3,322,132 tons. During November the receipts by rail were 4,683 tons of anthracite and 45,086 tons of bituminous coal.

The Twin Cities market has been uncertain and irregular, despite the approach of the time when severe weather may set in at any time. The retail domestic consumption is fairly stable, but the steam trade, of which so much had been expected, is still reluctant to take hold. The price schedule is holding fairly steady.

## Supply Catches Demand in Kansas

Continued mild weather has resulted in a light accumulation of lump at Kansas mines. The supply of nut is about equal to the demand, while screenings are a bit short. A little shading is reported, but not as much as in former years under similar conditions. Some operators blame the custom of shading in the mid-season mild-weather slump for the spasmodic market.

In Colorado a sudden rise in temperature has caused a recession in the movement of domestic coal, but few cancellations are coming in. There have been no changes in prices and labor conditions are much improved, with all the mines operating close to capacity.

All sizes of coal are selling in Utah now, but due to weather conditions the demand is not heavy. There is little demand for coal for domestic storage purposes, consumers purchasing in small quantities as they need the fuel. The heating plants are taking coal steadily now, and the demand for steam coal is about normal for the season. Prices are as steady as they ever were; there has been no change since the early fall of last year. Labor conditions are excellent and the car situation is good.

### Readjustment On at Cincinnati

The usual readjustments coincident to the closing of the lakes have been responsible for the feeling-out process that has been on for the last two or three weeks at Cincinnati, regardless of the anthracite strike, weather conditions and all the other market influences.

The tensity of the smokeless situation has eased. While some of the standard Pocahontas houses still held out for $5.50 spot for egg, nut and lump early in the week more of the tonnage was moving between $5 and $5.25 than higher. Mine-run smokeless also was a bit easier, with the market between $2.25@$2.50, the low being obtainable by a little bargaining. Screenings, too, were weaker, more because the big furnaces have come to a place where the market can be squeezed through a letdown in buying orders.

The high-volatile market fared no better. There was a drop of 25c. for West Virginia lump, and egg offerings to the trade went as low as $2.25, where demurrage or "no bills" forced the hand of the seller. A goodly tonnage is still taking as high as $3 or even 25c. better—coal that was bought a couple of weeks ago or stuff that has created a market for itself.

Kentucky block holds up fairly well, but though the price for the month seemed to be around $3.25 a week or so ago, some is being offered around $3 here and there, and a little more warm weather, it is said, would knock it even lower. Because of the Canadian demand for egg the price on this holds up fairly well. Mine-run seems disposed to be the steadiest of the list. A drop in demand for slack has weakened the offerings from both Kentucky and West Virginia another 5c. with $1.10 as the low. High quality slack, such as the Harlans, which had been selling up to $1.50, have eased off to $1.35.

In a retail way there has been little or no change.

River business is at good volume as the tows are favored with a stage that allows an almost regular schedule of discharge.

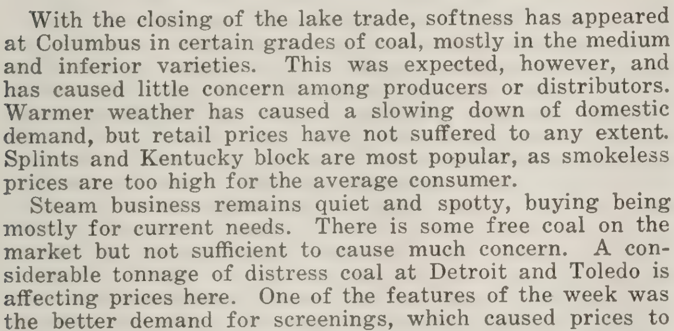
### Lake Closing Brings Softness

With the closing of the lake trade, softness has appeared at Columbus in certain grades of coal, mostly in the medium and inferior varieties. This was expected, however, and has caused little concern among producers or distributors. Warmer weather has caused a slowing down of domestic demand, but retail prices have not suffered to any extent. Splints and Kentucky block are most popular, as smokeless prices are too high for the average consumer.

Steam business remains quiet and spotty, buying being mostly for current needs. There is some free coal on the market but not sufficient to cause much concern. A considerable tonnage of distress coal at Detroit and Toledo is affecting prices here. One of the features of the week was the better demand for screenings, which caused prices to be increased 10c.@15c. per ton. Production is holding up well.

With the cessation of shipments from the mines to the lakes and the prevalence of mild weather, stagnation has overtaken the eastern Ohio market, except on slack and nut-and-slack. "Distress" coal has developed during the week and a slowing up in domestic purchases has caused some cancellations of orders. Pocahontas is now offered at $3.50@$3.75 as compared with $5.50@$6.50 six weeks ago. Other West Virginia and eastern Kentucky domestic coals have suffered a like reaction.

In the steam trade the output of lump has been cut drastically and hence a dearth of slack and screenings has developed, with higher spot prices.



During the week ended Nov. 28 the eastern Ohio No. 8 district produced 297,000 tons or at about the same ratio of operations as in the previous week, but an increase of 57,000 tons over the same week a year ago.

### Pittsburgh Market Still Slipping

The Pittsburgh market has undergone some further weakening both as to demand and as to prices. Regular customers in Pittsburgh and nearby territory are less disposed to act, not that their requirements are diminished but that they have less fear as to supplies in future, with more competition from West Virginia than in the late weeks of the lake movement.

The price of lump has continued to soften, and 3-in. is now quotable at $3@$3.25, with 2-in. and 1¼-in. somewhat easier. There has not been much trading in steam mine-run, but with lower prices for lump the realization is lower and mine-run is affected, being now quotable at $2@$2.10 against $2.10@$2.25 recently. The present market is only a trifle above the level of last summer. Steam slack has now had a second 10c. advance, evidently a reflection of lighter shipments of lump, there being no apparent change in demand. Steam slack is now $1.40@$1.50, gas slack being quotable, as usual, at a 10c. differential above steam.

The market in central Pennsylvania has stiffened noticeably since the anthracite operators rejected Governor Pinchot's peace proposal. Mine-run quotations are as follows: Pool 18, $1.65@$1.75; pool 11, $1.80@$2; pool 10, $2.15@$2.25; pool 9, $2.25@$2.35; pool 71, $2.40@$2.55; pool 1, $2.65@$2.90. Prepared sizes: Lump, $4; egg, $4.50@$4.75; nut, $4. Slack is quoted at $1.50 and prepared coke at $6. Production in central Pennsylvania in November totaled 74,125 cars, compared with 77,974 cars in October. The shorter month, several holidays and five Sundays are responsible for the falling off.

The straight bituminous market at Buffalo is very dull, and there is not much prospect of a revival soon. Recent anthracite developments have hurt the trade some, and the weather is against a brisk market in any sort of fuel. Gas coal is stronger than steam and sometimes brings a little more than regular quotations, which are $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run and $1.25@$1.40 for slack; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump and $1.30@$1.60 for all slack; $1.75@$2 for Allegheny Valley mine-run.

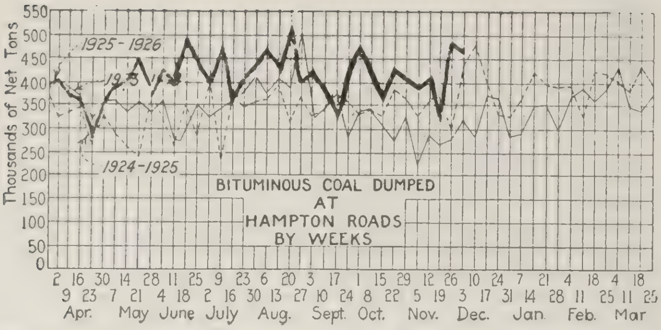
### Demand Is Light in New England

The steam coal market in New England drags along with no developments of any consequence. There is only light demand in every direction, and shippers without seasonal contracts are being pressed to move coal. Not only industries but retail dealers are buying in very sparing amounts; the public is frankly not interested, at least for the present, and the quantity of bituminous actually replacing anthracite has not yet reached any large proportion. Most retail dealers are offering a variety of substitutes from cannel, splint and gas coal to Scotch and Westphalian coke. Connellsville furnace coke had a little vogue here for a time, but high prices turned the demand in other directions and it is probable that during the remainder of the anthracite suspension it will hardly be heard from. Factors here who are trying to merchandise foreign metallurgical coke are having their troubles, and even at $12 on cars the trade is by no means receptive.

At Hampton Roads the volume on cars is heavy and spot sales are only occasional and for relatively small tonnages. Prices range upward from $5.25 for No. 1 Navy standard, but each possible buyer is closely watched. As high as $4.75 per gross ton on board vessel is being asked for New River slack, but almost no sales are reported. This figure compares with a basis close to $4 during the summer.

Shipments all-rail from the smokeless districts to this territory are sloping off, quite contrary to trade expectations. A few operators not in touch with this market have had their fingers burned as a result of sending prepared sizes on consignment. Houses here have been deluged with telegrams asking for offers on coal standing at New England points. With quality grades available from central Pennsylvania at prices less than $5 per net ton at the mine there is no very wide-open market for Pocahontas and New River at much over $4.

Retail dealers are noticing that for the most part con-



sumers are not so critical over substitutes as might have been expected. Apparently there is a disposition to help fight the thing out.

### Mine-Run Has Call at New York

Mine-run continues to feature the market at New York. Buying is heavy as consumers are increasing their reserve stocks as well as using a large tonnage for current consumption.

The failure of screened bituminous to take the place of anthracite, instead of mine-run, has been a surprise to many coal men. Further efforts to spread the use of the latter by house consumers is to be made by the city authorities, who have appropriated $25,000 for the estabishment of coal-burning demonstration stations.

Trade dullness has had its effect upon the shipping of New River and Pocahontas domestic sizes into this market, although several cars have been shipped to Long Island points and further orders have been placed. Quotations range $5@$5.50.

At Philadelphia demand has further decreased following the efforts of Governor Pinchot to bring the anthracite factions together with the idea of resuming mining. The biggest falling off has been in the sized bituminous coals originating in Pennsylvania. The call now is for the better grades, such as pools 1, 9 and 10. There was a slight increase in demand for railway fuel recently, although the prices received are, as usual, a bit under spot quotations. The situation at tidewater is unchanged, with bunkering constituting the chief interest.

Demand at Baltimore, except for prepared sizes, now used as a substitute for hard coal, is not more than seasonal. Prices continue about on the same range as for several weeks past. Industrial demand generally is not overactive, as the majority of business interests, while reporting fair volume, are by no means in the boom stage, or even near it. Exports of coal during November exhibited a gain of 35 per cent over October.

The problem with the Birmingham trade now is not finding buyers but finding coal to meet the market demands. All mines are well booked up on business and there is very little free coal of any quality to be found. Consumers of most every class are represented in the inquiries received and brokers and sales agents are having difficulty in placing orders—in fact much new business is being turned down. Coking coal is short of requirements, the demand for this being especially strong, and the bunker trade is absorbing an unusually heavy tonnage. Railroads, utilities and manufacturing interests are using an abnormal amount of fuel for current requirements and at the same time are endeavoring to creat a reserve supply for the holiday period. All byproduct coke plants are operating at capacity and practically all the beehive ovens in usable condition are now producing coke for commercial use.

Domestic coal is active and the demand for shipments is insistent.

Quotations have shown some increase in the past week, Big Seam ranging $2@$2.25 for mine-run, $2.10@$2.50 for washed, $2.50@$3 for lump; Carbon Hill, $2@$2.25 for mine-run, $2.25@$2.50 for washed, $3.25@$3.50 for lump; Cahaba mine-run, $2.25@$2.50; washed, $2.50@$3; lump, $4.25@$5; Black Creek washed, $2.50@$3; lump, $4.50@$5; Corona mine-run, $2.50; washed, $2.75; lump, $4; Montevallo lump, $5.75@$6 mines.

The coke market is strong with foundry grades quoted $6@$6.50; nut and egg sizes, $4.75@$5.50 per ton ovens. Demand exceeds the supply.

Coal production is at the rate of approximately 420,000 tons per week. Car supply is reasonably adequate now.

### Pinchot's Activity Dulls Hard-Coal Market

With the domestic sizes of anthracite practically out of the New York market and retail dealers' supplies well-nigh depleted, consumers are inclined to use substitutes in larger volume. Peace rumors, coupled with Governor Pinchot's efforts to settle the strike resulted in some cancellations of orders. Buying during the week has been spasmodic. There has been no steadiness and quotations for the available pea and No. 1 buckwheat fluctuated considerably.

Some British coal arrived during the week and it is reported that another cargo of German product is about due in the New York harbor. The British coal is finding a ready market as a substitute.

Quotations for independent pea coal range $16@$16 alongside; No. 1 buckwheat, $8@$8.25; for rice, a small quantity of which was offered, at $8@$8.75, alongside.

Coke's place as a substitute is well established and most retail dealers look for a continuance of heavy buying even after the ending of the hard-coal strike. Retail dealers in various parts of the greater city are quoting coke at $13.50, delivered in bins. An abundance of coke is to be had, but buying is easy. Some grades of crushed beehive coke are quoted at $6@$6.50, ovens. Run of oven product is quoted at around $4.

Governor Pinchot's efforts to end the strike and a continuance of mild weather brought the Philadelphia trade to a standstill. Such buying as is being done by the retail trade is mostly confined to byproduct coke, but buying is so light that there is a plentiful supply. The market for Connellsville and other beehive coke has momentarily disappeared.

Outside of some occasional cars of buckwheat there is very little anthracite moving from company storage yards, and the report is that the largest company has cleaned up all but 50,000 tons of its buckwheat, which is being held in reserve for the local water works and other institutions.

At Baltimore the public is apparently almost uninterested in whether the miners return to work or not as the use of anthracite substitutes grows, and in many cases at less cost than it took to operate heating apparatus with hard coal.

At Buffalo there has been quite an effort to sell bituminous sizes to take the place of the same sizes of anthracite, but the success has not been great. Pea and buckwheat sizes are about all sold out, at $6.85 and $10.35 and that leaves the consumer with nothing to depend on but coke and smokeless, both of which are fairly low in price now. Some retailers are laying down coke at the curb for $12, but the local gas company sticks to $9.50.

### Connellsville Coke Boom Over for Good

Another week has passed without Eastern demand for Connellsville coke reviving and there is no longer any hope that there will be a repetition of the insistent demand, and corresponding prices, that occurred in the latter part of October. Run-of-oven furnace coke then advanced to about $9 as its top, but for only a short time. Some ten days ago it dropped to $4, where it has since been. Iron and steel trade conditions at present would easily warrant a price materially above $3 and perhaps not far from $4.

There is much better demand for broken coke, egg coke, etc., than for run-of-oven, which has not taken well, but some of the prepared stuff is not well prepared. Regular crushed coke with a reputation would sell readily at much above $4.

The blast furnaces using purchased Connellsville coke are no longer seriously concerned as to supplies after present contracts expire Dec. 31. Probably they could contract now for first quarter at $4.50, possibly at $4.25, but apparently they prefer to wait.

Spot foundry coke remains quotable at $5@$6.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Nov. 21, 1925 | 1,057,674 | 189,182 |
| Previous week | 1,050,758 | 186,416 |
| Week ended Nov. 22, 1924 | 1,009,919 | 196,346 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Nov. 22, 1925 | 124,818 | 37,007 | ........ | ....... |
| Nov. 14, 1925 | 112,572 | 37,041 | ........ | ....... |
| Nov. 22, 1924 | 166,101 | 84,367 | ........ | ....... |

# Foreign Market And Export News

## British Coal Trade Reflects Brisk but Irregular Recovery

There is now great loading activity in the Welsh steam coal trade, many steamers having to wait short periods for loading berths at Cardiff and other docks, and there is good prospect of a substantial recovery in shipments for the remainder of the year. The improvement has not been evenly divided, the Monmouthshire market still lagging in demand, although prospects are brightening for that class of coal. Generally speaking the demand has recovered to about the level of twelve months ago but is still far behind the volume of trade of 1923, and until that year's level is reached full activity cannot be restored at the collieries. Prices are now becoming stabilized. In smalls, the tendency is rather firmer for best classes, owing to the increasing bunkering demand in view of the heavier exports.

The strong tone for all sections of the coal market in Newcastle-on-Tyne has been well maintained, for forward and prompt business was easier only because of the difficulty in obtaining tonnage. The general position indicates that the improvement which has set in is more than a passing phase. This is especially the case with coke. The demand has raised values, absorbed heavy stocks and justified the restarting of many ovens in Durham County. Gas coals have the best demand, but all brands of steams move as rapidly as the fuel is turned out. Coking coals have improved with coke.

Production by British coal mines during the week ended Nov. 21, according to a special cable to *Coal Age*, totaled 4,870,000 gross tons, compared with 4,880,000 tons in the preceding week.

## Belgian Outlook Brightens

Weakness still pervades the Belgian coal market, but the steps taken by the government to help the collieries through the present critical period seem destined to improve the position of national products in a certain degree.

The decision of the State Railways not to admit indemnity deliveries from Nov. 10 to Dec. 15 will enable the Belgians to furnish about 50,000 tons, but it is said that this tonnage will be taken only from the Borinage district. The government has decided not to grant any import licenses for free German coals for a month and to suppress all deliveries of indemnity coke dating from Dec. 1, which will improve conditions in the Belgian market and bring pressure to bear on the Germans to reduce official prices.

Industrial coal prices are still hotly disputed. In domestic coals the tendency is more favorable, as cold weather has brought forth more orders than for several weeks.

## French Market Feels Stimulus Of Industrial Pick-Up

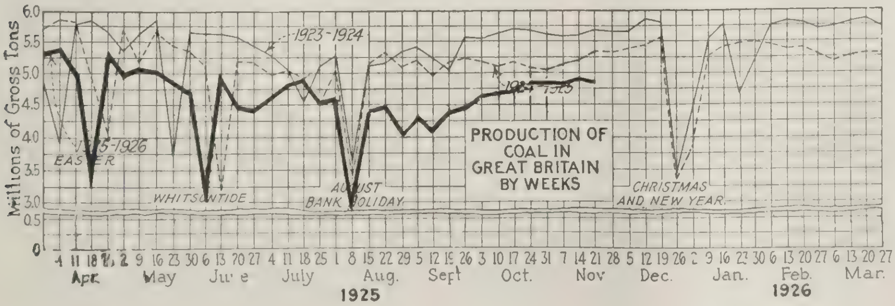
In the French coal market the demand for industrial coals is fairly well maintained due to the recovery of industrial activity, and improved financial situation. Winter weather has caused an increased demand for domestic coals. French collieries producing domestic fuels are late with deliveries, British coals are—in some categories—at prohibitive prices, and German coals are arriving in such small quantities that they hardly enter into calculations.

Deliveries of indemnity fuels from the Ruhr in October included 451,400 tons of coal, 231,000 tons of coke and 34,600 tons of lignite briquets. In the first sixteen days of November 104,692 tons of coke was received.

## Trade Regains Momentum At Hampton Roads

Business at Hampton Roads last week was more brisk, with stronger demand and an increase in foreign business. The bunker trade held up well, an increase in general shipping promising well for this end of the business.

Though the tropical storm that swept the coast slowed down shipping for several days, it has picked up without serious mishap. Domestic coal is still high, selling around $12.50 to $13 at retail, but leaving the retailer little margin from his wholesale costs, the price at the mines for Pocahontas grades having gone well above $7. The tone of the market is stronger and the outlook brighter.



### U. S. Fuel Exports in October

(In Gross Tons)

| | 1924 | 1925 |
|---|---|---|
| Anthracite | 362,118 | 45,915 |
| Bituminous | 1,534,459 | 1,243,460 |
| Exported to: | | |
| France | 24,004 | ........ |
| Italy | 38,418 | 33,252 |
| Other Europe | 3,500 | 1,978 |
| Canada | 1,293,963 | 1,053,210 |
| Panama | 24,082 | 12,054 |
| Mexico | 6,830 | 6,915 |
| British W. Indies | 6,364 | 9,331 |
| Cuba | 51,358 | 48,127 |
| French W. Indies | 18,744 | 9,850 |
| Other W. Indies | 27 | 15,816 |
| Argentina | 14,973 | 8,330 |
| Brazil | 18,228 | 11,768 |
| Egypt | 2,216 | 3,112 |
| French Africa | ........ | 15,551 |
| Other countries | 31,752 | 14,166 |
| Coke | 55,759 | 70,603 |

### Export Clearances, Week Ended Dec. 5, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Virgin Islands: | |
| Br. Str. Maidenhead, for St. Thomas | 6,822 |
| For Cuba: | |
| Br. Str. Sheaf Spear, for Havana | 4,600 |
| Br. Str. Pacific, for Havana | 3,022 |
| For Newfoundland: | |
| Dan. Str. Jungshaved, for Cornerbrook | 5,722 |
| Dan. Str. Oskild, for Cornerbrook | 3,280 |
| Br. Str. Torr Head, for Cornerbrook | 6,768 |
| For Argentina: | |
| Br. Str. Glenmoor, for Buenos Aires | 4,735 |
| For Brazil: | |
| Br. Str. Saint Patrick, for Para | 3,993 |
| Br. Str. Ashworth, for Rio de Janeiro | 5,967 |
| For Italy: | |
| Ital. Str. M. T. Cicerone, for Porto Ferrajo | 9,251 |
| Ital. Str. Sile, for Porto Ferrajo | 9,396 |
| For Dutch West Indies: | |
| Nor. Str. Blaamyra, for Curacao | 3,700 |
| For Spain: | |
| Br. Str. Hypatia, for Barcelona | 5,394 |
| For French West Indies: | |
| Br. Str. Trafalgar, for Fort de France | 6,904 |

FROM BALTIMORE

| | |
|---|---|
| For Cuba: | |
| Am. Str. Santore, for Felton | 8,196 |
| For France: | |
| Ital. Str. Valnoce, for Nice | 7,000 |

### Hampton Roads Coal Dumpings*

| | Nov. 26 | Dec. 3 |
|---|---|---|
| N. & W. Piers, Lamberts Pt.: | | |
| Tons dumped for week | 169,931 | 168,326 |
| Virginian Piers, Sewalls Pt.: | | |
| Tons dumped for week | 96,104 | 101,852 |
| C. & O. Piers, Newport News: | | |
| Tons dumped for week | 165,424 | 144,302 |

*Data on cars on hand, tonnage on hand and tonnage waiting withheld due to shippers' protest.

### Pier and Bunker Prices, Gross Tons

PIERS

| | Nov. 28 | Dec. 5† |
|---|---|---|
| Pool 1, New York | $5.75@ $6.00 | $5.75@ $6.00 |
| Pool 9, New York | 5.00@ 5.25 | **5.00@ 5.30** |
| Pool 10, New York | 4.75@ 5.10 | 4.75@ 5.10 |
| Pool 11, New York | 4.55@ 4.70 | 4.55@ 4.70 |
| Pool 9, Philadelphia | 5.05@ 5.30 | 5.05@ 5.30 |
| Pool 10, Philadelphia | 4.80@ 5.10 | 4.80@ 5.10 |
| Pool 11, Philadelphia | 4.50@ 4.75 | 4.50@ 4.75 |
| Pool 1, Hamp. Roads | 5.00@ 5.25 | *4.90* |
| Pool 2, Hamp. Roads | 4.85 | *4.75@ 4.90* |
| Pools 5-6-7, Hamp. Rds | 4.75 | 4.75 |

BUNKERS

| | Nov. 28 | Dec. 5† |
|---|---|---|
| Pool 1, New York | $6.00@ $6.25 | $6.00@ $6.25 |
| Pool 9, New York | 5.25@ 5.50 | **5.25@ 5.55** |
| Pool 10, New York | 5.00@ 5.35 | *5.00@ 5.25* |
| Pool 11, New York | 4.80@ 4.95 | 4.80@ 4.95 |
| Pool 9, Philadelphia | 5.30@ 5.55 | 5.30@ 5.55 |
| Pool 10, Philadelphia | 5.10@ 5.35 | 5.10@ 5.35 |
| Pool 11, Philadelphia | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 1, Hamp. Roads | 5.00@ 5.25 | *5.00* |
| Pool 2, Hamp. Roads | 5.00 | *4.75@ 4.90* |
| Pools 5-6-7, Hamp. Rds. | 4.85 | *4.75* |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Nov. 28 | Dec. 5† |
|---|---|---|
| Admiralty, large | 22s.6d.@ 23s.6d. | **23s.@ 23s.6d.** |
| Steam smalls | 11s.6d. | 11s.6d. |
| Newcastle: | | |
| Best steams | 15s.6d.@ 17s.6d. | *15s* |
| Best gas | 16s.6d. | **16s.3d.@ 17s.9d.** |
| Best bunkers | 14s.6d.@ 15s. | **15s.@ 16s.** |

†Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items
## From
# Field and Trade

### ALABAMA

Coal holdings totaling 36,000 acres in Tuscaloosa County, near Lock 17, on the Warrior River, formerly belonging to the Friedman interests, have been sold to the Gulf States Steel Co., it is announced. Although no official statement has been made by the new owners it is understood that the property will be developed in the near future. The Gulf States Steel Co. operates coal mines in Jefferson and Blount counties, with a large steel mill, furnaces and byproduct oven plant located at Gadsden. The general offices of the corporation are in Birmingham, Charles H. Moffett being president.

### COLORADO

The Colorado-Utah Coal Co. recently installed an Ottumwa car loader at Mt. Harris.

### ILLINOIS

At a meeting of the Board of Directors of the Chicago Wholesale Coal Shippers' Association held at the Illinois Athletic Club Dec. 1, the following nominating committee was appointed to present a slate of the officers of the association for the coming year at the annual meeting, which is to be held at the Great Northern Hotel on Jan. 6, 1926: P. H. Holland, James Anderson and T. C. Irwin.

B. Lee Hutchinson, of the West Virginia Coal & Coke Co., went to Chicago Dec. 1 to open a branch office for that corporation in the Windy City.

The stock and property of the defunct Southern Gem Coal Corporation was sold at public auction Nov. 27 in Benton, Franklin County. The purchaser was the Brewerton Coal Co., of Lincoln, and the price paid was stated as $100,000. In buying the properties the purchaser also takes responsibility of all outstanding obligations, including $42,000 in bonds, $91,000 in taxes and payrolls which were unpaid in Sesser, West Frankfort, Pinckneyville and Cutler, aggregating approximately $90,000. The sale was in accordance with orders of Federal Judge George English and is subject to the approval of the court.

William Brinley, who has been the general superintendent for the Middle Fork Mine of the United States Fuel Co., at Benton, for a number of years, has been transferred by his company to the Pittsburgh (Pa.) district and will leave early in December for his new home.

### INDIANA

A terrific boiler explosion Nov. 25 at the Garlett wagon mine, east of Clay City, caused fatal injuries to Robert Garlett, a fireman and son of one of the mine's owners. It is believed that Garlett allowed water in the boiler to get too low, the blast following his turning cold water into the boiler. Top structures of the mine were practically demolished, windows were shattered in nearby residences and parts of the boiler blown more than half a mile from the scene of the explosion.

Willow Creek mine, located near Seelyville, resumed operations Nov. 24, after having been closed down since March 31.

Harold Henderson, Terre Haute, for the past six years general counsel for the United Mine Workers of District 11, has resigned his post in order to devote his attention to his property holdings in Florida, where he also will practice law. His resignation becomes effective Dec. 15. It is understood that John Riddle, at present Henderson's assistant, will be offered the position as head of the union's counsel in the district. The position carries a salary of $7,500 a year.

### IOWA

An agreement whereby the Indian Valley coal mine at Hartford will be operated on a union basis has been reached. Officials of the company told Joe Morris, president of the union, they would make a check-off of half of the initiation fee for admission to the union Dec. 1 and collect the remainder Dec. 15.

### KANSAS

Eighty miners in Clemens Coal Co. mine No. 17, in the southeastern Kansas field, who walked out Nov. 25 in protest against alleged discrimination by the company in hiring new men in preference to old, returned to work Nov. 30 by order of district officials pending an investigation of their charges.

William Hislop, superintendent of the Arma mine-rescue station, assumed the direction of the Kansas central station at Pittsburg, Dec. 1. He was succeeded at Arma by Jesse Rogers, of Dunkirk.

A special election to choose a district auditor to fill the vacancy caused by the registration of Jonah Jenkins was held in District 14, United Mine Workers, Nov. 30. There were thirteen candidates. Returns must be made to the district board before Dec. 10, at which time the results of the election will be announced.

A referendum vote on the question of removal of the headquarters of District 14, United Mine Workers, from Pittsburg to either Frontenac or Arma will be held Dec. 29. The decision was made at a board meeting in Pittsburgh Nov. 24, at which Arma, by written bid, promised $18,000 toward the construction of headquarters, and Frontenac, by the same means, promised free use of a building.

### KENTUCKY

It is reported from eastern Kentucky that the Hatfield Reliance Coal Co. has taken over the mines at Dakota, near Viper, and that car loading started at this plant on Dec. 1, after it had been idle for some time.

Federal Judge Charles I. Dawson issued a permanent injunction at Louisville, on Dec. 1, against the United Mine Workers, restraining members of District 23 (western Kentucky) from interfering with operation of the Lee Land & Mining Co., at Island, McLean County. A temporary injunction was granted several months ago, during strike troubles at the plant.

### MARYLAND

The Stanley Coal Co., which is operating two coal mines adjoining the town of Cullin, has purchased from the Kendall Lumber Co. the town, which is located four miles west of Oakland, for the sum of $60,000. The sale includes 65 dwellings, a large storehouse, wareroom and about 25 acres of ground, but does not include dwellings and lots which are now owned by individuals. The town has a population of about 400 and was founded by R. P. Cullin, in 1892.

### MINNESOTA

The Inland Coal & Dock Co. has let contracts for the building of a 375-ft. addition to its dock at Duluth and the work is now proceeding with a view to its being ready for operation next spring. With the completion of that addition the Inland dock will be one of the largest and most modern at the Head of the Lakes. This is the second addition to it to be undertaken within a year.

### MISSOURI

A verdict disconcerting to operators and dealers interested in the Kansas

City (Mo.) market was returned by a jury in circuit court in Kansas City, Dec. 2, on an appeal by James C. Wilson, a coal dealer, from a police court fine of $100 for delivering coal from the Hume field on an order for Cherokee. Wilson maintained the Hume coal was from the same vein as the Cherokee in an argument which brought a reversal of the police court decision. Cherokee lump is quoted at $5 at the mines on the Kansas City market, Hume coal at $3 to $3.50.

## NEW YORK

The demolition of the New York, Ontario & Western coal trestle at Oswego is planned. It is found that the use for it to handle coal is small and that the traffic needs the space for an extension of the package-freight docks. The Pennsylvania R.R. also is expected to tear down its soft-coal trestle at Sodus, on account of poor business. Anthracite shipments from Lake Ontario ports, mostly from Oswego and some from Fair Haven, for the season of 1925 were 152,474 gross tons, as against 220,510 in 1924. For a long time shipments ran above 600,000 tons annually.

## OHIO

The offices of the Lorain Coal & Dock Co., which have been located in the Huntington National Bank Bldg., Columbus, for about ten years, are to be moved about Dec. 15 to the eighth floor of the New First National Bank Bldg. The company will occupy about two-thirds of the space of the entire eighth floor.

Dumpings at the docks of the Hocking Valley Ry. during the week ended Dec. 2 were 197,213 tons as compared with 188,903 tons in the corresponding week last year. So far this season the docks have handled 8,301,670 tons as compared with 6,777,357 tons during the same period last year. The docks will be kept open for at least another week and possibly longer. One of the loading machines was stopped Dec. 5 but the other loader will be kept going, as the Ford Motor Co. will continue to ship coal from lower lake ports to Detroit as long as Lake Erie is free from ice.

Production is increasing in eastern Ohio. The Barton Coal Co. mine at Taggart has been placed on full time, after being operated three days per week for a few weeks. The Bixler Coal Co. has opened its Cochran mine, which had been idle for several months. This will be operated full time. The Jefferson Coal Co. has started operations at Mines No. 1, 2 and 3, on Piney Fork, which had been idle for months, and the announcement is that they will be operated with a full force. The United States Coal Co. has opened its mine at Plum Run on the New York Central lines and also has put its mines No. 1 and 2 in full operation. The last two named mines are at Bradley and have been operating on part time. The Maher Collieries Co. has opened Mine No. 2, which had been idle for weeks. This is the largest mine in the eastern Ohio field to resume operations.

## OKLAHOMA

Ten miners exploring the Lucky Jew mine near Picher, were injured Nov. 27 by an explosion following the ignition of gas by the open cap lamp of one of the men.

## PENNSYLVANIA

John C. Brydon, formerly president of the Quemahoning Creek Coal Co. and of the National Coal Association, has been appointed vice-president of the Hagey H. Campbell Co., general insurance agents, of Pittsburgh, and resident vice-president of the Commercial Casualty Insurance Co., of Newark, N. J. The appointments became effective Dec. 1.

A new steel tipple for the Adrian mine, now operated by the Jefferson & Indiana Coal Corp. under lease from the Rochester & Pittsburgh Coal & Iron Co. was put into operation Nov. 30. It cost $80,000 and was built in 23 days, which is called a record for speed. The mine now employs 270 men and puts out 1,500 tons of coal a day, the heaviest since 1914.

The power plant and fan house of the Good Clay & Coal Co., located at Johnston's Ridge, about one mile from the village of Bells Landing, was totally destroyed by an explosion of dynamite about 2 a.m., Nov. 28. The mine had been working for some time under the 1917 scale but several weeks ago some trouble arose between the miners and their employers and the mine was shut down. The loss will exceed $25,000. The work was done by one man, the tracks being plainly visible in the soft earth about the place. State police and county detectives are making an investigation.

The Rosedale Coal Co. announced sale of its No. 2 mine, at Poland, in Greene County, to Ben Evans, of Fairmont, W. Va., on Nov. 18. It will be operated under the name of the Evans Coal Co., with main offices in Fairmont. The property is a complete mining and tipple plant with 763 acres of coal land valued at about $750,000, according to John L. Hatfield, president of the Rosedale Coal Co., but has been operated at only part capacity for several years, the Rosedale company concentrating most of its activity on the No. 1 mine, near Morgantown, W. Va. The new owners are considering enlargement of tipple facilities to increase production, which is 10 railroad cars daily at the present time.

Decision has been reached at Harrisburg by the state sanitary waters board that no objection will be made to the removal of culm from banks of streams in the anthracite field by means of steam shovels but that the removal of culm by washery or wet process will be considered stream pollution and will not be tolerated. It is understood that the decision was made in regard to plans for the removal of culm from a Delaware & Hudson right of way near Carbondale, where it is said that there are several hundred thousand tons of culm that may be reclaimed and prepared for market.

## UTAH

The Peerless Coal Co., Newhouse Building, Salt Lake City, following the dispute with its local retail agent, the Marsh Coal Co., has purchased the old yard of the Central Coal & Coke Co. and will go into the retail business in Salt Lake City. The Peerless Coal Co. is owned by the Murdock interests and is one of the more important coal-mining companies with headquarters in Salt Lake City.

L. E. Adams, of the sales department of the Spring Canyon Coal Co., Salt Lake City, has been appointed head of the department, succeeding the late J. A. Stallings, whose death occurred recently.

## WASHINGTON

Extensive experiments with Washington coal to determine its most efficient application to industry is planned by the U. S. Bureau of Mines in co-operation with the College of Mines of the University of Washington. Owing to the nature of the coal beds, a great deal of waste in the form of fine coal is experienced. The mining experts hope to find new uses for this fine coal, but also will study the specialized uses of other grades and qualities of coals. At present the fine coal is used extensively for briqueting.

## WEST VIRGINIA

Deeds placed on record in Fairmont and Morgantown Dec. 4, show that Edward H. Thomas, treasurer of the Hines Lumber Co., of Chicago, sold 4,000 acres of Sewickley coal land and between 500 and 600 acres of surface land along Indian Creek, in Monongalia and Marion Counties, to the Continental Coal Co. of Fairmount for $467,000. Most of the coal land lies in Marion County.

Union leaders in the Scott's Run field of Monongalia County were surprised, according to their own version, when the Golden mine of the By-Products Coal Co., which was leased by Scatchell Brothers from the Watson interests, was placed on a non-union basis early this month. The mine had been idle for some time but when the miners were offered 45c. a ton for their labor in preparing to resume, some of them ceased work. The lessees then decided to operate the mine independent of any agreement with the union. The property at Osage upon which the union miners' barracks were built more than a year ago is owned by the Scatchells.

Mines on the Monongah and Charleston divisions of the Baltimore & Ohio R.R. loaded 1,796,800 net tons of coal to the lake docks this season. Most of this coal originated at mines on the Monongah Division.

George Gaskill has been made superintendent of the Parker Run mine of the Fairmont & Cleveland Coal Co., at Rivesville, one of the largest mines in the region. He succeeds J. W. Bischoff, formerly of Elkins, who went to Montgomery to be superintendent of the mine of the Kanawha & Hocking Coal & Coke Co.

Junior mine of the West Virginia Coal & Coke Co. resumed recently in the Elkins section with M. Benton Mitchell, formerly connected with the Bethlehem Mines Corporation, as superintendent.

Presterly B. Robinson, who was superintendent of the Elk Horn Coal Corporation's mine at Interstate, has accepted a position as superintendent of Hughes mine of the Robinson Coal Co.

The Long Coal Mining Co. resumed operation at its Gladius mine in the Clarksburg section recently on a non-union basis. L. R. Collins, a mine engineer, is now superintendent.

C. D. M. Kramer, of Clarksburg, has been appointed a district state mine inspector, but thus far has not been assigned to any particular district.

It is reported that within a short time Robert M. Lambie, of Charleston, chief of the West Virginia Department of Mines, will announce the appointment of five division safety inspectors. All of the men are the product of the school of engineering of West Virginia University in Morgantown. L. S. Magee, of Morgantown, will be inspector assigned to Monongalia, Marion and Harrison counties. It will be the duty of these men to instruct the men around the mines in safe practices, first-aid and mine-rescue work, according to reports.

Prof. Charles E. Lawall, of the mining engineering department of West Virginia University, has called the annual conference of mining extension instructors in the field for Dec. 21 and 22 in the McClure Hotel, in Wheeling. The instructors will visit the mine of the Windsor Power Co., said to be the largest mine in the state, producing more than 4,000 tons in eight hours.

The Lick Fork Coal Co., operating on the main line of the Virginian near Mullens, in Fayette County, has been reorganized and will be known in the future as the Hysteam Coal Co. The mines of the old company were out of commission for a number of months. Since the reorganization production has been resumed.

The recent purchase of the Low Moor Iron Co.'s mining operations at Kay-Moor and the coal lands of the Coal Land Co. by the Berwind-White interests for $1,001,000 is reported to be a part of the policy of the Berwind-White concern to acquire the larger part of the coal holdings fronting the New River. It is stated that overtures are being made to acquire the holdings of the Stover Coal Co. located not far from the Low Moor property. The Coal Run Land Co., through Josiah Low, president, received $150,000 for two tracts of 1,684 acres of fee land and 407 acres of mineral in the transaction. Frank Lyman, president of the Low Moor company conveyed all interests in approximately 3,000 acres, of which about one-half was in fee, in this transaction, for $851,000.

The Marcus tipple of the Upland Coal & Coke Co., at Elkhorn, contract for which was awarded to the Roberts & Schaefer Co., Chicago, is rapidly nearing completion. This tipple will be completed with retarding conveyor, Marcus screen, and "RandS" shaker loading booms.

## WYOMING

For the first time in more than four years a fatality occurred in the Blairtown properties of the Lion Coal Co. on Nov. 27, when Theodore Poupakies, a miner, was killed by a fall of roof rock. This was the first death in four months in the Rock Springs district, in which several thousand men are employed.

John A. Smith, safety engineer of the Union Pacific Coal Co. at Rock Springs is spending ten days in Pennsylvania at the Bureau of Mines station at Pittsburgh and the Bureau's experimental mine at Brucetown. His time will be taken up with the study of rock-dusting methods.

The U. P. First Aid Association celebrated its 16th anniversary Nov. 21 with a banquet and dance. This association is the most active in southern Wyoming and is at present holding weekly classes in first-aid and mine-rescue work.

At the November meeting of the Rock Springs chapter of the Rocky Mountain Coal Mining Institute, embracing membership in Rock Springs and the surrounding camps, E. H. Denny, of Denver, district supervising engineer for the Bureau of Mines, addressed the meeting upon general mining conditions, with particular reference to the use of rock dust throughout the United States as a preventive of coal-mine disasters.

## CANADA

Twenty-six miners were arraigned before Judge Boyle in the Criminal Court at Calgary, Alta., on Nov. 30 on charges arising out of the strike at the Drumheller coal mines last summer. Eight are charged with unlawful assembly to compel certain persons to abstain from working and to compel the Alberta Block Coal Mining Co. to abstain from employing any persons not belonging to the United Mine Workers. Seven are charged with watching and besetting the Alberta Block mine.

Coal output in British Columbia during the first ten months of this year was 393,040 tons greater than for the corresponding period of 1924, according to a statement by the provincial Department of Mines. Output by districts during the first ten months of 1925 was: Crows Nest Pass, 727,350 tons; Nicola-Princeton, 136,925 tons; Vancouver Island, 1,140,169 tons a total of 2,004,599 tons. For the first time within the last two years nearly all of the Vancouver Island collieries are operating at capacity. A large amount of exploration is being done in the Princeton district and several promising coal prospects recently have changed hands.

The Ontario Government will bend every possible effort to obtain as soon as possible the remaining 6,000 tons of Alberta coal still due that province under the contract entered into by the Alberta, Ontario and federal governments through the Canadian National Rys., Charles McCrea, Ontario Minister of Mines, stated last week. About 19,000 tons of coal was received out of the 25,000 tons trial order prior to the railway withdrawing its cars for the grain movement. "The grain movement should be pretty well completed by the middle of December," stated Mr. McCrea. "We are taking the matter up with Sir Henry Thornton, first as to the balance of the 6,000 or 7,000 tons shipment, and, secondly, to see if, under the conditions now existing, this tonnage could not be increased."

# Traffic

### Sanctions New Coke Rates In New York

The New York Public Service Commission has approved new rates of the New York Central (East) on coke and coke breeze from Harriet to New York Central (West) stations: Fredonia, $1.39; Falconer, $1.76 per net ton; no joint rates heretofore in effect; effective Dec. 22, 1925.

Also of the New York, Chicago & St. Louis R.R. on coke, and coke breeze from Buffalo and Buffalo Junction to Falconer (on Erie and New York Central), $1.76, and to Fredonia (on New York Central), $1.39 per net ton; no joint rates hitherto in effect; effective Dec. 19.

The Commission has approved a new rule of the New York, Ontario & Western R.R. governing diversion or reconsignment of coal and coke so as to make the same applicable on coke breeze, dust and screenings. The new regulation provides mileage charges to apply for excess haul when shipments are out of direct route; effective Dec. 22, 1925; P. S. C. No. 4804.

# Obituary

**Isaac G. Hall**, 40 years old, well known coal man of Indianapolis, died at his home Nov. 29. He had been in ill health for several months, but remained actively in business as an officer of the Knox Consolidated Coal Co. until two weeks before his death. Mr. Hall was born in Brazil., Ind., and was educated at Purdue University. In addition to his connection with the coal company he was a director of the First National Bank at Brazil.

**John Quincy Dickinson**, pioneer in the industrial development of the Kanawha Valley and Southern West Virginia, died at his home in Charleston, W. Va., Nov. 26, after an illness of several years. He was the father of John L. Dickinson, Charleston banker, and of Charles C. Dickinson, who has extensive coal interests. He early recognized the value of coal lands in the Kanawha Valley and acquired extensive holdings of coal, gas and oil properties in Boone, Kanawha, Fayette and Raleigh counties. He also was extensively interested in a number of coal mining companies but in his later years turned the management of these interests over to his sons.

## Coming Meetings

**New River Coal Operators' Association.** Annual meeting, Dec. 17, at Mount Hope, W. Va. Secretary, S. C. Higgins, Mount Hope, W. Va.

**Chicago Wholesale Coal Shippers' Association.** Annual meeting, Great Northern Hotel, Chicago, Ill., Jan. 6, 1926. Secretary, G. H. Merryweather, Temple Bldg., Chicago, Ill.

**American Wood Preservers' Association.** Annual meeting, Jan. 26-28, 1926, at Cleveland, Ohio. Secretary, E. J. Stocking, Chicago, Ill.

**Coal Club of Philadelphia.** Annual meeting, Jan. 28, 1926, at the Bellevue-Stratford Hotel, Philadelphia, Pa. Secretary, C. K. Scull, Philadelphia, Pa.

**American Institute of Electrical Engineers.** Annual convention, Feb. 8-12, 1926, at Engineering Societies Bldg., New York City. Secretary, F. L. Hutchinson, 29 West 39th St., New York City.

## New Companies

**The Fairplay Coal & Development Co.**, with a capital of $75,000 has been incorporated at Excelsior Springs, Mo. The company will operate coal mines and buy and sell coal. The incorporators are J. D. McDermott, George W. Maidment and Preston Denton.

**The David Thomas Coal Co.**, Columbus, Ohio, has been chartered with an authorized capital of 100 shares, no par value designated, to operate a mine in West Virginia. Operations will start as soon as work is completed on the placing of new equipment in the mine, which will have a capacity of 200 tons daily. Temporary offices will be located at 1113 Bryden Road, Columbus. David R. Thomas is president of the concern. Other incorporators are: David S. Thomas, Walter L. Thomas, Warren H. B. Thomas and Mary A. Thomas.

**The Red Star Coal Co.**, of Whitesburg, Ky., on Nov. 24 filed articles at the State Secretary's office, Frankfort, Ky., capital being $10,000. Alex Taylor, Frank Grimes and W. T. Taylor are the incorporators.

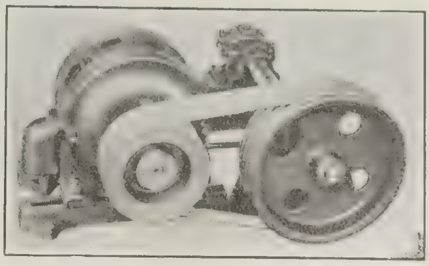
## Industrial Notes

W. J. Nugent, vice-president and general manager of the *Nugent Steel Castings Co.*, Chicago, has been elected president to succeed Charles Piez. Prentiss Coonley was elected vice-president and C. A. MacDonald, secretary, was elected to fill a vacancy on the board of directors. Mr. Nugent has been associated with the company since 1918, when the present plant was erected. From 1918 to 1921 he served as vice-president and in 1921 became general manager as well. It is announced that there will be no change in policy as a result of the recent changes in officials. The interests of Mr. Piez have been taken over by Mr. Nugent and others. The company was organized in 1916 and has made electric steel castings since its inception. A large electric annealing furnace of reciprocating type was recently installed and the entire output is now annealed in this furnace.

Robert Wolfers has joined the **McGraw-Hill Co.** and will be in charge of directories, lists and a direct-mail department which is being developed to serve McGraw-Hill advertisers. The E M F Electrical Year Book recently was purchased. Other McGraw-Hill reference publications are McGraw Central Station Directory, McGraw Electric Railway Directory and the Radio Trade Directory. It is planned to extend the directory and list services into other industries now served by McGraw-Hill publications. Mr. Wolfers was formerly connected with the Automobile Trade Directory and Chilton Automobile Directory. J. S. Cortelyou, who for the last year has been devoting his time to the Radio Trade Directory, will in future direct the compilation of all McGraw-Hill directories and lists. Mr. Cortelyou was associated for many years with Mr. Wolfers in the automotive directory business.

# New Equipment

## Short Coupled Texrope Drive Smooths Transmission



**Model of New Drive**

This means of power transmission is practically a cross between an English rope drive and that employed on many an automobile to operate the fan. The utility of both of these types of drive has been thoroughly proven by long hard usage, the one for transmitting large amounts of power and the other in operating over extended periods under the most trying conditions, subjected to grease, dirt and neglect. Coming of such parentage this drive should prove of high utility.

A new development in the field of power transmission recently has been announced by the Allis-Chalmers Manufacturing Co., of Milwaukee, Wis. This firm has perfected a short-center, flexible drive, known as the Texrope. This consists of two grooved sheaves and a number of specially constructed endless "V"-belts. The sheaves are set at such a distance apart that the belts fit the grooves with neither tension nor slack. In outward appearance this drive strongly resembles the well known English rope drive, except that the place of Manila rope is taken by the "V"-shaped fabric and rubber belts.

Inasmuch as the new type of belts just fit the sheaves, there is no slack or lost motion in the drive. Because of the "V" construction, also, slip of the belts upon their pulleys is minimized, since the harder the belts pull the more firmly do they grip in the grooves. Being somewhat elastic, they cannot jerk, either in starting, accelerating or running, neither can they transmit vibrations, but act as cushions between the driving and driven pulleys. This results in a smoothness of transmission, seldom, if ever, previously attained.

Inasmuch as there is no tension on the belt, the bearing pressures are low and the drive occupies extremely small space. It is silent, clean, unaffected by either moisture or dirt, safe, simple and trouble proof. As the slip is small, the speed ratios are approximately fixed. The drive is durable and each belt carries its proportional share of the load.

These drives range in size from ½ to 250-hp. each, with ratios up to 7 to 1. Belt speeds range from 800 to 6,000 ft. per minute. Drives of this kind have been applied to almost every industry. They are particularly applicable to textile machinery, fans and blowers, machine tools, refrigeration, mining, crushing, wood and metal-working machines, elevators and conveyors, and similar contrivances.

**The Climax Engineering Co.**, Clinton, Iowa, announces the appointment of T. L. Keeling, as Sales Representative for Ohio, western New York, and western Pennsylvania, with offices at 657 Leader Building, Cleveland.

## Publications Received

**Power-Plant Lubrication**, by Wm. F. Osborne. McGraw-Hill Book Co., Inc., New York City. Pp. 275; 5½x8 in.; illustrated. Price, $3. A practical book for the power-plant engineer explaining the physical and chemical properties of lubricants, their action under changing influences of heat, pressure, etc., and the methods of determining their relative value.

**Alternating-Current Circuits**, by John M. Bryant and James A. Correll. McGraw-Hill Book Co., Inc., New York City. Pp. 405; 6x9 in.; illustrated. Price, $4. This book is intended as an introduction to the study of alternating-current circuits and transmission lines.

**Analyses of Alberta Coal**, by Edgar Stansfield, Robert T. Hollies and William P. Campbell. Scientific and Industrial Research Council of Alberta, Edmonton, Alta., Can. Pp. 63; 6x9 in.; illustrated.

**The Case of Bituminous Coal**, by Walton H. Hamilton and Helen R. Wright, with the aid of the council and staff of the Institute of Economics. The Macmillan Co., New York City. Price, $2.50. Pp. 307; 5x7½ in.; illustrated.

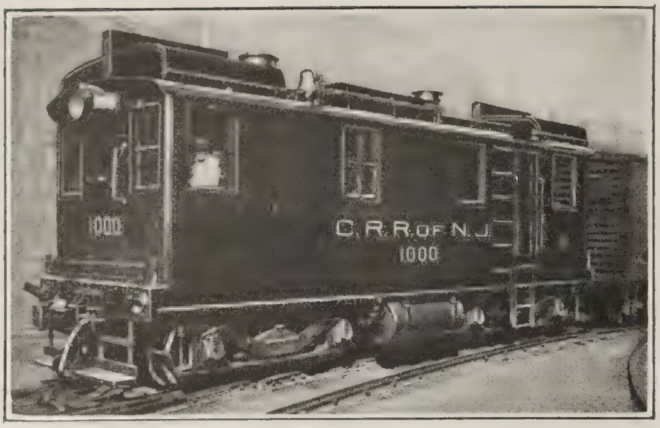
**Annual Report of the Director of the Census to the Secretary of Commerce for the Fiscal Year Ended June 30, 1925.** Pp. 34; 6x9 in.; tables.

**Annual Report of the Secretary of Commerce.** Pp. 43; 6x9 in.

## Thermo-Electric Locomotive Obviates Smoke

Recent years have witnessed a gradual decrease of steam in all industry. A recent advance in railway engineering is represented by the development of a locomotive driven by an oil engine through the medium of an electric generator and motor. The Central Railroad of New Jersey recently purchased a 60-ton machine of this kind and was followed closely by the Long Island R.R. with a 100-ton machine. Other railroads are also trying out oil-electrics. If service performances of these locomotives bear out their demonstration performances, it may possibly foreshadow a wide substitution of the oil-electric locomotive for the steam engine in railroading throughout the United States, in the operation of coal company short lines and yards and in haulage about strip pits.

In the construction of one type of these locomotives the oil engine, which is the product of the Ingersoll-Rand Co., has six vertical cylinders operating on the four-stroke cycle. Fuel oil is injected directly into the cylinders under pressure and is ignited by the heat resulting from the compression. The action of the engine is similar to



**In the Switching Yard**

This 60-ton locomotive is built to attain a speed of only 30 m.p.h., with a draw bar pull of 36,000 lb. Machines of this kind can, of course, be designed with equal facility for higher speeds. The thermo-dynamic efficiency attained with this machine is from three to five times that of steam locomotives.

that of an ordinary automobile engine with the heat of compression doing the work of the spark plug. Forced lubrication is employed and circulating water is distributed to all parts of the engine by a centrifugal pump.

Directly connected to this oil engine is a General Electric generator, the voltage of which ranges from 200 to 750. The output of this machine is regulated by the throttle control of the engine. The framework or chassis is built by the American Locomotive Works.

Control of a locomotive of this kind is extremely simple, being centered in the manipulation of two levers. One of these serves as a throttle for the engine, while the other is a master controller or electric switch which places the tractive motors either in series or in parallel as circumstances may require. Tractive efforts may be varied to suit any operating condition.

Performance records of these locomotives show that they are far more economical in cost of operation than steam-driven machines of like capacities. The thermal efficiency, as referred to the effort delivered to the driving wheels, ranges from 25 to 27 per cent, as compared with from 5 to 8 per cent in steam locomotives. The engines used by the Central Railroad of New Jersey and the Long Island R.R. have been designed and constructed for slow speed switching service. The 60-ton machine develops 300 hp. and is capable of traveling at 30 m.p.h., exerting a tractive effort of 36,000 lb. The larger machine is of 600 hp., travels the same rate per hour, but has a draw-bar pull of 60,000 lb. Machines of this type may, however, be designed for high speed road service with equal facility.

## Big Fuse Puller Will Not Twist or Slip

The Trico Fuse Manufacturing Co., of Milwaukee, Wis., makers of cartridge fuses, announces the addition of a "Giant" fuse puller and replacer to its present model, the pocket-size tool. The giant-size fuse puller is the big brother to the pocket size puller and it has been aptly termed a "brute for strength." It is 12 in. long and made with seven laminations of the finest genuine gray horn fibre, securely riveted at all points subject to strain. Inserts placed between the laminations provide a firm, even grip on the fuse and prevent any tendency to twist or slip in the hands of the user. The puller and replacer is designed for use on fuses from 100 to 600 amp. at 250 volts and 60 to 400 amp. at 400 volts, making it an ideal tool for safely and conveniently handling fuses of large capacity.

**Makes Fuse Pulling Safe**

Seven laminations of fibre securely held together prevent this device from twisting.

## Hood with Respirator Protects Worker

In many occupations dust or fine particles of other matter pervades the air in large quantities. These particles, if inhaled, cause serious discomfort to the worker if not even endangering or impairing his health. Before a workman may safely breathe such an atmosphere it is necessary that the dust or other particles be screened out of it. To accomplish this result the Engineering Products Corporation of New York has placed on the market the dust mask shown in the accompanying illustration.

This mask consists essentially of two parts or elements namely, a dust proof hood and a respirator. The hood is made of a closely woven washable twill that fits down over the shoulders, but allows free movement to the arms. At the neck it is provided with a gathering string or strap which may be drawn up effectively excluding all dust that might find its way under the hood skirts. This hood may readily be washed or otherwise cleaned without injuring its fabric or impairing its efficiency.

The respirator is made up of spun and cast aluminum, the cushion touching the face being made of rubber. The tape or strap drawing the hood about the neck also draws the respirator firmly against the mouth and nose. The flutter or exhalation valve is attached to the bottom of the respirator preventing the exhaled air from fogging the sight lenses. The strainer element is made up of a series of felt disks the exact number of which is governed by the size of dust particles encountered and their density in the air. The vision lenses are of nonshatterable, clear, two-ply, laminated glass. They are held in their machined, cast aluminum receptacles by means of spring clips.

Because of the materials of which this equipment is made as well as the care in detail with which it is manufactured this dust mask is extremely efficient in use. If forms an effective protection for the wearer when working in an atmosphere laden with sharp abrasive dust that would irritate the lungs or one filled with fine particles or globules of paint, varnish or enamel as that encountered when using a paint spray or gun, and which may have an equally detrimental effect upon the organs of respiration.

**No Fine Ashes Penetrate This Man's Lungs**

Blowing down the tubes of a boiler is often an extremely dusty job, and the ash dust encountered is sharp and abrasive and highly irritating to the lung tissues. Use of this dust mask precludes all possibility of such particles entering the workman's respiratory organs, no matter how thick may be the cloud of it in the air breathed.

## Recent Patents

**Mining Machine**; 1,552,909. Harry L. Brown, Glen Ridge, N. J. Sept. 8, 1925. Filed May 22, 1922; serial No. 562,829.

**Coking-Retort Oven**; 1,553,662. Joseph Becker, Pittsburgh, Pa., assignor to the Koppers Co., Pittsburgh, Pa. Sept. 15, 1925. Filed June 11, 1921; serial No. 476,677.

**Coal-Loading Bucket**; 1,554,164. Norman H. McClevey, Petersburg, Ind. Sept. 15, 1925. Filed July 14, 1924; serial No. 725,852.

**Loading Machine**; 1,554,725. Isidor S. Hochreiter, Luzerne, Pa. Sept. 22, 1925. Filed Feb. 19, 1923; serial No. 619,943.

**Portable Coal Tipple**; 1,554,885. Grover C. Singer, Oakland City, Ind. Sept. 22, 1925. Filed Jan. 6, 1925; serial No. 839.

## Trade Literature

**Automatic Voltage Regulators.** General Electric Co., Schenectady, N. Y. Bulletin No. GEA-1234. Pp. 60; 8 x 10½ in.; illustrated. In two sections, the first covering voltage regulators for alternating-current generators, protective relays, voltage regulators for direct-current generators and speed regulators for direct-current motors, and the second devoted to induction voltage regulators for station operation and induction voltage regulators for outdoor installation.

**Specifications for Goheen Paints**, Damp-Proofing, Water-Proofing, Goheen Corporation of New Jersey, Newark, N. J. Bulletin 102. Pp. 23; 8½ x 11 in. This booklet should prove useful to mining men in the selection, specifying and use of paints for both underground and surface equipment. Numerous color charts are included.

**Overland Line Contactors for Electric Locomotives.** The Automatic Reclosing Circuit Breaker Co., Columbus, Ohio. Bulletin No. 504. Describes and illustrates the advantages of the Overland line contactors, why they reduce demand charges, their operation, etc.

# COAL AGE

McGraw-Hill Company, Inc.
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E. J. Mehren, *Vice-President*

Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. Dawson Hall
*Engineering Editor*

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## Pinchot Prolongs the Strike

FOR A MAN who professes to be so ardent in his desire to effect an immediate resumption of anthracite mining, the Governor of Pennsylvania pursues strange means to achieve his ends. To the ill-timed folly of his conference of Nov. 28 he now adds the call for a special session of the state legislature to consider, among other things, the enactment of measures to declare anthracite mining a public utility and place the industry under state control.

In the light of the terms presented to an emissary of the union by the operators—terms of which Mr. Pinchot must have had full knowledge before making public his "peace" program—the presentation of that program could have but one result. That result was to drive operators and miners, who were nearing a common ground, farther apart. This would probably have been true even had the Governor's program had real merit; any outside interference at such a stage would have endangered negotiations: with Pinchot's eleven points what they were, their rejection was inevitable.

The chances of a speedy rapprochement—not overly bright after that flare-up—are now still further postponed by the Governor's threat of regulation. By that action he definitely and openly aligns himself with Mr. Lewis and the union cohorts. The thin mask of impartiality with which he had covered his earlier unwelcome participation in the situation is dropped. Under a guise of acting in the public interest, Mr. Pinchot in effect says to Mr. Lewis: "Don't worry, John; if the operators won't yield willingly to our terms of surrender, I'll swing the big stick over their heads and make them wish they had."

Under such an implied promise will it be strange if the strikers take new heart and resolve to turn a deaf ear to reason until the success or failure of the threat has been determined? Hardly. Mr. Pinchot offers them chimerical hope where there had been darking despair. But what of the public for which the Governor has expressed such sympathy? What of the business interests of the anthracite region whose future has been so dear to Mr. Pinchot's heart? How will these interests, how will the public at large be served by steeling the miners to refuse honorable terms of peace—terms which only ask them to justify their demands before an impartial board of arbitration?

This is the question of immediate importance. The sequence of events, the background against which the proposals for legislative control have been projected make it distressingly plain that those proposals are brought forward, not to be considered on their dubious merits, but to bludgeon the operators into accepting the Governor's "peace" program of Nov. 28. To accomplish that Mr. Pinchot seems willing to block a settlement for months since he cannot expect that the responsible leaders of the industry are so spineless or so blind to the best interests of the public as to meekly swallow his "peace" program or his campaign of legislative reprisals. The Governor of Pennsylvania, therefore, must now shoulder the responsibility for prolonging the anthracite suspension.

## Making Headway

PLACING THEMSELVES at the head of the procession and looking back at the train behind, the critics of the coal industry question why it is that some of the travelers are ahead and some in the rear. We would suggest that the reason why there are leaders and stragglers is because there is progress. Sanford E. Thompson in the United States Coal Commission report and in a lesser degree Walton H. Hamilton and Helen R. Wright in their book just published on "The Case of Bituminous Coal" are examples of such critics. They have their place in the human economy of course. They are advocates of higher purposes, but it might be well if they realized that inequality in practice is not so much an evidence of inertia as a sign of progress. There is no inequality, for instance, in India's native industries. So long as there is a fore and an aft in the progress of the coal industry, we may be sure that it is progress and not stagnation we are viewing.

In what industry have revolutionary changes come in a night? Are all the isolated power plants, for instance, burning coal in the most modern of boilers? Has not the return-tubular boiler persisted for thirty or forty years despite many radical changes in boiler practice? Did the mechanical blowing of glass invade the window-glass industry in a few short years or did it take a decade? Did flotation come in a year in the metal industry, or was it an affair of long continued growth? In the late war we sweat blood to get ready for battle and when we got our men to the front they had to fight with guns bought from the Allies. Secretary Davis has said that without such help our men could not have withstood the enemy for a single hour. Why? Because industry cannot be mobilized in a year or so to make these marvelous changes. The manufacturer cannot provide the facilities even if the consumer is ready to purchase them—even when we have mastered the new technique and know just what we want and just what to do with it when we have it.

In no industry is progress as rapid as it should be. It certainly is not as fast as might be desired in the coal industry, but we have yet to think that the bituminous-coal industry should be held up to public reprobation for its dilatoriness in this respect, especially in the matter of loading machines.

THE PAPERS DECLARE that the miners made concessions in accepting Mr. Pinchot's offer, but the truth is they conceded nothing, they merely reduced some of their demands. It is the operator who is being asked by Mr. Pinchot to make the concessions.

## Planning Public Relations

IN ALL INDUSTRIES the consumers are more numerous than the producers, and if there is conflict the consumers have the power and the vote to mold legislation to suit their wishes, subject only to constitutional law. So it is well for the producers to think first and correctly, lest the action of the consumer be unfortunate for the producer.

Most industries are giving thought to this condition and asking themselves just what course will satisfy the consumer or, as it is more usually put, the "public." The producers, wholesalers and retailers of coal would do well to keep this same question of public relations constantly in view.

When a severe difference of opinion, a quarrel in fact, exists between two persons it is amazing how almost impossible it is to avoid controversy, because every expression is either misinterpreted or misquoted. If the operator declares, for instance, that there will be a coal shortage, he is told that he is trying to create a panic so that he may sell more coal and sell it at an extortionate figure. If he says nothing and a shortage comes, he is accused of lulling the public to sleep so that he can get the public into a trap and make unreasonable profits. The accusation will be even more bitter if he declares that there is no reason to fear a shortage.

If he builds a store or a town he is accused of feudalism and an attempt to victimize his employees and if he decides he will neither enter the store business, nor construct a town, he is reproached with an indifference to his employees' needs and with the fact that his workmen are not living in decent houses or are being victimized by third parties with whom the operator is said to be in collusion.

The trouble with such criticism is that it is always hard to refute. It is always difficult to show that the action or non-action was not the outcome of an evil intention.

It is important for an industry to be on proper terms with the consumer of its products. What the coal industry needs is to have the public assured that it is working for safety, the happiness and health of its employees, for steady operation, for a satisfactory supply at all times of the necessary fuel supplies and for the production of fuel that is clean, suitably sized and sold at a fair price. To this end the industry should be willing to let the public know the actual facts. To hide them will only result in suspicion.

The public bases its judgment on the actions of individuals. A nation is condemned for the action of one of its nationals, a race for the evil deeds of one of its members, an industry for the business methods of one of its merchants. It is, therefore, necessary to create a right sentiment in the industry, a correct standard by which the many operators may judge the actions of others and may themselves judge of their own actions. There must be instant condemnation of violations of these standards. In the words of our British cousins there must be certain things that "are just simply never done, don't you know."

We cannot show a lenient judgment to the man who runs an unsafe mine, builds or maintains rows of shacks, hires enough men to mine twice as much coal as he can sell, sends dirty, unsized coal to market or sells coal at unreasonable price at a time of scarcity. To condone such offenses is to make "coal man" a byword, to bring merited contempt on the industry.

No one who is in a line of business for life, who has his capital invested in it, can see individuals bringing it in disrepute without a feeling of indignation and regret. The health of industry depends on the honesty of its decisions, and no man who has devoted his life and his capital to an industry can be other than sensitive as to its honor. To a good man, his industry is only second to his country and the good name of his product only second to the honor of its flag.

## Quantity Designing

IN MOST large companies equipment is installed in many ways—some good, some bad, according to the ability of the man on the job—and if it is discovered that the design of some detail is not of the best it is probably not corrected, because it would be expensive to tear it down and re-erect it, the reconstruction would reflect on someone, delay operation and perhaps might cause a lengthy dispute.

All these questions of how any piece of apparatus should be installed should be settled once and for all by standards. The best and safest way should be determined after careful inquiry and perhaps after study of records, exhaustive tests, correspondence and discussion. Men in other and kindred industries may be consulted and the standard practices of other companies examined.

The Union Pacific Coal Co. has by some such means adopted tentative standards for its mines. Other mines may need slightly different rules and the company does not itself believe that it has made standards that cover all equipment, all contingencies or that are the final word even for its own conditions.

To make these standards a mining engineer was specially appointed having no other duties to distract his attention. He consulted with the operating and engineering staff and visited the mines to ascertain the specific conditions to be met.

Every working copy of the standards has been numbered serially and a receipt requested of mine superintendents, mine managers, foremen and others, and this receipt is intended as a recognition on the part of the recipient that having given the standard due consideration, he recognizes its desirability and is prepared to make it a guide in his future work. Time will show what changes are needed, and every sheet is a loose leaf that can be replaced by another if experience, new equipment, study or a changed condition should dictate.

*Coal Age* takes pleasure in being the vehicle by which these standards may be available to its readers. It is hoped that it will serve to formulate the ideas of the industry as to details of installation.

A mine does not manufacture equipment but it puts it into place, it prepares for its placing, it assembles and it operates it. For this purpose it should have, in a degree, quantity design and quantity methods as the manufacturer has quantity production. Unfortunately, hitherto most installations have been placed as if they were the first of the kind ever planned. No past experience has been invoked, no records, no study. The installer, if he has time, searches only his own intelligence and, often being rushed, leaves the matter to a subordinate. This way lies failure.

To avoid such untoward results the standards which will appear beginning with this number were devised and issued, and the Union Pacific Coal Co. takes pleasure in placing them at the service of the industry.

# Many Mining Men Discuss Today's Coal Problems In Coal Mining Institute of America

## Underground Conveyors and New Methods of Using Them Prove Absorbing Subjects—Loading Machines Are Much at the Fore—Institute Sees Explosions in Bruceton

**By R. Dawson Hall and Alphonse F. Brosky**
Engineering Editor and Assistant Editor of *Coal Age*

THE AUDITORIUM in the Chamber of Commerce building, Pittsburgh, Pa., did not quite accommodate the large number of men who flocked to the thirty-ninth meeting of the Coal Mining Institute of America, Dec. 9, 10 and 11, to hear about and discuss the changes, that are being, and ought to be, made in the bituminous mining industry—mechanical loading and conveying, unique recovery methods of old abandoned Big Vein pillars, modern practice in underground substations, timber preservation and reforestation by coal companies and other subjects which were slightly less fully covered by discussions of questions from the floor. The last day of the meeting was set aside for an inspection trip to the Bruceton experimental mine of the Bureau of Mines where various tests were staged to remove any doubts of members regarding the dangers lurking in coal mines and the effectiveness of safety practices as a means to avoid them.

Following the custom of past years the Institute opened with a business session which lasted a scant one hour. Secretary H. D. (Joe) Mason quickly disposed of reports of activities during the year and then turned to news. The assets of the Institute at the opening of the meeting amounted to $2,128.45; seventeen members died during the year; the membership was increased by 192, bringing the total up to 3,021; Joseph Williams and Joseph Knapper, two veteran mine inspectors, were proposed for honorary membership. Mr. Mason announced that Scott Turner, the new director of the Bureau of Mines, has been elected automatically as an honorary member in accordance with the tradition of the Institute. The report of the board of tellers an-

**W. C. Hood**

New president of the Institute and assistant general superintendent of the H. C. Frick Coke Co.

**A. C. Fieldner**

Chief chemist of the U. S. Bureau of Mines and Superintendent of the Pittsburgh Experiment Station.

**J. J. Rutledge**

Elected second vice-president of the Institute. He is chief engineer, Maryland State Bureau of Mines.

**Nicholas Evans**

Retiring president of the Institute. He is mine inspector of the 24th bituminous district of Pennsylvania.

nounced the following election of officers President, W. C. Hood,, assistant general superintendent, H. C. Frick Coke Co., Uniontown, Pa.; first vice-president, Frank R. Lyons, vice-president in charge of operations, Consolidation Coal Co., Fairmont, W. Va.; second vice-president, J. J. Rutledge, chief engineer, Maryland State Bureau of Mines, Baltimore, Md., and third vice-president, N. D. Levin, chief engineer, Jeffrey Mfg. Co., Columbus, Ohio. Mr. Mason was re-elected secretary and treasurer for the ensuing year.

The opening address by President Nicholas Evans dealt with the success of the Institute and pointed to the things which must be done in the future to insure its advancement. He declared the Institute cannot stand still; it must advance and make progress if it is to live. It has seen progress, from mule to rope, and from rope to electric haulage and must make further changes for the better by co-operation in research. It already has given its moral support and expects to contribute more actively henceforth.

# Underground Mechanical Loading Makes Progress

Mechanical loading was discussed in the first paper of the day by Walter M. Dake, mining engineer, Joy Machine Co., Franklin, Pa. He said the success of mechanized mining in specific cases will depend upon the attitude of the mine owners and their officials. Without the support of the entire personnel the project undoubtedly will fail. Purchase of the necessary equipment should follow only after a thorough investigation has been made and complete estimates of cost have been compiled. Hourly wage rates for mechanical loading have made the companies put more force behind all innovations. And because loading equipment must of necessity be more complicated than cutters, for instance, intense inspection and careful maintenance are required to avoid breakdowns. Antiquated auxiliary equipment has caused many failures and should have no place in mechanical mining. There is even greater need for co-operation between purchaser and manufacturer than has been displayed in the past. Absolute costs should and must be kept.

In his paper he cited several experiences of companies with mechanical loaders. One firm in a high wage rate field started as early as 1922 and gradually installed six machines of a certain make. Their operation was merely experimental in that the machines were not entirely successful and their weakness developed. But so convincingly were the possibilities of mechanical loading brought home to this company during these early days that it has since installed seven rugged machines of the same make. Following the later installation savings were immediately apparent and as the various operations were stabilized a gradual reduction in costs was effected. In a recent six-month run during which 120,670 tons was produced mechanically, a saving over hand loading of 41.2c. per ton or a total of $49,716, was effected. At that, this company reports a low average rate of 112 tons per machine per shift and the average loading time of only 30 per cent of each shift.

E. H. Coxe inquired whether interest and depreciation were included in the computation of costs by this company. He was informed that these items were not included but that maintenance was. Mr. Dake answered a question relative to clearance, put by D. J. Parker, by saying that timbers must be kept 10 to 12 ft. from the face. J. J. Forbes asked what is being done to allay the dust stirred up by mechanical loaders. The reply was that nothing had been done in this direction with certain types of machine. Inquiry was made of the use of the Joy machine in the Pittsburgh coal seam. Mr. Dake said that two machines of this kind at work in this bed are averaging about 110 tons per shift each; drawslate is gobbed by hand.

Moving pictures of the Joy machine in operation in a mine were then shown. The audience was amused by the speed with which cars were shifted in the picture and was told that only in movies is this being so successfully accomplished.

Some of the accomplishments of the Myers-Whaley loader in coal mine work were reviewed in an interesting paper by Charles C. Whaley of the Myers-Whaley Co., Knoxville, Tenn. He described conditions and results attained in one mine paying the high wage scale of the Central Competitive field. The bed averages 6 ft. thick and is overlaid with 6 to 14 in. of clod which falls with the coal. Rooms are driven 36 ft. wide and the coal is undercut and snubbed, and is well shot. A crew of 13 or 14 men, depending upon the quantity of clod which must be handled, and including one foreman, performs all duties incident to mining and loading. This crew in a month of 25 working days placed on the parting an average per shift of 191 tons at a cost of somewhat less than 82c. per ton, including all items, as against a cost of hand loading of about $1.32, thus making a saving of 50c. per ton.

### Keep Airway Clean

He next called attention to an editorial in the Oct. 15 issue of *Coal Age* relative to keeping airways clean. The Myers-Whaley shovel is being used in a number of mines for this work and for taking top and bottom in other entries as well. The first machine of this kind used for lifting bottom was installed in 1922 in a central Pennsylvania mine in the Miller seam which averages about 36 in. thick. The machine lifted 3 to 4 ft. of bottom composed of bastard fire clay which broke in large pieces. Despite the fact that the work of the machine was confined to two dip headings which were wet and where the coal could be mined only one cut in advance of bottom taking, not to mention other difficulties encountered, the machine succeeded in loading, over a wide period, an average of fifty 1½-ton cars per shift, advancing each of the pair of entries 15 ft. per shift. The management reports that the cost of dead work was more than cut in half and the rate of entry advance was doubled. On the merit of these results this company has installed additional machines.

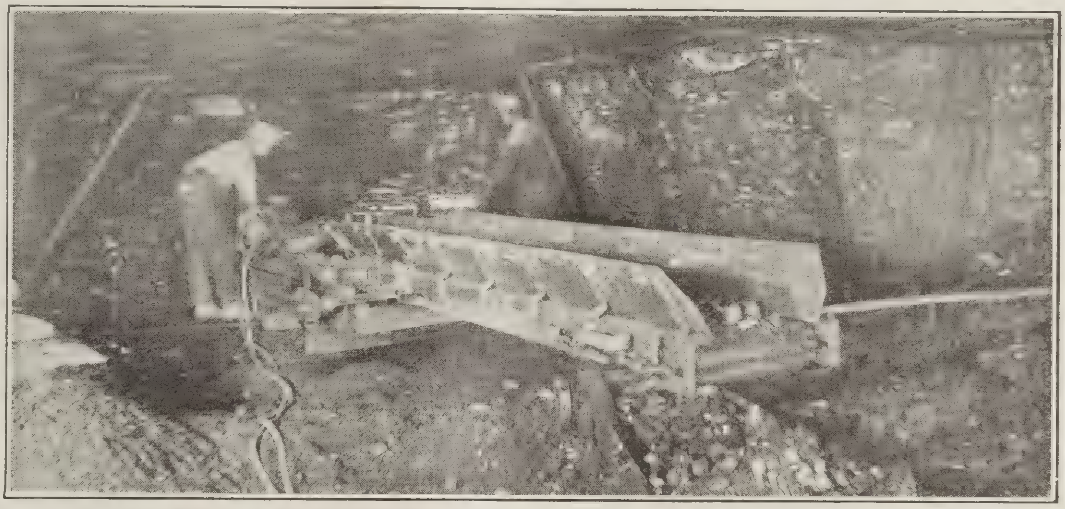
In 1923 another company installed a No. 3 Myers-Whaley for taking top and since has installed five more. Here again the Miller bed is being mined. This averages about 40 in. in thickness and is overlaid by a roof of laminated shale. Entries are driven 11 ft. wide and 3 to 4 ft. of top rock is brushed on all the mains. Coal is loaded by hand in a stretch of about 100 ft. in advance of top taking, throughout which distance permanent track is laid. Roof to the necessary clearance height in this entire stretch is brought down before the machine starts to load. Holes are shot in twos, one near each rib, producing clean breaks. Jackhammers are used for drilling. By this means, barring haulage delays, continuous loading is afforded the machine and the cleanup advances regularly about 65 ft. each shift, the material filling eighty-five 1½-ton cars. The best record is 127 cars per shift. The crew consists of one runner, one helper and one motorman.

This company is using the same type of machines for cleaning up falls in aircourses in the Lower Freeport bed. Here the roof is of fire clay and falls to a height of about 2 ft. above the coal. Track is extended as required in built-up sections 7½ ft. long. Such a section can be added in about 10 min. The crew consists of two men who perform all duties connected with this job. The average loading rate is about forty 1½-ton cars per shift.

At still another operation during last July this company advanced an entry through 1½ ft. of coal and 6 ft. of rock, on a dip of 7½ per cent, with considerable water, 214 lin.ft. in 26 working days. Two crews of 2 men each, performed all the duties including tramming.

**Short Face Loader in Entry**

This machine will load out a place as wide as 35 ft. The rear conveyor reaches sidewise 13½ ft. from the main body of the machine which can also be swung at an angle to give 4 ft. additional reach from the center of the place. By using a face conveyor the workable width can be further increased. This unit cuts and loads coal in an advance of 5 cuts or 30 ft. in a place 15 ft. wide in 8 hr. regularly and has made an advance of 42 ft. in 8 hr.



W. L. Affelder, assistant to the president Hillman Coal & Coke Co., sees real value in the use of the Myers-Whaley for taking top or bottom in low beds and for cleaning up air courses in high ones. He is confident its use will be widened after it is equipped with an explosion-proof motor. Trot Dodson, vice-president in charge of operations, Pittsburgh Coal Co., asked if coal was separated from the rock in the last mentioned application in Mr. Whaley's paper, and was told that it was not. Thomas S. Lowther, mine inspector, Indiana, Pa., said that at the No. 45 mine of the Russell Coal Mining Co. at Clymer, Pa., top rock is taken with a Myers-Whaley in stretches of 200 ft. The rock is brought down 2 or 3 cuts in advance of the machine. The roof is a bastard fire clay that cannot be timbered economically. The machine loads 70 to 110 one-ton cars per shift. W. B. Wardrop, mine inspector, Barnesboro, Pa., pointed to the advantage of uniform head clearance which the machine provides. He stated that one company asserts that the yardage cost has been cut in half by this machine.

Continuing the treatment of mechanical loading devices, A. R. Anderson, Jeffrey Mfg. Co., of Columbus, Ohio, gave a number of results attained by the Jeffrey shortwaloader and conveyor, which equipment has been designed with the purpose in mind of concentrating the workings. None of this equipment is supposed to be moved from place to place after each cut. As an aid to the driving of narrow work the shortwaloader has been developed. This machine both cuts and loads. The average advance being made with it is 30 ft. per shift.

In one mine in 3½ ft. of coal a pair of entries was driven 1,800 ft. in three months by two shortwaloaders which worked single shifts. Breakthroughs were cut by these machines during the advance. In another mine in a 3½-ft. seam one machine cut and loaded 643 ft. in a month of 25½ working days, an average of 25.2 ft. per day. Still another machine advanced an entry 726 ft. in a month of 25 working days at an average of 29 ft. per day. This same machine maintained an average of 33 ft. per shift during 14 consecutive days. The longest advance made in any one day thus far is 42 ft.

Mr. Anderson said that in two mines where the entire output is loaded with shortwaloaders the output per man including everyone in the mine and tipple amounts to 10 tons, or more than double the average of 4 to 5 tons per man attained by the bituminous industry.

He next introduced the Jeffrey 44-B conveyor loader which is at work in several mines. This machine extends along the entire length of the face. As it is only 28 in. wide and 17 in. high, it is applicable to low coal as well as high and is well suited for long face work where timbers must be maintained close to the coal. In one mine where this machine is being used the coal is 3 to 3½ ft. thick. This machine is taking out two cuts on a 100-ft. face per shift. He declared that in high coal two cuts per shift can be taken, yielding a correspondingly higher tonnage.

In one mine the Jeffrey 47-A sectional conveyor is being used on a 300-ft. face. The coal is undercut and shot down on the night shift and loaded by 15 men on the day shift. This crew and equipment has loaded 480 tons in one shift, which is an average of 32 tons per loader. Moving pictures of the equipment described by Mr. Anderson were shown prior to adjournment for lunch.

The afternoon program of the first day was opened by the showing of a motion picture which presented the complete process of manufacturing wire rope in the plant of John A. Roebling's Sons Co.

Then Richard Maize, mine inspector, conducted the discussion on a group of questions, the first of which was "What New Work Has Been Done in Recent Years to Prevent or Reduce Mine Accidents?" William German focused attention on the prevailing dangerous practice of handling black powder in metal kegs. He

**Conveyor on 300-Ft. Face**

Here the sectional type conveyor is used on the face. Fifteen men are stationed at 20-ft. intervals along this face and have loaded as much as 480 tons of 5½ ft. coal in 8 hr. A night crew does the cutting, shooting, etc. Here a room pillar is being slabbed. The practice in this mine is to drive 12-ft. rooms on 95-ft. centers and then to take the pillar by slab cuts until it is only 30 ft. wide.

remarked that Du Pont now offers a black powder in pellet form which is not exposed and, therefore, is comparatively safe to handle.

E. J. Gleim, of the Bureau of Mines, related the work which the Bureau has accomplished during the last two years in testing and approving certain classes of machines and devices which meet the prescribed minimum safety requirements. During this time it has issued 24 new approvals so that now the Bureau's list of permissible equipment is wider and far more complete than heretofore. Prior to Jan. 1, 1924, there were no permissible room hoists, air compressors, mine pumps, power trucks and storage battery locomotives for main line haulage, but now this equipment is on the list. Further additions consist of four types of mining machines, one coal drill, six storage-battery gathering locomotives, five shot-blasting units, one flash light and one methane detector.

Two of the above approvals—the storage-battery power truck and the storage-battery locomotive—provide considerable possibilities for the reduction and prevention of accidents by enabling operation of a mine without the use of feeder circuits.

### Discuss Safety Devices

H. H. Hamilton pointed to a safety blasting cap offered by Du Pont, the two ends of which are short-circuited to guard against stray currents and conducted currents up to 550 volts. H. D. Mason said the most available means of bettering safety is by living up to the compensation laws. A new safety device which automatically keeps sand dry and free-running was described by G. M. Crawford. It is offered by the Safety Electric Corp., of Philadelphia, Pa.

That codes of standardization go a long way toward eliminating hazards and bettering operations was the view presented by R. D. Hall, engineering editor, *Coal Age*. A few remarks were added by S. W. Blakslee, division superintendent, Pennsylvania Coal & Coke Co., Ehrenfeld, Pa., on the two-pointed merit of mechanical loading which affords concentration and, therefore, better supervision and increases the output per man which is not accompanied by any increase in accidents. A. N. Young, superintendent, Hillman Coal & Coke Co., mentioned a practice which has been established in a number of mines of inserting a wooden wedge between the brake lever and the ratchet of a mine car to avoid inopportune releasing of the brake after it is set.

W. L. Affelder believes the colored man is safer than the white because he is timid and cautious and, therefore, is careful. White men have been the victims of every fatal accident this year in one of his mines in which one-fourth to one-third of the men are colored. An issue arose as to the advisability of forcing men to sound roof frequently. Mr. Young explained a rule which one company has adopted requiring officials to compel miners to sound the roof every time an official visits their working place to get them into the habit. Mr. Affelder believes this rule attacks safety from the wrong end, making roof sounding mechanical and compulsory instead of premeditated.

According to E. E. Girod, mine inspector, a number of dusty mines in the southwestern part of the state provide water hose for every working place. He wants to see coal dust settled at the point of origin. Six mines have provided hose for each of their 1,500 workers and two other mines are following the suggestion. In five mines in his district water is applied to the ingoing bits of mining machines. In one of the latter mines coal dust was scarcely noticeable anywhere five weeks after the mine had been rock dusted.

T. G. Fear, general superintendent, Inland Collieries Co., Indianola, Pa., related one of his experiences at an Alabama mine. Here out of five fatal accidents only one victim was a negro despite the fact that 60 per cent of the miners were colored. He claims that superintendents and foremen should be held responsible for accidents to a greater degree than they are. Many accidents occur because of a lack of knowledge of conditions on the part of the management. One company in Pennsylvania having 14 mines provides its underground officials with printed forms in a book in which must be entered the conditions of each working place at each visit. Every two weeks these data are transferred to a master sheet for comparison studies, when various charges are counted. Two charges to any one man calls a warning and three brings dismissal.

The next question asked was whether or not it is an economy to leave a 100-ft. water barrier in mines adjoining worked out mines as in the coke region of Pennsylvania where the coal acreage is high-priced. H. S. Harrok, consulting engineer, of Pittsburgh, Pa., opened the discussion. He is of the opinion that the leaving of such a barrier, which is following precedent only, is a needless waste. He would leave only a 15-ft. pillar to protect ventilation and would pump the water. In a fair-sized mine the loss apportioned over the life of the mine might be as much as 7c. per ton, whereas handling about 3 tons of water for every ton of coal mined (the coke region ratio) would cost only about 2½c.

George Steinneiser, of Punxsutawney, Pa., declared that a 15-ft. pillar would not be sufficiently large to hold in the ventilating currents as it would undoubtedly crush. George S. Rice seconded that remark and called attention to the danger of encountering unexpected bodies of gas in the old workings. Mr. Harrok thinks that even a 100-ft. barrier is unsafe as the exact courses of the boundary of old workings are generally not known, for which reason there is danger of puncturing them. C. P. Bryne, mine inspector, advised drilling as a means of determining the extent of the barrier.

The vicissitudes of the water problem in the anthracite region have in some cases been due to punctured barriers, according to T. M. Chance, consulting engineer, of Philadelphia. He favors the leaving of an adequate barrier of a width fixed by conditions, half of which should lie on each side of the boundary line. He added that the danger of puncturing is removed by accurate mapping. Mr. Hall would donate a recoverable barrier to the mine that handles the water.

### Wood Ties for Steel?

The third question of the day was: "Is the Arcing of Electricity Between Steel Rails and Steel Ties Likely to Cause a Mine Fire?" Mr. Affelder opened and led the discussion. Evidence and subsequent tests following a fire in one of the mines of the Hillman Coal & Coke Co., leads him to believe that a fire can be started in this way and caused him to replace steel ties with those of wood in this mine. The fire referred to occurred at the end of a retreating butt entry, about 200 ft. from the face entry on which had been shifted, before the fire was detected, a large trip of cars by a trolley locomotive which pulled away at a point abreast of the butt entry. He thinks that broken cross bonds outby of the locomotive caused the return circuit to travel only to the end of the temporary track where it arced between the rail and a steel tie, as the butt entry track was bonded on one side only, thus igniting fine coal on the bottom.

He described a condition which might have significance in the case, namely, a cannel coal roof over the coal which is so volatile that it can be lit to a glow with a match and which flakes and falls to the floor.

An investigation disclosed no other possible factors in the fire. A series of tests were staged in which arcing was caused in the manner described. Mr. Rice knows of fires which are assumed to have been started by such arcing in mines where wooden ties were installed. Graham Bright suggested the use of a double-conductor cable where a reel locomotive is used, or a storage-battery locomotive as a means to avoid the arcing. Mr. Affelder said that such provisions would not serve the specific purpose in that no wire extended within 200 ft. of the origin of the fire. Mr. Rice believed the cause was obviously that chosen by Mr. Affelder.

Edwin H. Johnson, mining engineer, Coloder Co., Columbus, Ohio, added a paper to the meeting's symposium on mechanical loading achievements. He sees the greatest future growth in mechanical loading machines in organized fields where it would be utilized as a weapon to reduce the cost differential between high and low wages. He looks for little opposition from the miners' organization whose leaders are ready to support gradual changes which will improve the working conditions of the miner. The surety of economies in mechanical loading at this early date is evidenced by remarks coming from operators in fields where labor is scarce, to the effect that without mechanical loaders they would be unable to maintain their present level of production.

He referred to a new factor in mechanical loading, namely, machine accounting characteristics, which can be determined only after a long period of observation. This factor includes definite knowledge of "the capacity of a machine under known conditions, the degree of dependability for uninterrupted operation, the maintenance cost in repair parts and repair labor, the oil and power consumption per ton and the rate of depreciation." In this connection Mr. Johnson's paper briefed a statement by James Elwood Jones, general manager of the Pocahontas Fuel Co., which this year will produce by machine loading more than 1,500,000 tons of coal, that he can foretell a month or a year in advance, what tonnage can be produced at almost exactly what cost at any of his mines, some of which are being operated exclusively with loading machines.

He brought out the point that the loading machine is not so much needed as the engineering viewpoint in approaching the solution of physical and economic problems confronting the mine owner. He characterized the room-and-pillar system of mining as traditional, institutional, "from which any deviation is frowned upon by older heads." Departures from the old methods involve new problems which must be solved. Loading machines have stirred up revolutionary practice so that today operators everywhere are improving their haulage and tipples, experimenting with new shooting methods, studying roof action and developing long faces, hoping to obtain more efficient operation through the use of mechanical loaders.

## Banquet Program Includes Movies and Music

The outstanding feature of the banquet was the story of the "Exploration of the Grand Canyon," delivered by Col. C. H. Birdseye, of the U. S. Geological Survey. It was accompanied by photographic slides and moving pictures of the explorers' boats shooting the rapids and of the topographers making their observations, the purpose of the survey and level, which was carried through the canyon, being to ascertain where sites for dams could be established advantageously. To this end explorations were made of canyons entering on both banks of the river to a level such as would be invaded by the water if the proposed dams were erected. One of the proposed dams will, if erected, be 566 ft. high, and the water behind one dam will back up in every instance to the bottom of the next above it.

Jesse K. Johnson, president, Ridgeview Coal Co., Boliver, Pa., addressed the institute on the problems of the coal industry. He declared the operators were each engaged in seeking his own individual industrial advantage and viewed each question as a personal matter and not as one affecting the group. If they followed a principle of group action like the mine workers, they would gain for all what they could not obtain if each worked for himself.

Mr. Johnson said that not only had the miners in Illinois and Indiana penalized the operators by making a rate of $12 per day for the loading machine operatives, but they had added to the handicap by producing only

125 tons per day per machine. The non-union mines in West Virginia paid $5.67 per day and the machinery produced 300 tons daily. Yet the conditions in both regions were essentially the same. The "cost of operating the mechanical loader in union Illinois is 33.5c. per ton as against 7.08c. per ton in non-union West Virginia."

Mr. Johnson declared that the representatives of the U. S. Geological Survey had ascertained that at one large union mine where a careful check system is kept the miner only worked 27 per cent of the time. But this wage difficulty is not all. Mr. Johnson cited the freight-rate problems, saying that "The Pennsylvania R.R. has a rate to tide of $2.50 per net ton for an average of 227 miles and a rate from central Pennsylvania to East St. Louis of $3.82 for a haul of 700 miles. Anybody in a kindergarten would see that these rates are not equitable."

To the speaker it seemed that mergers were the only solution for the difficulties surrounding the operation of coal mines. "The operator," said he, "who thinks that overproduction will adjust itself is living in a fool's paradise and is due for a fool's awakening." Mr. Johnson called attention to the fact that a freight locomotive that in 1915 used 160 lb. of coal would do the same work in 1925 with only 55 lb., "L. F. Loree, president of the Delaware & Hudson Ry.," he stated, "said recently that in the present year $200,000,000 may be saved in the operation of the trains of this country, and that the 90,000,000 tons of coal now used in freight service can be reduced to 27,000,000 tons." "Cars," added Mr. Johnson, "driven with engines of the Diesel type running between Ottawa and Montreal on the Canadian National Rys., consumed fuel of the value of $5.87, while coal for an equal trip would have cost $35 or more.

William C. Hood, the incoming president, made a short address and excellent music was furnished by the Johnstown Glee Club, which is composed of members of the Safety and Welfare Association of the Bethlehem Mines Corporation. The Club was represented by 22 male members and two lady pianists. They consisted wholly of employees of the Bethlehem company's mines at Johnstown, which company provides for their entertainment and transportation. Dressed in tuxedos the club made an "immense hit" with the audience, their technical talent being remarkable.

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# Pillar Recovery and Underground Substations

In the expectation that some of the mines that have been operated at a low rate of extraction might avail themselves of means by which their abandoned coal may be recovered, Dr. J. J. Rutledge described the work of recovering pillars at the former Detmold, Savage and Jackson mines in Lonaconing, Md. These mines are some of the real old operations of the bituminous fields. Detmold, for instance, was opened in 1853 and Savage in 1861. The three mines have caved extensively but now are being worked, Detmold and Savage by the Maryland Coal Co., and Jackson by the Georges Creek Coal Co. The first concern is using less timber than the second but is failing to recover the bottom coal and roof coal in the rooms. This coal is being retrieved, however, in the mines of the Georges Creek Coal Co. There the old workings are completely opened up and the material that has fallen is cast over into the gob except what is clean coal, that material being loaded out into mine cars for the market.

Mr. Rutledge declared that in areas where the original operating concerns had removed only 5,000 tons per acre, the Maryland Coal Co. was now loading out a further 10,000 tons per acre, for there is as much breast coal in the pillars as there was in the rooms and there is also bottom coal and top coal in those pillars 3 ft. of the one and from 2 to 3 ft. of the other, and, moreover, both bottom and top coal are retrieved from old rooms as they drive their new entries and as they crosscut from their new rooms to standing pillars. The methods of working were described in *Coal Age*, June 20, 1925.

Dr. Rutledge explained that the Maryland law and that of Kentucky provided that juries could be taken on the ground to view the damage made by mining and that in consequence the awards were tempered in those states with better judgment than in Indiana and Illinois. It would be well if those mid-west states had such laws. It might be possible then to remove the greater part of the coal.

The mines in Maryland where the recovery of coal is going on have such a high degree of concentration, especially as they are worked double shift, that an inspector can make a thorough investigation of such a mine in four hours whereas a similar examination of the thin Tyson-bed Mines above would take days, even though their outputs are no larger.

Elkins Read, of the Maryland Coal Co., in discussion said that in opening up the old rooms every alternate pillar might be skipped. If that were done it would be necessary to cross only one room when driving forepoling work through to recover the pillars. However, the skipping of every alternate pillar was found to weaken the roof so it was necessary to make the skipping only in one pillar of every three. In consequence two rooms have to be crossed by forepoling.

The cover being about 500 ft., the pressure is considerable. Mr. Read said that the miners, including those who were doing the forepoling work, averaged six tons per man. So far 350,000 tons had been removed by these methods without a single fatal or serious accident, though the work was dangerous. The men knowing the danger used due precautions, and consequently the excellent safety record detailed was attained despite the natural difficulties.

It was resolved after discussion that the Coal Mining Institute of America should become sponsor for George H. Ashley's coal classification, presenting it to the Mine Standards Correlating Committee for admission to the standards of the American Engineering Standards Committee. The standards were submitted to the Institute two years ago and were then studied by a committee which reported back to the Institute, giving them their approval.

C. H. Matthews read a paper on "Modern Practice in Underground Substations," saying that it was preferable to put substations underground where such stations were placed for the purpose of providing power at the working face. It was better to run the alternating-current cable down the borehole than to convert the current on the surface to direct current and put a direct-current feeder down the borehole.

He suggested that "permanent pumprooms generally make good locations for underground substations, as there is an attendant available and as the alternating current power for the pump motors and for the converting equipment can be transmitted over the same cables from the surface. Recent application of complete automatic operation of centrifugal pumps may, in time, eliminate the pumproom attendant, but automatic control can, of course, also be used on the substation equipment. Even if an attendant were present the use of automatic reclosing circuit breakers on the direct-current feeders is recommended. Their use eliminates delays in operating the circuit breakers and prevents a careless attendant successively reclosing breakers on short circuits, thus injuring the machines.

"Where hoists are located underground it is sometimes possible to locate the converting equipment in the hoist room. In this case reclosing direct-current circuit breakers are a necessity as the hoist operator must give close attention to his hoist and cannot stop a trip to reclose circuit breakers. On the other hand, production cannot be held up waiting for circuit breakers to be closed."

In response to this statement Graham Bright remarked that the attendant on a substation had the easiest job around a mining plant. Mr. Bright regarded it as desirable that the station runner should have other duties than operating the converting equipment, enough at least to keep him from falling asleep. As the result of his freedom from toil he often neglected his few but important duties and, therefore, it was well not only to put an automatic reclosing circuit breaker on the line but to protect the alternating-current motor automatically against phase failure and the bearings against excessive heating.

Question No. 4, relative to arcing of electricity between steel rails and steel ties and the possibility of thereby starting a mine fire, was presented anew by M. D. Cooper, in reopening the question box. G. S. Rice said that he believed imperfect bonding was the cause of many mine fires even with wood ties. He had noticed evidences of such danger. Consequently the problem was solely: Did steel ties accentuate that risk? The menace was present in some degree no matter what kind of tie was used.

The next question, "What items should be entered on a coal company's cost sheet?" and "What constitutes what is known as strictly operating cost?" revealed that the standards of accounting prepared at great expense and much labor by the National Coal Association are not getting the observance their value and authority demand.

A. K. Pollock, of the Ford Collieries Co., said that as an operating man he naturally sought to have as little as possible charged to operating cost. F. B. Dunbar, general superintendent, Hillman Coal & Coke Co., wanted the most careful and day-to-day operating costs and the most general knowledge of those costs among the men in charge at his mines. Only when they were so provided and understood would the mine officials interest themselves in economical operation. J. K. Johnston urged that accurate operating costs be kept so that no one could fool himself that he was cutting costs when all he was doing was hiding his eyes to economic loss. Mr. Rice said that classifications and arrangements of costs were too often such that it was impossible to find out what costs were chargeable to mining, what to haulage, what to ventilation and what to drainage.

### SINGLE ENTRY IMPERMISSIBLE

Mr. Dunbar, in replying to Question No. 6, as to the best method of ventilating single-entry work especially where new methods of mining are being tried out, said there was no proper method of driving single entry for single-entry development was itself impermissible. H. I. Smith wanted permissible motors and a permissible switch where auxiliary fans were in use, but Mr. Rice declared that if these fans were stopped there would be gas pockets and that if kept running 24 hr. per day it would be necessary to have continuous attendance, otherwise they might stop or a fall might cause an untoward accident.

Mr. Rice said that foreign practice in regard to boosters had been misrepresented. Booster fans were used, it is true, in foreign mines. Where the extension of the workings was considerable and leakage great and irreducible, the water gage used, though high, might be unable to cause the air to circulate in sufficient volume, where a single fan was employed. In consequence boosters might be used to meet this condi-

**Ralph Beerbower** **A. K. Pollack** **A. E. Holbrook**

Were among the members of the Coal Mining Institute of America at the annual meeting in Pittsburgh. Mr. Beerbower, of Pittsburgh, and Mr. Holbrook, of State College, Pa., retired as managing directors of the Institute. Mr. Pollock is general manager of the Ford Collieries Co., Curtisville, Pa.

tion, one unusual in this country. This need is particularly pressing in the mines which, being driven far away under the sea, cannot shorten the length of their aircourses by auxiliary shafts.

In Germany and France tunnels driven across the strata are, it is true, ventilated during construction by auxiliary fans and air ducts, but these fans are driven by compressed air and no development is attempted till these tunnels have reached workings so as to permit the ventilation to be established by the action of the main fan. H. N. Eavenson declared he had given the matter no thought, but he didn't like single-entry methods at all and E. H. Coxe was about equally unfavorable.

# What Shall We Do About Mine Timber?

The Thursday afternoon session opened with a paper by H. S. Newins, Department of Wood Utilization, State College, Pa., on "Our Mine Timber Supply in Pennsylvania and in Other Coal Producing States." This will appear in a later issue of *Coal Age*. He mentioned the fact that where the moisture content of the wood is kept below about 20 per cent rot is largely eliminated; but this condition would require a low relative humidity. Inspector Girod for obvious reasons would avoid the establishing of this condition as a means of preserving mine timbers and stated that mine owners must adopt some other expedient or else suffer the loss caused by rot. In his paper Mr. Newins suggested for secondary preservation and for protection the use of plastered or projected concrete on creosoted timber lining in downcast shafts. Graham Bright wanted to know whether projected concrete alone would serve the purpose and was told that the timbers must first be immersed in or brushed with a preservative solution if rot is to be avoided.

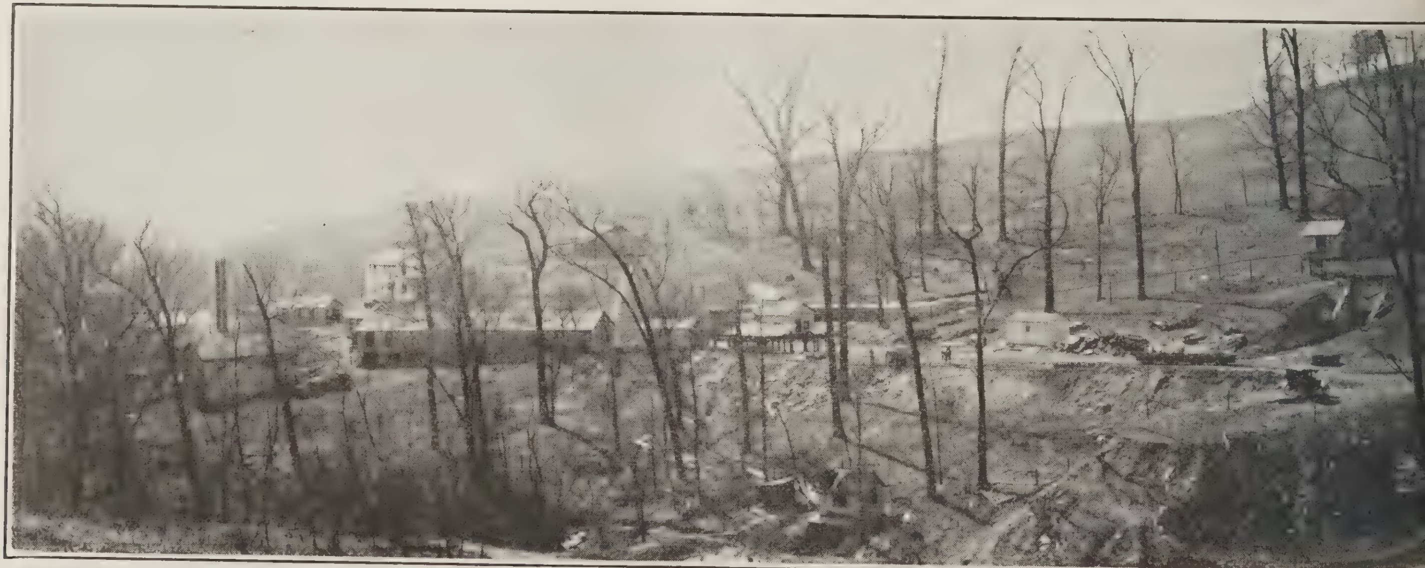
Mr. Newins explained that dry rot is contagious; that the practice of scraping from wood exterior growths of fungi is not beneficial and may serve to spread the disease to nearby healthy timbers. Dry-rot fungi are not necessarily developed by a low relative humidity nor by a high. Good ventilation checks their growth. J. T. Ryan asked if limestone dust has any tendency toward preserving timbers. He was informed that it has none. Patrick S. King, mine inspector, wonders why conifers are so widely chosen by coal companies in the reforestation of denuded or partly stripped timber lands. The answer is that conifers are most easily handled and transplanted because of their shallow rooting as against the hard woods which are hardest to handle.

Mine Inspector Ira Thomas, of Johnstown, Pa., sought an explanation of the methods of creosoting timbers. One way is by brushing; another by immersion in a bath of creosote which is alternately heated and cooled until the desired penetration is obtained. J. J. Forbes, of the Bureau, desired to know what degree of penetration is needed and was told that penetration must be deeper than injuries by abrasion. Brushing is quite satisfactory on timbers not exposed to abrasion.

The next paper on "What Some Coal Companies Are Doing to Replenish the Mine Timber Supply" was read by Graham Bright in the absence of the author, Newell G. Alford. This paper also will appear in an early issue of *Coal Age*. The paper indicated what might be expected as the normal growth in the consumption of timbers by coal mines in the future. Mr. Rice expressed a thought that concrete and other substitutes, might lower the consumption of timber by mines because of the increasing cost of the latter. Mr. Bright looks for no such effect in the next ten years at least.

Because of its rapid growth, would not the catalpa tree be well suited for reforestation, wondered Nicholas Evans. Mr. Newins answered this question. Quick growth is not a factor inasmuch as properly developed reforestation programs involving trees of stronger wood structure will meet and exceed normal demands upon them. Mr. Rice was told in answer to a question in this regard that the catalpa is about as susceptable as and less desirable than many other trees.

At this point R. M. (Bob) Lambie, chief of the West



**Bruceton Experimental Station, Near Pittsburgh, of the U. S. Bureau of Mines.**

On the last day of the Institute's meeting the men went to this station where various demonstrations of rescue and safety equipment were given, and where a coal dust explosion was put on. At the right is seen the steel testing gallery. In this gallery

Virginia Department of Mines, was asked to make a few remarks. He is not bothering about, nor is he elated by, high production in his state which is now leading all others. He has an eye more for safety and was happy in being able to announce that his force has been increased by three men. His department is doing things in the interest of safety. The Bureau of Mines has loaned him the services of W. H. Forbes of Huntington, W. Va., who is now engaged co-operatively in a study of roof conditions in West Virginia mines, toward the end of uncovering wider knowledge of roof control which will be passed on to the operators.

A question box discussion then ensued, led by Mr. Fear. The lead-off to this part of the program was a paper by J. E. Tiffany, Bureau of Mines, covering methods of producing more and better lump coal, in which he gave several methods of shooting under various conditions. One mine in Illinois producing 4,000 tons of coal a day has been able by a standard system of shooting alone to increase by 2 per cent its yield of 6-in. lump. It is possible to get straight ribs with top cutting but not always uniformity of depth of the cut. Rib holes always should be placed parallel to the rib at a point from 1 to 3 ft. from the latter.

Exception was taken by Mr. Fear to one of Mr. Tiffany's statements regarding the degree of increase of lump coal by the use of rock dust stemming. This practice when properly followed will yield a good deal more than a 5.4 per cent increase in lump coal. The rock dust should be deposited lightly in dummy cartridges which should have a 1¼-in. diameter for a 1½-in. hole, and the ends should be more or less open. Mr. Maize wanted to know whether more lump coal can be produced by tight tamping of rock dust stemming. Mr. Fear said "yes" but Mr. Tiffany said "no." The latter has been able to increase the lump by 5 per cent by this means. Tests show that tightly tamped rock dust can be compressed to at least one-half its original volume by heavy hydraulic pressures.

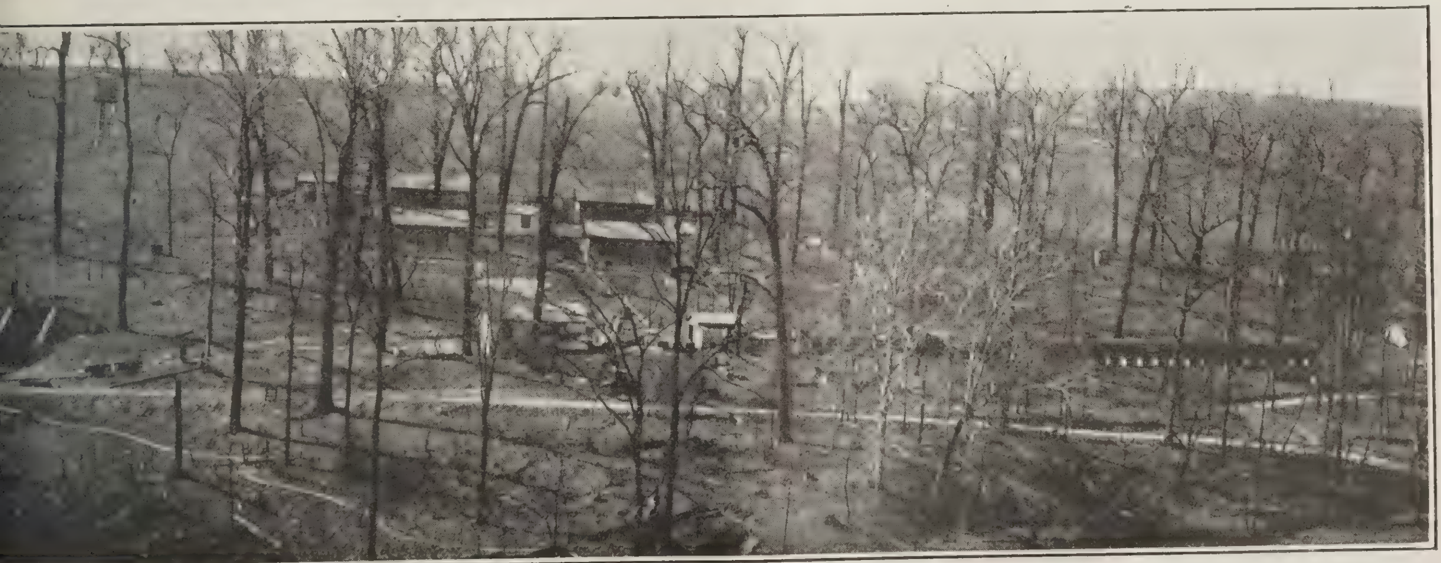
C. W. Nelson, explosives engineer, Hillman Coal & Coke Co., has found certain plants increasing the production of lump by reducing the diameter of the cartridge and lessening the weight. The length of the charge is an important consideration. At one mine the diameter of the cartridge was reduced from 1½ to 1¼ and then to 1⅛ in. with increasingly better results and at a saving in powder cost. Companies should find out how small a diameter can be used and what is the deterioration in the explosive of a cartridge of the minimum diameter. Supervision in shooting is of little benefit without standard and uniform powder.

E. H. Johnson believes as good results can be obtained with permissible explosives and rock dust stemming as can be obtained in the same way with black powder, providing the charges are scattered. B. L. Lubelsky, explosives engineer of Washington Gas Coal Co., and former research man of the Bureau of Mines, discouraged the propensity toward the use of black powder as a producer of more lump coal. His research tests show that a high-rate permissible gives the best results. In a loose coal the gases arising from a slow powder escape along the bedding planes. Slow powder is all right in hard coal but in soft coal he encourages the use of a fast powder.

### BLASTING COAL FOR LOADERS

Here the discussion turned to a specific question: "What is the best practice for the blasting of coal for mechanical loaders and do the latter have any decided effect on lump coal?" To get best results in shooting coal for mechanical loading he would use four or five shots instead of two or three, without increasing the total quantity of powder. Snubbing shots are quite beneficial. Mr. Nelson asked if it would be practicable to shoot and load mecahnically a cut in two steps. That procedure would further reduce the now comparatively low running time of the loading machine. H. H. Hamilton called attention to the fact that the deeper cuts which mechanical loading is generally commanding will require radical changes in methods of shooting.

Mr. Johnson stated that unduly hard shooting and not the loading machine causes pronounced degradation of coal in mechanical mining. A comparison of results attained in two mines by a company in the Pocahontas field—one producing 50 per cent of its output with loading machines and the other its entire output by hand loading—showed that the former loaded 17 per cent less slack than the latter



**It was Visited by the Coal Mining Institute of America Last Week**

miniature explosions of gas, coal dust or both are staged. In it developed pressures, temperatures, etc., are carefully recorded and the manifestations studied. Some of the explosion tests the Institute saw were terrifying to novices.

The eighth question was "Is scientific management applicable to the coal mining industry and can anything be learned from manufacturers?" Mr. Fear regards mine supervision wholly inadequate as compared, for instance, with outside gang labor where in spite of the fact that the men work together in large groups, and in plain sight of the overseers, a larger number of the latter for a given number of workmen are provided than in the coal mines. Of recent years, however, supervision has improved. He prefers the name "section foreman" to "assistant foremen" and does not extend the authority of any beyond the limits of a section.

J. K. Johnson, Bolivar, Pa., believes there are wide possibilities in scientific management especially in laying definite construction plans in advance. One company asked a superintedent to lay out and estimate the cost of a five-year construction program for his mine. This was passed on by the engineering department and then reconsidered by an outside party after which it was presented to the board of directors. The latter approved the program and appropriated the necessary funds without argument, chiefly because the program was carefully planned.

Mr. Fieldner believes the industry can learn much from other industries and by research. He pointed to the accomplishments of the co-operative research fellowships between the Carnegie Institute of Technology and the Bureau of Mines which are being supported by industries, as convincing evidence. Mr. Hall said that the manufacturer does not leave design to workmen. In the factory everyone knows what to do and how but in the mines there are no standards and, consequently, jobs are done in a hundred different ways apparently without knowledge of the best. Mr. Fear thinks every operation should have a good mechanical man as well as a mining engineer and a chief electrician.

### Must Consider All Problems

M. D. Cooper, assistant general superintendent of the Hillman Coal & Coke Co., believes the widest avenue leading to improvement lies in the rerouting of coal as it lies in the rerouting of materials in the factory. There is danger of concentrating too much on one aspect of the problem, as, for instance, the mechanical loading of coal, and forgetting other interconnected problems.

Mr. Rice let it be known that the industry owes much to the manufacturer, who has supplied much of the mechanical brains. Sometimes, however, the manufacturer forces the mine owner to fit his conditions to a machine instead of vice versa. Capt. Steidle deplored the fact that few mine owners really know what is being done, nor how long it takes to do a job or what it costs. This fact was brought home to him during his investigations on behalf of the Coal Commission. The Lynch mines of the U. S. Coal & Coke Co. in Kentucky have, and continually compile, data of this sort which are weighted and averaged as standards. These are the tools of the officials.

The last question of the day, "Is it safe practice to use open lights in so-called non-gassy coal mines?" unloosened some pointed remarks. Frank Dunbar, of the Hillman Coal & Coke Co., knows of no non-gassy mines. One can't be too careful, he warned, and the open light is a danger in itself in home, factory or mine.

**D. R. Blower**

A member of the Institute from California, Pa., who served as a managing director during the past year.

Mr. Thomas said that while the state mining law allows open lights in some mines he condemns the practice even though in a number of old mines, as in those of the Broad Top field and surrounding regions of Pennsylvania, no gas has been detected by ordinary means in 60 or 70 years.

Mr. Hall insists that laws governing other practices must follow immediately after exclusive use of electric cap lamps in our mines, as compulsory use of permissible equipment and flame safety lamps everywhere. Otherwise, he believed men would carry matches and resort to other unsafe practices. Mr. Rice said that too much reliance should not be placed in ventilation as a means of keeping mines clear of accumulations of gas. Men not of that belief have had disastrous explosions. He seconded Mr. Hall to the extent of expressing a view that flame safety lamps should be installed for inspection purposes in conjunction with electric cap lamps. The flame safety lamps should be magnetically locked.

Mr. Bright said the rock dusting committee showed no discrimination in its recommendations as between so-called non-gassy mines and gassy mines. He believes this would be a good suggestion to apply to the case of electric lamps vs. closed lamps. As the flame safety lamp will not detect methane in quantities much less than 1 per cent many men feel safe in this regard but the chemist always finds it. Mr. Fear said it costs the mine owner nothing to install electric cap lamps.

The program closed with the reading of the following resolution:

Whereas, the U. S. Bureau of Mines has established stationary and traveling centers of instruction in safety, mine rescue, first aid and mine recovery; has given valuable aid to the industry in making mines safe; has assisted helpfully in mine rescue work, and has accumulated stores of information relative to safe conduct of mines, be it

Resolved, that the Coal Mining Institute of America emphasize to the new director of the U. S. Bureau of Mines, Mr. Scott Turner, Mr. Hoover and others the importance of this work, which has proved so helpful to the industry, and urges that this work shall in no way be restricted on account of other activities.

## Institute Sees Explosions in Bruceton Experimental Mine

ONE OF THE TESTS being made as a part of the regular investigations of the U. S. Bureau of Mines was staged on Friday morning, Dec. 11, for the edification of the members of the Coal Mining Institute of America, most of whom journeyed in automobiles to the experimental mine at Bruceton, Pa., where the tests were made.

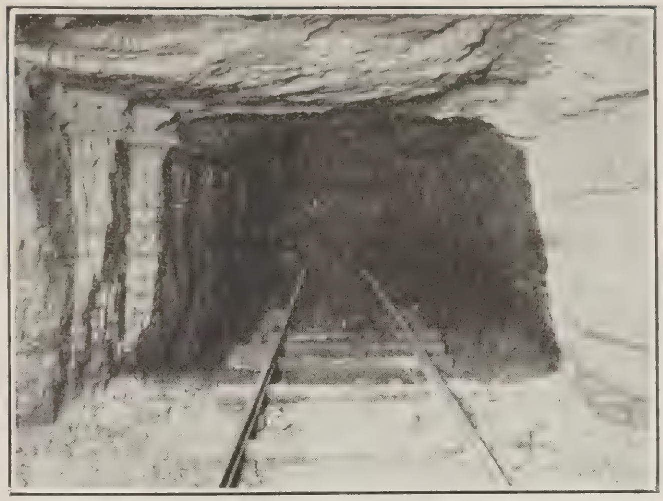
In the end of the right-hand main entry a large number of gas jets had been installed on the floor, and arrangements were made to shut in these jets behind a paper diaphragm located at a point 50 ft. from the face. The cross-section of the entry measures 6x10 ft. approximately, so it is estimated that back of the diaphragm was about 3,000 cu.ft. of air. Enough gas was released to bring the gas content up to 10 per cent. The gas used was the natural gas which is conveyed to Bruceton by pipes.

In front of the diaphragm were shelves which extended 475 ft. outby and were covered with a mixture of 65 per cent shale dust and 35 per cent subbituminous coal from Hanna, Wyo., both reduced to powder of standard fineness. Similar charges of a like mixture of Hanna coal dust and shale dust were placed in the crosscut near the diaphragm and in the heading parallel to the right-hand entry which also comes to the surface.

The dust-charged shelving in this case extended to a point 25 ft. further from the surface than the shelving in the right-hand main entry. The gas behind the diaphragm was set on fire by a black powder igniter. When the gas was exploded the crowd alongside the portals was immensely impressed by the terrific rush of wind laden with dust which swept out of the mine and licked up everything in its path. Some of the visitors who were located alongside the right-hand main entry, which was the one in which the gas was released, declare that they saw flame in the whirlwind and the Bureau of Mines officials announced later that evidence of the passage of flame beyond the dust-charged shelving was obtained by observations made in the instrument station on the hill.

At the close of the explosion four men wearing four different types of oxygen-breathing apparatus and four men wearing all-service gas masks entered the mine to take samples. Later these samples were tested with the Orsat apparatus and no carbon monoxide was found, but it was stated that the Orsat apparatus gives unsatisfactory indications of this gas, and being correct within one- or two-tenths per cent. Such a concentration would be sufficient to paralyze a man in an hour or so. However, the canary and the hoolamite indicator both showed that carbon monoxide, if present, was in low concentrations.

Rock Dusted Entry in Experimental Mine



Where Rock Dust Zone Ends in Experimental Mine

Prior to this important test the Bureau of Mines arranged to precipitate 30 lb. of Pittsburgh-bed coal dust in the main entry of the mine near the portal in such a manner that it would be carried by the outgoing air to an electric arc and later, in another experiment, to an open flame. In each case there was a general and sudden inflammation which extended to the surface. Some stationed themselves inside the mine behind the curtain of coal dust, and the view they obtained of the rapid combustion was one never to be forgotten. The flame filled the whole cross-section of the entry. There was, however, no violence.

Rock-dust barriers of proved ability to stop mine explosions were exhibited on the surface and tripped by the pulling of wires or the operation of vanes. Later, a steel tube, 12 in. in diameter and over 100 ft. long was filled with natural gas and air, the gas concentration being 7 per cent. Flame was applied at one end and in a slow, quiet way it propagated the full length of the tube, the Institute members in stooping posture watching its progress. When the flame reached the far end of the tube, the gas exploded much to the surprise and consternation of the visitors who were not in any position to make a quick run to safety should such a run be necessary. When an inflammation starts at the open end of a gallery it travels slowly and builds up but little pressure. When it starts at the closed end of a pipe, entry or chamber, however, as did the big explosion in the mine, which was staged later and has been already described, the effect is far more violent.

Demonstration in a glass gallery of the explosion of coal dust by an open light followed after lunch. A shot of permissible was then made into a gallery designed and erected for the testing of permissibles and another also against a ballistic cannon which measured the force the explosion generated. Finally a shot of black powder in the gallery with 50 lb. of coal dust present brought the usual violent explosion with flame spouting from the end of the gallery and from the many port holes. A brilliant exhibition was the explosion of a steel keg of black powder by contact with a charged electric wire. Later a trip was made through the experimental mine to see what the results were.

# Coal Problems Get Much Attention at Washington Convention of American Mining Congress

**By E. W. Davidson**
Managing Editor of *Coal Age*
New York City

LEGISLATIVE and economic coal problems of the day absorbed a good deal of the time of the twenty-eighth annual convention of the American Mining Congress at Washington, D. C., Dec. 9, 10 and 11. Attendance, never large at this mid-winter "policy meeting," was not easy to maintain at all the sessions, but those devoted to coal held much of interest to the whole industry.

The convention gave Secretary Herbert Hoover of the Department of Commerce opportunity in a banquet address to impress his hearers with his desire to make the government a friend rather than a suspicious guard of mining industries and provided a propitious moment for him to infer his opposition to radical coal legislation by declaring, "You can't catch an economic law with a policeman."

It gave Secretary of Labor James J. Davis a chance to propose that the coal industry try curing some of its own ills by creating a fact finding commission of its own to regulate the industry from the *inside.* He suggested a coal dictator of the Will H. Hays variety and took a rap at railroads for contributing deeply to the grief of coal by buying fuel off their own lines and at less-than-cost prices.

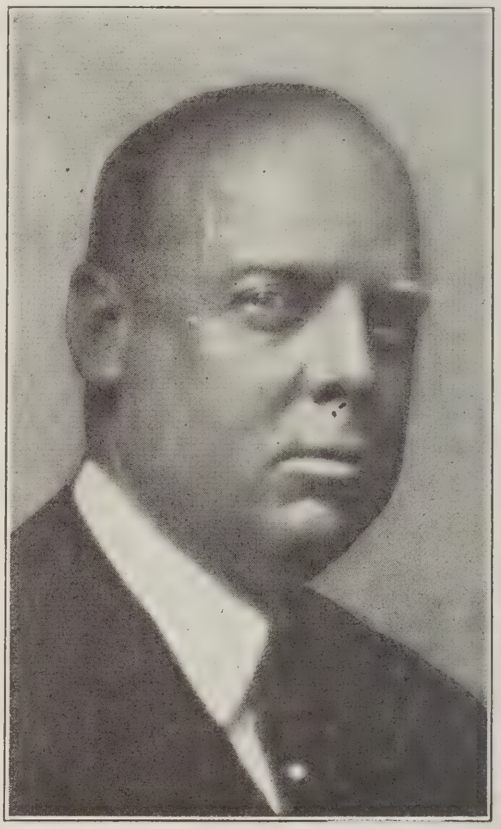
There was opportunity also for Samuel D. Warriner, chairman of the Anthracite Operators' Conference, to make a strong re-setup of the anthracite operators' case and for several other coal men to speak some truths about coal.

The meeting elected D. B. Wentz, a well-known coal operator, president of the congress for the forthcoming year, the manufacturers' division began its plans for a great coal show and technical convention next May, the standardization work of the congress moved forward a notch, government and business was discussed and nearly every man in attendance visited the White House to receive President Calvin Coolidge's how-do-hurry-along handshake. However, it was a leisurely convention.

"I am surprised that the expression 'too many miners' recurs so often in present-day discussions of what ails the coal industry," said Josiah Keeley, president of the Cabin Creek Consolidated Coal Co., the first of several speakers who reported on mining conditions in various parts of the country at the opening session Wednesday under the chairmanship of vice-president Wentz. "The real trouble is only 'too many mines.' Why, in West Virginia today I don't know a single mine that has enough men."

He appealed for some remedy for overdevelopment—probably greater consolidations—adding that he did not believe West Virginia non-union operators were fooling themselves into thinking the present labor condition there would continue indefinitely. Even though some of the men working non-union there right now are making more than they have made since 1915, still they have been fooled so often by union leaders and operators alike in past years that now they have none too much confidence in either.

Duncan Kennedy, secretary of the Kanawha Coal Operators' Association, was inclined to discount Mr. Keeley's thought that non-unionism is unstable in West Virginia. He agrees, however, that "the labor policy of the state is charged with dynamite." He thinks the union will never again rise in Kanawha, the arrogance of local and district leaders having killed it. The few union camps in the region are maintained, he said, by the United Mine Workers' payroll. The men in the mines generally are satisfied with the treatment operators give them and are working loyally.



**Col. D. B. Wentz**

Elected president of the American Mining Congress for the coming year. He served as vice-president of the congress during the past year. Colonel Wentz is head of the Stonega Coal & Coke Co. and associated interests.

The venture in 1917 wages within union territory now being made by the Pittsburgh Coal Co., the Rochester & Pittsburgh Coal Co. and the Buffalo & Susquehanna Coal & Coke Co. was mentioned by Mr. Wentz in introducing A. P. Cameron, vice-president and general manager of the Westmoreland Coal Co., long a non-union company. Mr. Cameron said his organization had spent "a mint of money" in 1910 to show union men that they could not run the company's property and that if all operators would do that, and then treat men right, the great labor difficulties handicapping the industry would be removed.

"There's a long hard fight ahead of the Pittsburgh Coal Co.," he said, "but I believe the company means business and will stick to its less-than-Jacksonville-wages program. The situation in western Pennsylvania is a little dark just now but is quite satisfactory for all that."

President Coolidge, unable to attend, sent greetings to the Congress in a letter in which he hinted at no government control or operation of anything, but said rather that "the eventual solution of the large problems of industry will be solved through the earnest, united and unselfish labors of men comprising such organizations as yours. So far as lies within its power the executive arm of the government is ready and willing to lend its aid in this work."

The Wednesday afternoon session was given over to a discussion of mine taxation but no emphasis was put upon coal tax problems. Paul Armitage, chairman of the general tax committee of the congress, presided. The speakers were Joe J. Manlove, congressman from a Missouri district, and George R. Holmes, of New York.

### "Strike Creates No Crisis"

Although Secretary Herbert Hoover was the principal speaker at the Wednesday evening banquet, Harry N. Taylor, head of the United States Distributing Corporation of New York won the most space in the next morning's newspapers by declaring that "there is no crisis created by the anthracite strike." He said 90 per cent of the people already burn soft coal and the rest can get used to it soon. Anthracite producers are losing some domestic business permanently, he declared, but their principal loss in this strike is steam business which covers 50 per cent of the anthracite produced. This they may never recover.

If the strike is not settled by Jan. 1 it might as well run until next summer so far as the people of the country are concerned, said Mr. Taylor. He hopes nothing will interfere with the anthracite operators carrying the fight to a finish for a settlement that is final and right.

Senator Oddie, chairman of the Senate committee on mines and mining and who has some coal men disturbed by his new coal bill, paid tribute to Secretary Hoover as the most favorably known engineer in all the world. Because the Bureau of Mines is now under Mr. Hoover's direction, he prophesied greater co-operation between the department and Congress on mining legislation than Washington has ever seen.

"No man with a double chin ever leads a double life," neatly epigrammed former Senator C. S. Thomas of Colorado, the nimble-witted banquet toastmaster, as he introduced Secretary Hoover. He was not defending the eminent Secretary's morals, which do not need defence, but was merely explaining why Mr. Hoover, being only one man and with but twenty-four hours a day at his disposal, has not accomplished everything everybody expects of him.

Mr. Hoover, in guarded phrases treated only indefinitely the big problem of possible legislation looking toward outside interference in the mining industries of the land. He did make it plain, however, that he favors no legislative efforts calculated to guide economic law in its operation upon industry. "You can't catch an economic law with a policeman," said he, and his attentive audience put its own obvious interpretation upon his words.

He pointed out that the mining industry is "older than the tablets handed down on the Mount" and that in all the ages it has conformed to the immutable economic laws which still delimit its functioning. Therefore, there is no need now for government correction. He holds that government can serve the mining industry technically but not by economic meddling "unless the ten commandments can be changed." However, he urged the members of the Congress to "keep up your interest in legislation. We are going to need you all."

The organic law creating the Department of Commerce provides, he said, that the Secretary shall "promote and foster" industry. This puzzles him, for anybody in Washington who sets out to "foster" any industry is under grave suspicion to say the least. But he does understand the soundness of promoting industry and that end will be served, he thinks, by the recent transfer of the Bureau of Mines from the Department of the Interior to his own department. An economic division, widening the service of the department to industry, will be created as from Dec. 15, he announced.

Mr. Hoover took occasion to pay high tribute to the type of men that have been in the service of the Bureau of Mines in the past, most of whom have made heavy financial sacrifices to remain in government employ. He expressed regret at the departure of Director H. Foster Bain but assured the Mining Congress that in Scott Turner the Bureau leadership will be of the ablest. Mr. Turner, he said, is giving up business connections that pay him five times the salary he will receive from the government.

The big coal session of the convention was that of Thursday morning when James J. Davis, Secretary of Labor, proposed an internal fact finding coal commission and declared railroads could correct many coal ills by better buying. James Murdock, former Minister of Labor in Canada, described the operation of the compulsory arbitration law of Canada, and S. D. Warriner, chairman of the Anthracite Operators' Conference, made a clear-cut statement of the operators' position in the present strike printed on another page of this issue.

Secretary Davis, approaching his proposals for the correction of coal's troubles "from within," said that great as is the necessity for curing labor troubles the greater need is to cure other economic disturbances inside the industry. Although in 23 years, from 1900 to 1922, a total of 207,000,000 man-days were lost in strikes in the American coal industry that accounts for but 14 per cent of all lost time. No markets, car shortage and mine disability roll up the far greater total.

### Industry Must Protect Itself

The problems of intermittency of operation, irregular employment, unprofitable production for owners and unsatisfactory wages for miners caused by "too many mines and too many miners," must be solved. He knows of no legal restriction that can be put upon overdevelopment or overmanning of the industry. Therefore, he thinks the industry itself must prevent them.

"It would appear," said he, "that within the industry real progress might follow the adoption of a scientifically developed plan for voluntary reduction in the number of high-cost mines, limitation of the new mines to be opened, an arrangement for absorbing into other industries the surplus mining labor, and a policy of discouraging the employment of casual mine workers in the busy seasons by confining such work to the steady employees of going concerns.

"For this very difficult undertaking I believe that a fact finding commission should be established within the industry itself to be composed of equal representation of miners and operators with a disinterested chairman. Such a commission, composed of leading minds from operators and workers, and animated by a spirit of co-operation and mutual trust, would be at once far more expert and better informed than any commission working from the outside. An inside body of this nature would possess a practical knowledge of every phase of the mining industry, from the mining to the marketing of coal, such as no other body of outside experts could hope to possess. If established by the industry itself, such an inside commission would instantly command the confidence of the public, as an expression of good faith on the part of the industry to begin with. I earnestly urge both operators and miners to consider seriously some such means—the only means available, as I see it—for overcoming the first evil of over-development.

"Among other factors necessary to stability of operation and employment I regard as important a broadening of railroad policy in the purchase of fuel. If each railroad bought its coal of mines along its own lines, and paid a price that would insure a reasonable profit, and bought at such season as to insure more regular operation, another great evil of the coal industry would disappear. As now, some railroads bargain for their coal on the lowest price offered, by mines often remote from their systems. The consequence is that operators on their own lines frequently furnish railroad fuel at a loss. The communities about these mines are impoverished, general freight and passenger business is curtailed by this custom of buying coal mined in fields away from their own roads and the railroad itself is thus the sufferer by its own fueling policy. It would seem to me good business for every road, where possible, to buy its coal from mines on its own lines and at a fair price to all concerned."

The Secretary of Labor declared for voluntary arbitration. Compulsory arbitration, however, having failed in Australia, Canada and in Kansas, is hopeless, he thinks.

As a final word to coal men, he urged them to choose a "national figure," a man skilled in law and business administration, to apply whatever corrective measures may be proposed by the suggested fact-finding commission.

Canadian compulsory arbitration is not the complete failure it is so often pictured. Mr. Murdock told the convention. The industrial disputes act prohibits strikes or lockouts before and during conciliation proceedings. Since 1907, he said, out of 638 applications for arbitration boards 450 have been granted and the remainder of the cases settled by the labor department. In only 38 cases did the machinery fail to prevent strikes or lockouts.

Some progress toward getting mining standards approved by the American Engineering Standards Committee was reported by Col. W. R. Roberts, chairman of the congress standardization division on Thursday afternoon. The congress report on mine ventilation was adopted that very day in New York by the A.E.S.C. and was said to have been sent out for a formal letter ballot.

However, there had been such difficulty getting the ventilation code adopted that Colonel Roberts was moved to charge the secretary of the A.E.S.C. with "irregularity" and violation of the rules of his own organization.

The Colonel said the ventilation report had been unanimously adopted by a section of the A.E.S.C. correlating committee and, therefore, should have received the formal approval of the correlating committee Nov. 11 in New York. It did not, however, and the correlating committee voted to send it back to the sectional committee for alteration on the ground that the Bureau of Mines, one of the original sponsors, had withdrawn its approval.

### Colonel Roberts Does Battle

It appears that one Bureau engineer, who represented the Bureau officially, had approved but that a superior objected. Colonel Roberts said that on Nov. 11 he notified the correlating committee that if it insisted upon referring the report back for change he would appeal to the whole American Engineering Standards Committee the next day. This he did and won a decision to mail the report out for a letter ballot.

He said, however, that the secretary did not mail it and that no action took place until the one in New York Dec. 10 which assured the adoption of the committee report as a tentative American standard.

Colonel Roberts reported that the congress' committee

American Mining Congress Assembled with President Coolidge reports on drainage and underground transportation are getting attention from the sectional reviewing committees of the A.E.S.C. and should soon be acted upon after more than two years of delay. This delay, he said, was largely unavoidable because of the A.E.S.C. geographical and industrial distribution of the A.E.S.C. committee personnel. However, future action ought to be swifter, he thinks. Three other reports of congress main committees are awaiting review by the A.E.S.C. —reports on outside coal handling equipment, power equipment and power transmission.

The remaining two main coal mining branch committees of the congress—those on mine timbering and on underground mining and loading machines—did not finish reports in 1924. However, several subcommittee reports on parts of the mine timbering committee's work were made at the convention. George M. Hunt read a progress report on timber preservation, B. C. Collier, former subcommittee chairman, read one on the use of "Concrete and Gunite for Underground Construction" and Newell G. Alford, the new chairman, read an important report on an investigation of "Concrete for Shaft Linings."

A final report on mine drainage embodying several previous progress reports was made during the convention as was a final report on mine tracks and signals by a subcommittee of the underground transportation committee.

During the standardization meetings an address was made by R. M. Hudson, chief of the division of simplified practice of the U. S. Department of Commerce, and a progress report by the standardization division for the metal mining branch of the congress prepared for the chairman, C. A. Mitke, was read by William A. Rowe, chief engineer, American Blower Co., Detroit, Mich.

The coal industry need no longer feel that it is going to be hounded under the anti-trust law, two speakers assured the convention at the Friday morning session. One was William E. Humphrey, of the Federal Trade Commission, who described the great change that has been made in the highly doubtful practices of that commission, and the other was Gilbert H. Montague, a New York lawyer, who urged the mining industry to obtain for itself at once the same exemption from the terms of the Sherman law that railroads, telephone companies, farmers and labor unions have long enjoyed.

Mr. Humphrey was wholehearted in his condemnation of past practices of the Federal Trade Commission. But he said two great changes in method have been in effect since last March which make the commission assist business instead of harassing it. In past years the commission, he said, has sent out investigators to work on every complaint and their reports have been made public without even hearing the respondent. In 50 per cent of these cases, after months and even years have elapsed, during which the publicity may have ruined the business under investigation, the charge has fallen flat. Now the commission uses no such public methods.

The other important change is the use of the "stipulation" system. When an investigator's report makes a prima facie case there is a hearing before a board of review. The case may be dismissed as unjustified. But if the complaint of unfair business practice proves justified the commission is willing to accept a signed stipulation from the respondent in which he agrees never to repeat the offence. Often he has broken the law without knowing it, a condition that should cause no surprise in view of the differences of Sherman law interpretation made by various agencies even including the Supreme Court itself. Only in flagrant cases of willful violation does the commission carry the matter to court.

This plan has been assailed by "the pink fringe" of both republican and democratic parties and by out-and-out radicals, but by no others, Mr. Humphrey said. It is a successful and just plan and usually produces the desired result, often in cases where it would be impossible to gather sufficient evidence to win a prosecution suit. It is square to business and it saves at least $500,000 a year to the government in court costs, he said. He declared the commission is now correcting an average of one case a day, whereas it formerly averaged only one a week. No longer, he said, will cases hang fire for years. They are handled expeditiously.

"The Federal Trade Commission now believes that business men in this country want to be honest," said Mr. Humphrey. "It no longer holds that business success and dishonesty are synonymous."

**on the White House Lawn, Washington, D. C., Wednesday, Dec. 10**

**Harry N. Taylor**

President of the United States Distributing Corp., who declared at the American Mining Congress meeting that "there is no crisis created by the anthracite strike."

Mr. Montague, following Mr. Humphrey, declared the change in the commission's methods has done more to bring order to American business than any other one thing since the passage of the Sherman act in 1890. Further, he said, there never has been a time in the last 35 years when business got such sympathetic decisions from courts and commissions as it is getting now. There is no longer any reason why coal operators should fear to deal collectively with their labor and that trade associations need not fear to function.

Mining is the greatest waster of all industries, he declared, largely because the units in it have not been able to function freely and legitimately under the various interpretations that have been put upon the anti-trust statutes. Now, however, sound consolidations of mining properties to reduce overhead and improve production are possible with impunity and trade associations can safely exchange information that will reduce the wastes of distribution.

Sidney J. Jennings, president of the American Smelting & Refining Co. of New York, after defining a "fair wage" as one that would permit a man to "feed, clothe and house himself and have enough leisure to recuperate his strength and increase his ability to earn" declared that experience has proved that "high wages coupled with high efficiency produces most profits" for both capital and labor.

Said he: "It is the manifest interest of society to see that no nationwide organization of workers arises dominated by arrogant and self seeking men, more intent on maintaining their power and its rewards than in serving labor and society as a whole. One of the most evident lessons of history is that human beings deteriorate in character and judgment when too much power is given them. Leaders of labor organizations are no exception to this rule, and society is finding that national organizations of all the workers in one industry irrespective of their trade, become tyrants.

"No absentee, autocratic labor leader will consider fairly the problems of the different conditions under which mining is carried out in various differing regions. He is too intent on making himself appear essential in the controversy to take into proper consideration the needs of the workers, and the rights of the public. A most striking illustration of this is the present coal strike. No one man can fairly represent the needs of the workers in both the bituminous and the anthracite coal mines. Inevitably he will use either one set of workers or the other as pawns in the struggle to keep himself in power.

"Why should a miner in Wyoming, who is perfectly contented with his wages and the conditions under which he works, be dependent for his right to work upon the policy of a man living in Indiana, who decides that miners working in Pennslyvania should strike in order to show that he is a power in the land? More intimate contact with the problem of each region is needed so that proper and fair agreements can be arrived at, that will allow the coal mining industry to continue its work of supplying fuel to the nation at a cheaper rate than any other nation in the world is supplied and at the same time pay its employees a higher rates of wages than is received by any other miners in the world."

Winding up the last general session, the Congress passed resolutions favoring impartial arbitration, approving the recent transfer of the Bureau of Mines to the Department of Commerce, commending Secretary Hoover for choosing the type of men he has selected to administer the Bureau's work, and endorsing the national safety competition now being conducted by the Bureau. There were other resolutions of interest only to metal mining men.

The arbitration resolution follows:

WHEREAS, The President of the United States in his message to the Congress has specifically endorsed the settlement of industrial controversies by impartial arbitration, and

WHEREAS, In order to terminate the present intolerable situation in the anthracite region, the operators have offered to submit all matters in controversy, without reservation, to arbitration, therefore,

BE IT RESOLVED, That the American Mining Congress places itself on record in support of the President's suggestions and endorses the principle of settlement of industrial controversies by arbitration.

The following officers of the congress were elected Friday:

President, Col. Daniel B. Wentz, Stonega Coal & Coke Co., Philadelphia, Pa.

Vice-presidents, Robert E. Tally, United Verde Copper Co., Jerome, Ariz.; E. L. Doheny, Los Angeles, Calif., and W. H. Lindsey, Napier Iron Works, Nashville, Tenn.

Secretary, J. F. Callbreath, Washington, D. C.

New member of the board of directors, George B. Harrington, Chicago, Wilmington & Franklin Coal Co., Chicago, Ill.

The last session connected with the congress was the luncheon of the manufacturers' division Friday noon where preliminary plans were made for the coal convention and machinery show of the congress next May. Bids are in from two or three cities for the convention. A committee composed of J. C. Wilson, Ohio Brass Co., L. W. Shugg, General Electric Co., and E. C. Porter, convention manager of the congress, was appointed to canvas the situation and make a final decision within two or three weeks.

A coal mining program to be arranged by the coal operating men of the country so as to satisfy their needs and theirs alone will be worked out. Mr. Wilson, who is chairman of the manufacturers' division, Ralph Becker, Keystone Consolidated Publishing Co. and Mr. Porter will begin at once to create a program committee that will carry out the plan. They will travel the coal regions soon so as to find out just what mining men want to have covered in the technical sessions next May.

As a tribute to Secretary Callbreath, who has been in the service of the congress ever since it was created—has been its mainspring, in fact—the manufacturers' division expects to have an oil painting of the Secretary made and hung in congress headquarters in Washington.

# The Anthracite Operators' Case Today*

By Samuel D. Warriner

Chairman, Anthracite Operators' Conference,
Philadelphia, Pa.

THE STATEMENT of President Coolidge that "perennial conflicts in the coal industry approached to a national economic failure," challenges the best thought of the American Mining Congress. There is no doubt that the disease to which the President directs attention exists. Its cure, however, may be delayed by the application of too many nostrums.

A public letter given out in the last few days by a distinguished group of nationally known engineers and economists, states that "no agreement will insure continuity of production and distribution which fails to provide a continuing joint agency that will concern itself with the constructive consideration of the underlying economic and technical facts" of the industry and that "joint effort on the part of management and workers in improving methods of production and distribution can increase wages and lift and stabilize earnings at the same time that they lower the price to the consumer."

**GOVERNOR PINCHOT'S POT OF GOLD**

**"THERE SHOULD never have been any attempt to impose the authority of government intervention upon an industry when the owners have consistently been willing to submit their case to impartial arbitration without reservation, and no judge, self-appointed or otherwise, should presume to render decision without at least hearing both sides of the case.**

**"From a practical standpoint, the governor of Pennsylvania might as well have divided a pot of gold at the end of a rainbow, as to expect his chimerical proposition would promote the interests of the industry and its workers and at the same time satisfy the reasonable expectations of the consuming public."**

The position of the operators, as stated to the joint conference at Atlantic City was and has since been in hearty accord with this expression of principle. Nevertheless, to date there has been an utter failure of negotiation and much misunderstanding on the part of the public as to underlying causes of such failure.

The basis of anthracite labor relations, since 1902, has been the award of the Roosevelt Commission. It preserved peace in the industry for 20 years. It provided a system of industrial negotiation and co-operation far in advance of its time. It endorsed in principle the open shop, but at the same time afforded full opportunity to union leadership. That the union progressed under its operation is a matter of history. While the theory of group representation in matters of joint negotiation was encouraged, it afforded every facility for the individual to express his grievance and to have his case determined by the joint board of conciliation, which was created by the award of the commission. The compensation of employees, under the sliding scale of wages, was determined to a certain extent by the economics of the industry.

The breakdown of this system came with startling suddenness in 1922, when John L. Lewis announced before negotiations were even begun that regardless of past practice, a strike would be called on April 1 if by that time a new contract had not been signed.

The objection of the Roosevelt Commission to the recognition of the United Mine Workers was that it was a bituminous organization. Before any recognition was granted by the operators, union leaders gave definite assurance that their anthracite policy would be autonomous.

Nevertheless, national union strategy influenced by bituminous policies has been substituted for the "men and management" plan of industrial government established by the Roosevelt Commission. This, together with the interjection of the strike as a weapon to be used first instead of last has produced industrial chaos. Since April, 1922, until the present time, a period of 44 months, practically 11 months or 25 per cent of the time has been spent in useless contention with appalling economic loss.

If you will study the history of the controversies of the last three years, you will agree with me that the basic issue has been the question of arbitration. The operators have consistently urged it; the union has consistently opposed it. No one believes arbitration to be a "cure-all," but the operators believe that, given full opportunity for negotiation, mediation, and conciliation, there still must be an agreement to arbitrate if strikes are to be avoided, and continuous operation of the mines, with dependable supply of fuel for the public, is to be assured. The influence of an arbitration board in the background is a powerful incentive to successful negotiation.

### Threatened Regulation Detrimental

The spectre of government intervention, regulation and control, as well as the opportunities afforded for possible governmental operation or ownership, have often interfered with economic settlement of existing controversies.

The present attempted state intervention ignores commercial factors as well as all legal restrictions imposed by federal statutes. It assumes that prices can be maintained by agreement, and, on the basis of this assumption, that present wages can be maintained indefinitely, and surplus profits, if any exist, turned over from time to time by a commission to the miners in increased wages. No more impracticable theory of commercial operation can be imagined even by the most nimble mind.

No program by which prices can be maintained, or costs of operation other than labor controlled, is suggested. The fact that anthracite mine workers are receiving 10 per cent more than the highest war wages, and are already being paid higher than employees in other basic industries, is ignored. No banker or investor would loan money to such an enterprise. The acceptance of such a proposition would spell calamity to the industry. Yet the very proposal of such a plan encourages unreasoning expectation and impedes judgment.

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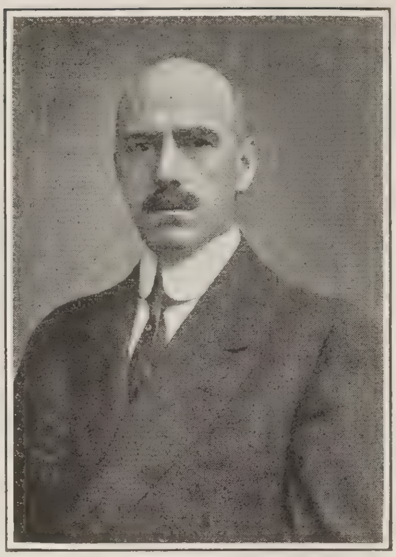
*Address to the American Mining Congress Convention, Hotel Willard, Washington, D. C., Dec. 10, 1925.



Samuel D. Warriner

There should never have been any attempt to impose the authority of government intervention upon an industry when the owners have consistently been willing to submit their case to impartial arbitration without reservation, and no judge, self-appointed or otherwise, should presume to render decision without at least hearing both sides of the case.

### Dividing the Pot of Gold

From a practical standpoint the governor of Pennsylvania might as well have divided a pot of gold at the end of a rainbow, as to expect that his chimerical proposition would promote the interests of the industry and its workers and at the same time satisfy the reasonable and legitimate expectations of the anthracite consuming public.

At the opening of Congress it is pertinent to consider the possibilities of federal legislation. Unless it can be proven that anthracite is an essential and can command at all times a monopoly price, there is no warrant that the treatment accorded it should differ from the treatment accorded other mining and industrial enterprises. Any control of price inevitably presumes that whatever price may be set can be obtained. Control of methods of operation and distribution must conform to such regulations as are imposed upon other products of industry.

### Should Support Fact-Finding

The President should be supported in his recommendation that through some government authority essential facts shall be currently compiled. This eliminates at least one subject of controversy.

There should also be agencies of mediation and conciliation to promote voluntary arbitration. This is a manifestly sensible treatment, tending to make the strike, which is the cause of our troubles, more remote. The leaders of the labor movement would do well to follow the advice of Mr. Green, the president of the American Federation of Labor, who points out that labor unions have passed the militant stage, and must enter the stage of business co-operation if they are to retain the place to which they are entitled in our scheme of American industry.

Periodic strikes and suspensions of operation, whether caused by owner or employee, cannot be tolerated in one of the most important of our national industries. The common sense of the American people should compel peaceful adjudication of disputes by the rules of reason and logic, rather than by a resort to industrial warfare.

As President Coolidge says in his message to Congress, "Those who ask the protection of civilization should be ready to use the methods of civilization." The anthracite operators believe that out of this chaos will come an agreement embodying the "men and management" idea of industrial co-operation, with assured methods of adjusting disputes, and providing satisfying service to the American public.

**Good Roads Aid Development in Kentucky Coal Fields**

This road in Knox County, Ky., is constructed of concrete with an asphalt surface and links the towns of Pineville and Barboursville. These coal mining centers, formerly accessible only by train, are now also served by buses from neighboring towns.

# Book Reviews

## How It Should Be Said

The public is just beginning to value niceties of speech. Nothing more clearly brings home that fact than learning that the Westinghouse Electric & Manufacturing Co. has a literary critic and that he has published a book, "Principles of Business Writing," and that the publisher is none other than the Westinghouse Technical Night School Press, East Pittsburgh, Pa. The name of the author-critic is T. H. Bailey Whipple.

In the part of his book devoted to "Words and Phrases Often Misunderstood" he clears up for the reader many a moot point. Of course, we don't always agree with him. Stylists very seldom do agree. Language is fluid and changing. How much modern change we shall refuse to accept and how much accept no one knows. Nevertheless it is possible to find amazingly helpful a book with which you do not always find yourself wholly in agreement, and if you take Mr. Whipple as guide you will go a long way toward bettering your style.

### Grateful for Suggestions

We would not say, with Mr. Whipple, "has effected great advancement in the tone and character, etc." but rather "has bettered the tone and strengthened the character, etc." We would not refer to "a small amount of coal" but rather to "a small quantity" of that material. These, however, are details. We are grateful to Mr. Whipple for not a few happy suggestions, and have listed for our personal observance quite a few reforms that his apt advice has suggested. (Yes, he would approve that use of "apt.")

Slovenly English in letters, in reports, even in articles, often interferes with clarity. As one has said: "Words are like sunbeams, the more we condense them the deeper they burn." And we want our words to burn, do we not? We have a message to be delivered and we want it presented gracefully, courteously, correctly and not smothered in useless verbiage. To this end Mr. Whipple's book is dedicated. It contains 132 pp. measures 6 x 9½ in. and sells for $2. It has a chapter by G. M. Wood, of the U. S. Geological Survey, a stylist than whom there is perhaps none better.

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## The Case of Bituminous Coal

With a series of lively texts from Gilbert and Sullivan operas and the "Bab Ballads," Walton H. Hamilton and Helen R. Wright, for the Institute of Economics, established in Washington, have produced a gloomy jeremiad that can be duplicated only by the choice of well-chosen parts of the Major and Minor Prophets.

To these investigators, and they appear to be well entitled to that name, for they have made a careful inquiry and seem to have their facts, if not all their deductions, straight, the coal industry appears to be getting more deeply involved every year. The promise of deflation made by the self-appointed physicians of the coal industry is not being kept, and the authors believe that just at present, despite depression in prices, inflation is rampant, every operator striving for increased production so as to lower overhead. To this tendency, the authors can see no end. The industry is sick, and its debility daily increases. The leucocytes by which its life blood should become purified are unable to overcome the germs that menace its healthy existence.

### The "Unhappy Complex"

The authors seem not to be unfavorable to the industry. In fact there are many operators who find themselves with the same unhappy complex as Hamilton and Wright. Like them they believe the skies will never clear. To a certain extent that is right. They never do and never can clear up entirely in matters mundane, but somehow the more cheerful of us at least can smile and go along with our work.

Pointing out that the demand for coal cannot be expanded except with the increase in population and general industry the authors say: "The hope for an increased demand for coal, if hope there can be, lies 'in the discovery of new uses for it.' But the only new use which a diligent search through trade periodicals reveals is 'to cool houses' in summer." That is no small use nor is it so greatly remote as this short reference would lead us to believe. Other uses that have been suggested are: larger domestic use by farmers who heat now only part of their houses, earlier and later operation of domestice fires, better and more general illumination and irrigation of farms by pumps in dry seasons. These are only indications of new uses. There will be many others that are not as yet knowable.

One should be a "bull" on the United States and industry without knowing just why. We are not troubling to name the statesman who in 1940 will meet the problems of that year and in some degree solve them, but we feel confident that he will be there. We are not naming all the new uses for coal there will be in 1940 or 1927 even, but we are quite well satisfied they are on their way, and *Coal Age* here and elsewhere has indicated some of them, only feebly perhaps.

### Will Open Other Inquiries

The book is so cheerless that it leaves one helpless and dazed but we are confident, nevertheless, that it will be made the first of a long series of jeremiads on the other industries. Overhead, overdevelopment, increased technologic efficiency, lack of vision, uncertain accounting, inability to weigh operating factors are difficulties in them all. In every direction of industrial inquiry the book on coal problems is almost always the first of such books to be written. The others follow in time. The reason is not difficult to find: Coal's illnesses are distressing for coal's services are so great. Consequently coal gets the most careful investigation and gets it first. The others follow. It is found that they are ailing too, though formerly no one cared, because either their immediate service was not needed or their abstention from work inconvenienced only a few members of the family. The science of industrial pathology starts with coal. When the subject is studied in that industry inquiries in others are soon added, the study being made in them not so much of dire necessity as because of a lesser advantage or out of mere curiosity.

The book contains 307 pages measuring 4⅞ x 7¾ in. The publisher is The Macmillan Co. of New York City, and the price is $2.50.

# Union Pacific Coal Co.'s Code of Standards—I

STANDARDIZATION of method and equipment is carried to a high point by the Union Pacific Coal Co. at its operations in Wyoming. A new code of standards has been put into effect calculated to gain for the company all the benefits that are to be had from uniformity.

On these pages *Coal Age* begins the publication of the Union Pacific code and will, in future issues, publish the balance of it in a form that will permit of easy filing. This is done with the co-operation of President Eugene McAuliffe of the company, who practices helpfulness to the industry at every opportunity.

The standards as laid down in this code were made, of course, to cover the Union Pacific's Wyoming mines and would require modifications for use anywhere else. It was written after an exhaustive study had been made by the company's mining engineer after conferring widely with the operating and engineering staffs of many coal producing companies and after many mine inspections.

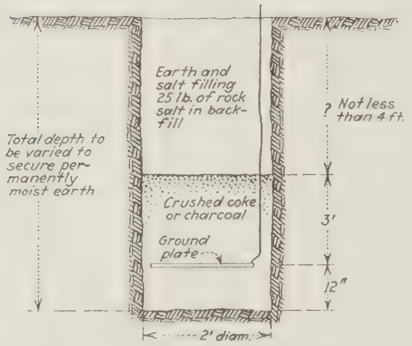

Earth and salt filling 25 lb. of rock salt in back-fill
Not less than 4 ft.
Total depth to be varied to secure permanently moist earth
Crushed coke or charcoal
Ground plate
3'
12"
2' diam.

**Fig. 1—Good Grounds Are Made**

This is the method used to obtain low-resistant ground connections for lightning arresters and electric machinery. Unless special means are used good grounds cannot be obtained in dry localities. Electric protective equipment is valueless without an efficient ground contact.

## Code of Standards

The mine foreman, who is held responsible under the law for the safety and general condition, of the mine and by the management for its production and costs, is recognized as the man in authority in the mine.

Mine electricians are expected to follow the orders of the mine foreman in performing routine work, repairs and the installation of such extensions as may be required in the regular operation of the mine. They will also receive orders from the local chief electrician as to general methods and special work when necessary.

The extensive use of electricity in our mines raises many problems that require a special training that a mine foreman should not be called upon to acquire.

The mine electrician should be impressed with the necessity of observing improper conditions and reporting them to the proper authorities with suggestions covering their remedy.

The following rules and regulations are to be considered as standards for the use of electricity both underground and on the surface at the mines of The Union Pacific Coal Co. They will be enforced, and are hereby understood to be in force and in effect as of this date.

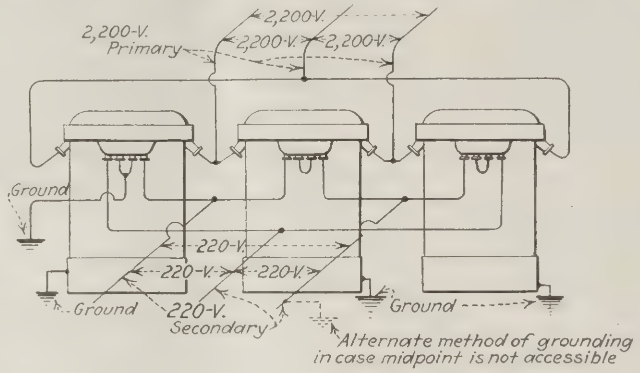


FIG. 2

**Permanent Grounds**

Transformer cases should be grounded in such a manner that the earth contact is not disturbed during ordinary inspection and repair work. If the midpoint of a transformer secondary winding is not accessible, one secondary line should be grounded.

### General Considerations

1. At each mine there shall be posted a plan map showing the mine wiring, cables, conductors and the location of permanently installed electrical machinery. The legend thereon will be as follows: Yellow, high voltage (2,200 volts); red, low voltage alternating current; brown, low voltage direct current, mining machines, pumps, hoists, locomotives, fans, etc., will be designated by note.

These plans shall be revised by the local chief electrician at intervals not exceeding six months, and oftener when necessary.

2. A rigid, systematic and careful inspection of all electrical equipment, cables and supply lines shall be made monthly, a report of this inspection to be forwarded to the office of the chief electrician.

(Note: This inspection shall cover the points outlined under heading—"Instructions to Persons Inspecting Electrical Equipment.")

3. In all future installations within the mines, the voltage shall not exceed 2,200. This potential may be brought in and applied to transformers, motor-generator sets, hoists, pumps or other apparatus upon the recommendation of the vice-president and general manager, and shall be installed under the direction of the chief electrical engineer. Mining machines, locomotives or small-capacity motors (less than 25 hp.) shall not have a voltage in excess of 275.

The exceptions to this are: The No. 40 Room hoist at No. 1 Cumberland; the Old No. 4 Panel hoist, in C Mine, Superior; the 100-hp. motor at No. 7 Mine, Winton; the 75-hp. motor No. 2 Mine, Rock Springs; the 50-hp. No. 4 Panel machine at No. 3 Mine, Winton; the 35-hp. motor, formerly used at No. 9 Panel, in C Mine, Superior; the 30-hp., No. 6 Panel hoist at C Mine, Superior; the 52-hp., No. 4 Panel machine in C Mine, Superior; and the mining machines and locomotives at mines Nos. 2 and 7, Rock Springs. These latter are to be subsequently changed to the lower voltage.

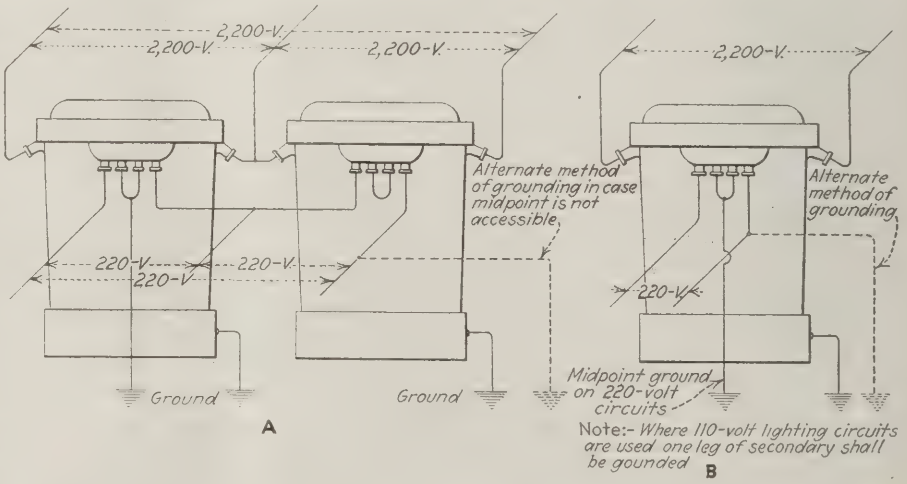

2,200-V.
2,200-V.
2,200-V.
2,200-V.
Alternate method of grounding in case midpoint is not accessible
Alternate method of grounding
220-V
220-V.
220-V
220-V
Ground
Ground
Midpoint ground on 220-volt circuits
A
Note:- Where 110-volt lighting circuits are used one leg of secondary shall be gounded
B

**Fig. 3—Protecting an Open-Delta and Single-Phase Connection**

*A*—The secondary circuit may be grounded either at the midpoint of a transformer winding or by making an earth connection to one of the line wires. In all instances the casings of the transformers should always be grounded. *B*—This arrangement is usually for lighting transformers but in all instances the tank should be grounded and also the midpoint of the secondary winding or a line wire.

4. All knife switches shall be of the safety inclosed type.

### Grounding

1. The frames, casings or inclosures of all stationary electrical apparatus such as motors, motor-generator sets, rotary converters, transformers, starting and control apparatus, oil switches, cable sheaths, or other equipment that accidentally may become charged with electric current shall be grounded. (By grounding is meant making a permanent connection to the general mass of the earth in such a manner as will insure at all times an immediate discharge of electrical energy to it without danger.)

2. All ground wires to be copper, not smaller than No. 4 B. & S. gage.

3. Ground wire connections to the apparatus shall be made by means of terminals soldered to the ground wire and securely bolted to the apparatus at such a point that its removal for inspection or repair will be unnecessary.

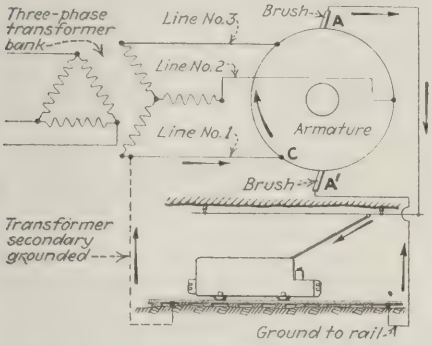


**Fig. 4—No Grounds Used on Transformers for Rotaries**

There is a physical circuit connection between the alternating-current energy and the direct-current supply in a rotary converter, consequently, since the direct-current system is normally grounded, another earth connection made to the secondary wires of the transformers creates a short current around a part of the rotary winding. For instance, if line No. 1 is grounded, current from *A* goes through the motor and returns to the rotary via two paths, one to *A'* and the other to the point *C* through line No. 1. Thus the section of the winding between *C* and *A'* is short circuited.

4. All ground connections shall be made to pipe lines, track or ground plates that are in contact with permanently moist earth; the connections to be mechanically secured and soldered. (See Fig. 1.)

5. All ground connections are to be approved by the local chief electrician.

6. Ground wires should be straight, and as short as possible and where necessarily run in pipe the ground wire shall be electrically bonded thereto.

7. Solid wire shall be used for grounds, except that flexible wire may be employed for connection to hinged or moving parts where it is necessary to make such connections.

8. Ground wires shall be installed in such a way that they can be inspected for continuity and be protected from mechanical injury.

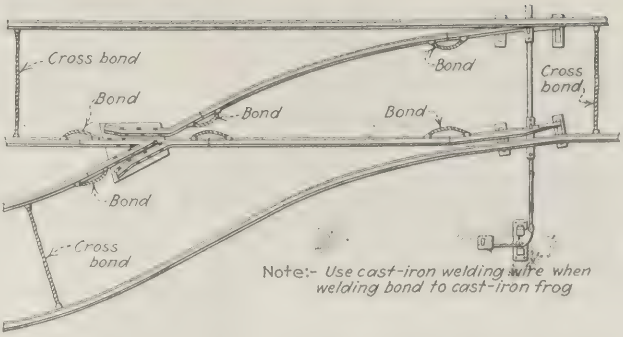
9. Transformer cases, oil switches and supporting frames shall be effectively grounded.

10. The secondaries of one transformer of each three-phase bank shall be grounded at the point which brings about the lowest voltage from ground to live conductor. (See Figs. 2 and 3.)

FIG. 5

**Bonding Around Switches**

A well bonded rail system may easily be spoiled by a poor arrangement of bonds at switches and turnouts. The aim should be to obtain a two-rail path for current both around the switch and to the tracks leading therefrom.


Cross bond
Bond
Bond
Bond
Cross bond
Bond
Bond
Cross bond
Note:- Use cast-iron welding wire when welding bond to cast-iron frog

11. Single-phase lighting transformers shall have the case and one side of the secondary grounded. (See Fig. 3.)

12. The secondaries of transformers supplying rotary converters shall not be grounded. (See Fig. 4.)

### Bonding

1. It is mandatory that all bonds found or known to be defective or broken be replaced on the same shift as that during which they are discovered or before the beginning of the succeeding shift.

2. All tracks used as a conductor for electric current shall be bonded at every joint and cross bonded at intervals not exceeding 300 ft.

3. Bonds at switches, frogs and turnouts shall be applied a shown in Fig. 5.

4. All bonds are to be of the arc-weld type welded to the base of the rail on the inside of the track. They must be of sufficient length to span the splice bars or fish plates. (Note: Bonds to be 4 in. longer than splice bars or fish plates.)

5. Bonds are to be welded to the rail in such a way as to give proper conductivity and permit of complete salvage. (See Fig. 6.)

6. All track bonding shall be given a thorough physical inspection every three months, and a report of findings forwarded to the chief electrician.

### Trolley Wires

1. Trolley wires shall be No. 4/0 B. & S. gage grooved and shall be supported on O. B. Cat. No. 11,309 type hangers, and O. B. Cat. No. 13,508 clamps or their equivalents.

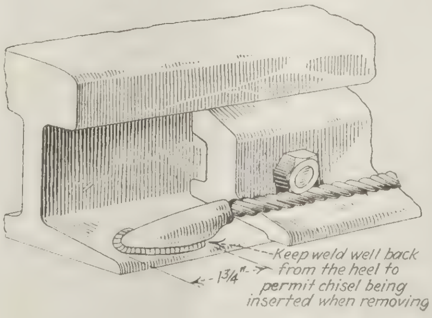

Keep weld well back from the heel to permit chisel being inserted when removing
1¾"

**Fig. 6—Where Welds Are Best**

The primary thought in applying a bond should be to obtain high conductivity at the joint. However, it should be done in such a manner that the bond may be completely salvaged. So that they will be better protected and yet be easily removed when it is necessary to do so bonds should be welded to the inside section of the base of the rail.

2. The height of the trolley wire above the rail shall be made as uniform as practicable.

3. Trolley wires shall be placed so as to give the maximum practical clearance and shall be kept in as straight a line as possible. They shall have a maximum height of not to exceed 6½ ft. and a minimum of not less than 4 ft.

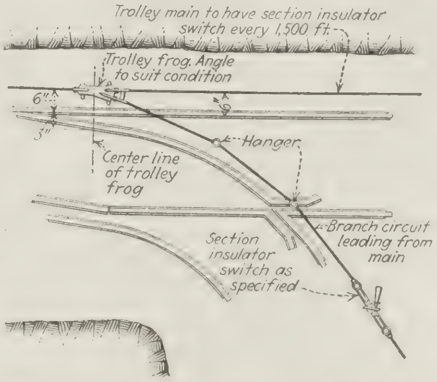

Trolley main to have section insulator switch every 1,500 ft.
Trolley frog. Angle to suit condition
6"
3"
Hanger
Center line of trolley frog
Branch circuit leading from main
Section insulator switch as specified

**Fig. 7—Many Sectionalizing Switches Prevent Hazards**

Underground trolley circuits should be laid out so that a section insulator switch is located every 1,500 ft. in the line. Branch circuits should be equipped with a section insulator switch at the point where a tap is taken from a main trolley wire. Suitable signs indicating the location of switches should be placed along the line.

4. On straight runs the hangers shall be placed not more than 20 ft. apart where the height of the roof above the track is 5 ft. or less and not more than 30 ft. apart where the roof is more than 5 ft. above the track. On curves the hangers shall be placed sufficiently close together that the trolley wire at any one hanger may be entirely disconnected without exposing the locomotive runner to danger of contact.

5. Underground trolley circuits shall be sectionalized every 1,500 ft. by placing a switch in the line (similar to O. B. Cat. No. 11,600) by which the line can be entirely disconnected from the source of supply. All branch trolley lines shall be provided with a frog at the point where they leave the main and also with a switch (O. B. Cat. No. 11,600 or its equivalent) installed at or near the frog by which the branch can be disconnected from the main. (See Fig. 7.)

6. Appropriate signs designating location of disconnecting switches shall be placed along the line.

# News Of the Industry

## Pinchot Calls Special Session of Legislature to Regulate Anthracite; Governor Bitterly Attacks Operators

Governor Pinchot, still smarting under the operators' rejection of his "peace" program to end the anthracite strike, has again taken the offensive with a call for a special session of the Pennsylvania Legislature to meet on Jan. 13, 1926. At that time the Governor will ask the state lawmakers to enact measures to declare the anthracite industry a public utility and "to regulate through an appropriate state agency any and all of the businesses of producing, preparing, selling and distributing anthracite coal for domestic use." In addition, he will seek authorization of "compacts with any or all other anthracite-consuming states and the District of Columbia for the regulation of any or all of said businesses in the contracting states through an interstate commission or otherwise."

This is the second time that the Governor has urged state compacts under the tenth clause of the Constitution of the United States. In 1923, following widespread criticism of the manner in which he settled the strike in that year, he called a conference of his fellow governors and suggested state compacts as one solution of their complaints against high prices. The first conference was a fiasco; a second was a still greater failure from an attendance standpoint. At those meetings the state-compact idea was not only attacked but ridiculed. Governor Silzer of New Jersey declared it would take 31 years to get 31 states lined up. Governor Preus of Minnesota was a strong advocate of regulation through the device of declaring the industry a public utility.

### Scheme Failed Two Years Ago

The upshot of these conferences was that the Pinchot ideas in so far as they touched upon federal regulation of the anthracite industry were finally embodied in a bill which the Pennsylvania Senators at Washington declined to sponsor. Senator Borah then took the Pinchot legislative orphan under his care, but the bill was never pressed and there were no loud wails either in Washington or in Harrisburg when the measure died a peaceful death with the expiration of Congress. During the Harrisburg governors' conferences in 1923, Pinchot refused to entertain a proposal to issue a call for a special session, intimating that no favorable action by the Legislature could be expected. Attention was called at that time to the fact that a bill to declare anthracite subject to regulation had been introduced at Harrisburg by Representative Burns of Philadelphia and had made no progress in the regular session.

In announcing the call for the special session, which dockets giant power and a number of other subjects for consideration as well as coal, Governor Pinchot said:

"The present suspension in the anthracite region is a matter of the largest and most pressing importance not only to Pennsylvania but to all of the 40,000,000 anthracite-using people of America. It amounts to a dangerous crisis which must be met with promptness and courage.

### Cites Courtesy of Miners

"In an effort to settle the strike, as Governor of Pennsylvania I invited the negotiating committees of the anthracite miners and operators to meet me in Harrisburg on Nov. 18. The miners courteously honored my request by the attendance not only of their negotiating committee but of the entire membership of the scale committees of all three anthracite districts. The operators refused to attend and were not represented.

"At that meeting I submitted, as I said, the rough outline on an agreement upon which, in substance, I believe the present suspension of work in the anthracite mines could be, and ought to be, ended at once with justice to the miners, the operators and the anthracite-using people of America.

"This rough outline was a middle ground and was far from giving the miners all of their demands. Nevertheless, with a degree of moderation and regard for the public interest which does them high honor, they agreed to accept the outline agreement I proposed as a basis for settlement. If the operators had done the same the mines would have been open within a week.

"The operators, however, flatly refused to consider my rough outline as a basis for settlement. They refused to consider it even as a basis for conference and negotiation. From first to last they have refused to yield one jot or tittle of their original position. The anthracite coal strike, which was at first a strike of the miners against the operators, has therefore now become a strike of the operators against the public.

"The situation thus created amounts to an attack upon millions of anthracite users in Pennsylvania and other states, who are thus deprived of their customary fuel. The whole future of the anthracite industry is threatened by popular resentment and the use of substitutes. The prosperity of the anthracite region, now and hereafter, hangs in the balance. The public interests are gravely injured already and threatened with still more serious damage. Negotiations are at a standstill. The public must either suffer in silence or it must take measures to protect itself.

### May Regulate as Public Utility

"The anthracite industry is a monopoly which has created such a relationship to the public that the stoppage of anthracite production is materially dangerous to the life and health of the people. The Attorney General has advised me that under the clear intent of a recent decision of the Supreme Court of the United States the anthracite industry, being a monopoly, may be declared to be affected with a public interest and therefore subject to regulation as a public utility.

"Action by the Legislature declaring the anthracite monopoly to be a public utility will supply some degree of public control where none exists today; will furnish information never before revealed, and will exert the most powerful influence the public can apply toward the settlement of the strike. What is equally important, it will be the most effective step that can be taken toward securing uninterrupted prosperity for the inhabitants of the anthracite region

### *Widen Coal-Laden Sewer To Obtain Fuel*

Municipal buildings, including the fire houses and City Hall, of Shamokin Borough, Pa., in the heart of the lower anthracite field, having been without coal, making it necessary for clerks to work with the aid of electric heaters, the borough started mining coal for its own use last week.

A large sewer, built like a mine gangway, or tunnel, cuts through the Red Ash bed in the center of the town, and the Councilmen decided to widen the sewer and take out the coal for municipal purposes. Borough employees who also are experienced miners extracted the coal.

## Jail and Fine Pickets In W. Va. Strike Zone; Non-Union Output Gains

Monongah, the last stronghold of any consequence of the United Mine Workers in the heart of the Fairmont field, in northern West Virginia, continues to be the storm center in the present labor struggle. On Dec. 10 Judge Winfield Scott Meredith, in the Marion Circuit Court, passed sentence on 50 former pickets at the Monongah opening of the Watson mine of the Consolidation Coal Co., after deferring the matter several months. Patrick Buckley, president of Monongah local No. 1,643, who is a brother of Mayor Thomas V. Buckley of Fairmont, was fined $50 and sentenced to jail for 10 days. Ed Vingle, the leader of the Monongah miners' band, was fined $35 and given five days in jail. Twelve pickets were each fined $25; 24 pickets drew a $10 fine and 12 women pickets were each fined $1.

The miners gave notice of an appeal to the Supreme Court of West Virginia on the Buckley and Vingle charges and each gave bond in the sum of $1,000, pending Judge Meredith's decision. All the others paid their fines.

The Supreme Court of Appeals in Charleston on Dec. 8 heard argument on the writ of error granted to Van A. Bittner, chief international representative of the United Mine Workers in northern West Virginia. The court will pass on the matter at the January term, but it is possible that the case will not be reached until March 2. Bittner was sentenced to serve six months in the Monongalia County jail in Morgantown and was fined $100 on a charge of contempt of court by Judge I. Grant Lazelle in Monongalia County several months ago. Bittner then obtained a writ of error. The alleged contempt was made in a speech which Bittner delivered in Fairmont.

The miners' office in Fairmont was busy last week distributing clothing to the striking miners and their families. Various trade unions all over the country are sending cast-off clothing and the international organization is said to have spent $12,000 recently for new clothing that was distributed. The miners continue to hold group meetings in the region.

*Keystone View Co.*

**Col. John J. Byrne**

Appointed chairman of the State Fuel Commission last week by Gov. Al Smith of New York. Colonel Byrne has been prominently identified with state military affairs for many years and commands the 244th Artillery Regiment of the National Guard. He succeeds Major General Charles W. Berry, who was elected Comptroller of New York City in the November election.

Recently the Marion County Court met and dismissed a number of deputy sheriffs, believing that the disturbances in the mining towns were growing less numerous daily.

Non-union coal production continues to mount daily. A new daily non-union peak was attained Dec. 9, when 2,049 carloads was produced. In the first four days of last week the mines at work on a non-union basis produced 7,930 carloads of coal compared to 7,217 cars in the corresponding period of the previous week. Union mines loaded 1,136 cars of coal in the same period compared to 1,173 cars in the first four days of the preceding week.

On an average there were 226 non-union mines at work daily in the region during the first four days of last week. In the same period 14 mines worked on a union basis. Not a union mine worked on the Monongah Division, B. & O., for seven workdays, until Dec. 10, when a union mine resumed operation. The backbone of the union is on Scotts Run, where 13 mines operated daily.

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and an uninterrupted supply of anthracite for those who need it."

Formal statements on the Governor's latest move had been withheld by spokesmen for the miners and the operators up to the time this issue of *Coal Age* went to press. Announcement was made, however, that Major Inglis had called a meeting of his associates to consider the situation. The Governor followed up his proclamation with a summons to the mayors and burgesses of the cities and towns in the anthracite region to confer with him at Harrisburg on Dec. 16.

A further gesture toward legislative action in the situation was made a few days ago when Democratic Congressmen from New York went on record as favoring the enactment of a resolution to have the President appoint another commission to investigate and report not later than Feb. 1, 1926. Governor Silzer of New Jersey, transmitting a petition from the Board of Commissioners of Jersey City, wrote Washington that he hoped federal action to end the tie-up would be taken. The business men of the anthracite region, after an abortive meeting with Governor Pinchot on Dec. 8, appealed directly to the operators and miners for a resumption of negotiations, but without evidence of success.

Late reports from the mining districts indicate that the pinch of the suspension is being felt by the strikers. Many miners are on the ragged edge financially and some cases of actual privation and suffering have developed.

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## Hint of General Strike In Southwest

Likelihood of a strike throughout the Southwestern coal field was hinted in an announcement, Dec. 8, from headquarters of District 14, United Mine Workers (Kansas), following the return of J. V. Fitzgibbons, joint board member, from a conference with John L. Lewis, international president, in Springfield, Ill. At the meeting were representatives of districts 13, 14, 21 and 25, comprising Iowa, Kansas, Oklahoma, Arkansas and Missouri, the same districts that were represented in Kansas City in two or three secret meetings preliminary to the one in Springfield.

"Violation and abrogation by the coal operators of the joint agreement in the Southwest was the subject matter of the conference," the district 14 statement said. "A policy of procedure was agreed upon and a committee from the international union will visit the Southwest at once to decide whether violations of contract by operators, particularly in District 21 (Oklahoma), will justify a cessation of work by all union men in the four districts represented at the conference."

James Sherwood, state mine inspector, of Kansas, announced recently that the number of mines now operating in the state exceeds by more than 100 the number open at this time last year. All are working full time.

## Advisory Committee Approves Mine Bureau Plans

The recommendations of its subcommittees in regard to the reorganization of the Bureau of Mines were approved by the full Advisory Committee which met in Washingotn Dec. 12. These recommendations embody the plan for the creation of an economic branch, for the transfer of the coal and minerals divisions from the Bureau of Foreign and Domestic Commerce and certain mineral statistics from the Bureau of the Census.

Some objection has arisen to the actual rescue operations of the Bureau of Mines crews. The committee has no thought of recommending anything that would pave the way for the building up of a great mine-rescue activity. The desire is to concentrate safety work on matters of instruction and demonstration, but the committee does not see how it can restrict rescue operations when the Bureau's cars are near enough to a disaster to render aid when it is requested by the state authorities and the mine operators. Actual participation in rescue work, however, will continue to be an incident to the operation of rescue cars.

All of the recommendations which have been approved thus far are to be drafted in final form at once. The next meeting of the Advisory Committee will be held in Washington the last week in January. On that occasion the committee will meet with Director Turner, who by that time will have had an opportunity to familiarize himself with the application of the changes which have been suggested. Mr. Turner expects to begin his active duties immediately after the first of the year.

## Smokeless Operators Told Of Increasing Esteem for Non-Union Coal Producer

Never before have the non-union coal operators of the country stood so high in the public esteem. This point was expressed by J. A. Emery, chief counsel for the National Association of Manufacturers, during remarks at a luncheon of the Smokeless Coal Operators' Association of West Virginia held in Washington Dec. 10. The public is beginning to realize that it has much to be thankful for because of its great independent source of fuel supply, he said.

Mr. Emery praised the effort being made by the West Virginia operators to co-operate in a study of the "problems, the responsibilities, the rights, and the great duties" of their industry. The operators are co-operating, he said, in an effort to improve the service that they are rendering the public. While it is possible to obtain co-operation in such things, he expressed the opinion that it would be as difficult to get men accustomed to matching their judgment against that of competitors to become a part of a monopoly as it would be to get a chorus made up of prima donnas.

Mr. Emery condemned the tendency of some individual producers to be dissatisfied with association work if they do not receive $2 worth of service from the association for each dollar which they expend in dues. Much of the benefit of association work, he asserted, must be general, just as the sanitation of a city preserves the general health and is highly commendable, despite the fact that an individual who may have an attack of gallstones must call in a physician. The public is beginning to learn, he stated, that business men can co-operate and still be competitors.

Co-operation, Mr. Emery said, must be judged by its objectives. If it is used to the disadvantage of the public it is not only illegal but it is immoral. He compared such co-operation as that of the smokeless operators with that of the United Mine Workers. In the latter instance, he pointed out, the avowed purpose is the building up of a monopoly to fix wages regardless of its effect on the public. Were industry to attempt any such thing, he said, there would be an outburst on the first page of every yellow journal in America.

**Col. W. D. Ord**
Re-elected President by Smokeless Operators

The organized effort of national organizations to combat government interference with private industry and to limit the competition which the government may maintain with taxpayers was cited by Mr. Emery as indicative of the disapproval being aroused against the assumption of economic functions by the government, in addition to its proper political functions. He said there is little to fear from the soap-box socialist, for whom the public has little time, but the socialist is not so easily recognized in the habiliments of a U. S. Senator, he pointed out.

Colonel W. D. Ord was chosen to serve a second term as president of the association. E. J. McVann was reelected secretary. Major L. Rodman Page, Jr., was selected as first vice-president; Major W. P. Tams, Jr., second vice-president, and G. H. Caperton, treasurer. On the Board of Governors the Winding Gulf Association will be represented by A. J. King and C. Hooper Mead; the Pocahontas Association by Major L. Rodman Page, Jr., and T. F. Farrell; the Tug River Association by J. T. Wilson and J. L. Steinbugler; the New River Association by G. H. Caperton and D. B. Wentz; the Greenbrier Association by J. B. Laing.

## Cost of Locomotive Fuel Advances Slightly

There was little change in the quantity and average cost per ton of coal used by Class 1 railroads of the United States in locomotives in transportation train service during September as compared with August, according to figures compiled by the Bureau of Coal Economics of the National Coal Association. Figures prepared by the bureau show the following averages: Eastern district, $2.67; Southern district, $2.19; Western district, $3; United States, $2.67.

Variation from August totals was slight; there was a decrease of 3c. per ton in the average for the Eastern district, an increase of 3c. in the Southern district, an increase of 2c. in the Western district and an increase of 1c. for the entire country. Compared with September a year ago the figures show a decrease of 31c. for the Eastern district; 17c. for the Southern district; 16c. for the Western district and 24c. for the United States.

Tho total cost of coal and fuel oil for the first nine months of this year was $241,401,019, as against $265,771,476 for the first nine months of last year. This saving of $24,370,457 resulted partly from a decrease in the price of coal and partly from economies effected by the railroad management.

## John A. Bell Convicted of Embezzlement of $600,000

John A. Bell, well-known Pittsburgh coal operator, was found guilty Dec. 8 of embezzling more than $600,000 from the Carnegie Trust Co. of Carnegie. The maximum sentence under the twelve counts in the indictment is sixty years' imprisonment and $60,000 fine.

Bell also was president of the First National Bank of Carnegie and the Burgettstown National Bank of Burgettstown. Both institutions closed their doors following the Carnegie Trust Co. crash. The Carnegie Coal Co., controlled by Bell, is second only in size to the Pittsburgh Coal Co. in western Pennsylvania. He also controlled other large mining operations. At one time Bell's fortune was estimated at $25,000,000 to $30,000,000.

## Bituminous Coal Loaded Into Vessels at Lake Erie Ports During Season to End of November

(In Net Tons)

| Ports | Railroads | 1925 | | | 1924 | | | 1923 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Cargo | Fuel | Total | Cargo | Fuel | Total | Cargo | Fuel | Total |
| Toledo | Hocking Valley | 8,003,863 | 236,092 | 8,239,955 | 6,531,303 | 194,032 | 6,725,335 | 5,003,169 | 150,612 | 5,153,781 |
| | Big Four | 1,537,136 | 9,398 | 1,546,534 | 57,298 | 138 | 57,436 | .......... | ........ | .......... |
| | N. Y. C.-Ohio Central Lines | 996,891 | 73,774 | 1,070,665 | 135,399 | 5,090 | 140,489 | 1,179,147 | 36,815 | 1,215,962 |
| | Baltimore & Ohio | 3,147,598 | 95,607 | 3,243,205 | 2,154,306 | 66,808 | 2,221,114 | 2,861,500 | 83,889 | 2,945,389 |
| Sandusky | Pennsylvania | 6,073,533 | 182,247 | 6,255,780 | 4,152,278 | 125,120 | 4,277,398 | 3,005,405 | 95,418 | 3,100,823 |
| Huron | Wheeling & Lake Erie | 703,627 | 36,597 | 740,224 | 790,494 | 36,264 | 826,758 | 1,471,905 | 58,169 | 1,530,074 |
| Lorain | Baltimore & Ohio | *1,569,264 | 155,526 | 1,724,790 | 2,218,245 | 158,610 | 2,376,855 | 3,643,163 | 194,893 | 3,838,056 |
| Cleveland | Pennsylvania | 387,474 | 170,764 | 558,238 | 1,412,762 | 175,782 | 1,588,544 | 1,850,573 | 198,975 | 2,049,548 |
| | Erie | 18,138 | 1,252 | 19,390 | 327,720 | 11,336 | 339,056 | 739,025 | 31,920 | 770,945 |
| Fairport | Baltimore & Ohio | 938,678 | 112,718 | 1,051,396 | 550,702 | 84,394 | 635,096 | 880,389 | 80,118 | 960,507 |
| Ashtabula | New York Central | 327,777 | 81,526 | 409,303 | 868,915 | 112,296 | 981,211 | 3,322,902 | 253,537 | 3,576,439 |
| | Pennsylvania | 773,291 | 86,234 | 859,525 | 1,183,630 | 78,463 | 1,262,093 | 2,083,379 | 91,037 | 2,174,416 |
| Conneaut | Bessemer & Lake Erie | 1,101,250 | 212,740 | 1,313,990 | 1,502,672 | 196,727 | 1,699,399 | 2,781,553 | 240,553 | 3,022,106 |
| Erie | Pennsylvania | 278,413 | 58,637 | 337,050 | 684,669 | 85,802 | 770,471 | 717,240 | 93,489 | 810,729 |
| Total | | 25,856,933 | 1,513,112 | 27,370,045 | 22,570,393 | 1,330,862 | 23,901,255 | 29,539,350 | 1,609,425 | 31,148,775 |
| Storage loading | | ‡33,017 | 1,048 | 34,065 | †182,060 | 4,940 | 187,000 | .......... | ......... | .......... |

* Includes 42,005 tons cargo and 2,798 tons fuel dumped at Huron on account of fire at Lorain, June 12, 1925; also includes 3,631 tons fuel dumped over ore docks at Lorain.

† Coal loaded into vessels in December, 1923, after close of navigation and forwarded from Lake Erie Ports during 1924.

‡ Coal loaded into vessels in December, 1924, after close of navigation and forwarded from Lake Erie Ports during 1925.

Compiled by Ore & Coal Exchange, Cleveland, Ohio; H. M. Griggs, manager.

# Suppression of Coolidge Reply To Lewis Threat Piques Public; Executive Intervention Distant

**By Paul Wooton**

Washington Correspondent of *Coal Age*

Interest in the President's reply to John L. Lewis has been fanned into a flame by the unexpected withholding of the letter from the public. The general assumption is that Mr. Coolidge took advantage of the opportunity to point out with entire frankness what he thinks of the threat to call a strike in the union fields. Many express regret that the spanking was not done publicly instead of in a dark closet. As this is written the general expectation is that the text of the letter never will be made public.

The President's message to Congress, however, gives more definite form to the administration's coal policy. While the President in general only repeats the recommendations contained in the first Coolidge message, it is possible in the light of events of the past two years to get a clearer picture of his intentions. What was then vague now is understood.

Observers in Washington see in the message a definite commitment to a policy of non-intervention until sufficient authority is given to allow the executive to take steps that would have a chance to be successful. The President does not favor a policy of complete aloofness as it is apparent that he would approve legislation which would provide for the following:

(1) Fact finding and publicity, presumably through the Bureau of Mines, as the Department of Commerce is mentioned specifically.

(2) Encouragement of regional consolidations and the authorization of co-operative marketing associations.

(3) Authorization for the secretaries of Commerce and of Labor to undertake mediation proceedings.

(4) Authorization to direct the distribution of coal during emergencies. This apparently means nothing more drastic than the issuance of priorities and the control of rail distribution along the lines of the Fuel Distribution act of 1923.

### What Does the President Mean?

The least definite of the foregoing is the suggestion concerning mediation. Those interested in the President's views, both inside and outside of Congress, would like to see him elaborate this point. Does Mr. Coolidge mean the tendering of good offices through some Cabinet officer? If so, that would not differ greatly from the present conciliation work of the Department of Labor. Does he mean compulsory investigation and report to the President in the event of a big strike without compulsory acceptance of the findings as recommended by the Coal Commission? Would he set up machinery for voluntary arbitration?

Though the President's program clearly embraces the points enumerated, it is obvious that he is not pressing his ideas on Congress. His attitude rather is that Barkis is willin'. The center of interest, therefore, has shifted to Congress, where the action likely to be taken will depend largely on the anthracite strike. If the strike is settled without great public inconvenience there would be little chance for legislation. This would happen not so much because Congress is averse to dealing with the matter but because the other business crowding for attention then would appear to be relatively more important.

### Much Depends Upon the Weather

An unusual number of coal bills have been introduced or are under preparation. If the strike should drag on with little prospect of settlement or if Mr. Lewis should create the impression that a bituminous strike is imminent, the prospects would be favorable for obtaining some sort of legislation. The chances would be increased greatly were there to be a period of severe weather. Thus far this autumn the weather man has been with the operators. Were the weather to turn colder it might reveal a condition of unpreparedness which thus far the mild weather has covered up.

## Utilities Consume More Coal And Oil in October

Public utility power plants in the United States consumed 3,699,207 net tons of coal in October, according to a report by the U. S. Geological Survey. This compares with 3,471,638 tons in September, as shown by revised figures. Fuel oil consumption by utilities in October totaled 837,741 barrels, compared with 807,406 barrels in September as shown by revised figures.

The average daily production of electricity by public-utility power plants in October was 191,300,000 kw.-hr. More electricity was generated by electric public-utility power plants in the United States in October than ever before. The daily output exceeded that of September by nearly 5 per cent and that of January, whose daily rate was next to September, by 6½ per cent. The output in October of this year exceeded that of October, 1924, by more than 14 per cent. The total output for the 4-month period from July to October of this year was 15 per cent greater than for the same period in 1924.

## *British Coal Subsidy Nearly Doubled*

A supplementary allowance of £9,000,000 for the coal mining subsidy, bringing the total voted to £19,000,000, was adopted by the British House of Commons, Dec. 10.

Winston Churchill, Chancellor of the Exchequer, in moving the vote, explained that 90 per cent of the subsidy had gone directly to wages.

Over the whole coal fields the mine owners were making scarcely any profit, he asserted, but were just able to keep themselves going. He estimated that the total cost of the subsidy would approach £21,000,000.

**William L. Abbott**

Newly elected president of the American Society of Mechanical Engineers, who assumed office Dec. 4. He is well known as the foe of coal waste, having been chairman of the committee of the American Engineering Council which conducted a nationwide study of coal storage in co-operation with the Department of Commerce and the U. S. Coal Commission.

## Fraud Warning

Warning has been broadcast by the Post Office Department of a fraudulent coal-selling scheme perpetrated by J. W. McCarthy, who at various times has operated under the name John Webster McCarthy, the Kanawha-Hazard Coal Co. and the Wood Coal Co.

By means of false financial statements and other false representations he induced coal operators to ship on his orders without paying the operators, the coal being shipped and billed with the name of his company as the shipper, and the purchaser remitting direct to him or his company. He also secured advance payments for anthracite by furnishing the prospective purchaser with false bills of lading in some instances, and in others by merely representing that the coal would be or had been shipped. He succeeded in swindling several coal companies in West Virginia, Virginia, Pennsylvania and New York.

McCarthy was indicted at Charleston, W. Va., May 27, 1925, for using the mails to defraud. He was arrested in New York Oct. 14, 1925, and furnished bail in the amount of $17,000, but has since defaulted and his present whereabouts are unknown.

## Winding Gulf Mining Men Honor E. E. White; Make Snyder President

The Winding Gulf Operators Association at its seventeenth annual meeting in Washington, D. C., Dec. 9, accepted the resignation of E. E. White, who has been president of that association for seventeen consecutive years and honored him with a luncheon and an elaborate watch and chain. Mr. White retires because he has disposed of his holdings in the district to the Massachusetts Coke & Gas Co., and temporarily, at least, severs his connections with West Virginia smokeless coals to give closer attention to his banking and mining interests in the anthracite fields of Pennsylvania.

The association elected P. M. Snyder, of Mt. Hope, W. Va., president; W. Gaston Caperton, of Slab Fork, vice president; George Wolfe, of Beckley, secretary, and A. W. Laing, of McAlpin, W. Va., treasurer. The following were elected to serve on the executive committee: A. W. Laing, C. H. Mead, L. Epperly, W. B. Beale and T. H. Wickham.

At the testimonial luncheon Mr. Snyder, the newly elected president, presided and after a few appropriate remarks turned the meeting over to John Laing, who acted as toastmaster. Outlining the condition of Raleigh County some twenty years ago, when Mr. White first entered the field, and clearly defining the vision and progressive action in policy carried out under the leadership of Mr. White, the various speakers emphasized the high regard and esteem in which the coal industry of southern West Virginia holds Mr. White and the great regret that is felt at his departure.

E. E. White

Among those who spoke were W. J. Harahan, president, Chesapeake & Ohio R. R.; S. M. Adsit, traffic manager, Virginian Ry.; D. E. Spangler, superintendent of transportation, Norfolk & Western Ry.; Harry L. Gandy, executive secretary, National Coal Association; E. J. McVann, secretary, Smokeless Coal Operators' Association; A. M. Belcher, attorney, from Charleston, W. Va.; Holly Stover, Chicago; Rev. H. P. Pullin, McKeesport, Pa.; George W. Williams, attorney, Beckley, W. Va.; A. M. Dudley, coal freight agent, Chesapeake & Ohio Ry.; George I. Neal, attorney, Huntington, W. Va.; William McKell, Glen Jean, W. Va.; Frank Wadleigh, New York City; A. J. King, Huntington, W. Va.; Ernest Chilson, Raleigh, W. Va.; G. H. Caperton, president, New River Coal Co., Charleston, W. Va.; W. Gaston Caperton, Slab Fork, W. Va., the first secretary of the association, who served for ten years in the early days; J. Lewis Bumgardner, attorney, of southern West Virginia.

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The Bureau of Mines has tentatively accepted the invitation from the Safety Engineers of California to hold the 1926 International First-Aid and Safety meet in San Francisco. It is planned to alternate these annual affairs between the Far West and the Middle West.

## *Indiana Miners Rescue Three From Explosion and Fire*

In the Columbia mine, near Bicknell, Ind., on the morning of Nov. 27, while three miners were loading cartridges preparatory to shooting down coal, a keg of blasting powder exploded near them, hurling them some distance and inflicting severe burns on all three.

Edmund Capon and August Boury, who were working near the entry in which the explosion occurred, dashed through the curtain of fire and dragged two of the victims back to safety. Realizing that a third man remained in the burning entry, Capon fought his way back through the smoke, disregarding the danger of further powder explosions.

Boury, waiting outside, heard a faint cry above the crackle of the flames. Stripping off his shirt and soaking it in water, he wrapped it about his head to guard against inhalation of gas fumes and flames, and dashed after Capon. He stumbled over the latter's body, where he had fallen by the prostrate form of the third victim of the explosion. Grasping the shirt collars of Capon and the blast victim, Boury dragged both back through the flames to the main entry. Though painfully burned, it was not until he had assisted in taking the four men to the surface and had aided in placing them in ambulances that Boury submitted to first-aid treatment for himself.

Physicians pronounced the burns of three of the men serious, and the condition of the fourth was said to be critical.

## Disturbances Break Out at Pittsburgh Coal Co. Mines

After a period of uninterrupted operation at the mines of the Pittsburgh Coal Co. in western Pennsylvania, where the 1917 scale is being paid, two disturbances took place in quick succession at Montour No. 10 mine, at Library, and at Midland mine, at Houston. A small-sized riot occurred at Library Dec. 8 and early the following morning a double house owned by the company at Midland mine was dynamited. A family in the building escaped uninjured.

The Sunday before the riot at Library union sympathizers had beaten two negro miners, and on Wednesday a truck which had been carrying supplies to the mine was stoned by a mob of men and women. The driver lost control of the truck and it crashed into the crowd, killing one woman and injuring several other persons. Several deputy sheriffs at the mine also were injured in the fracas. Fifty warrants were sworn out and deputies are still serving them.

Immediately after the trouble the company stated that instead of curtailing operations at the plants, they had increased. By the end of the week the working force had risen to a new maximum of 1,088 men. There were 225 men at work at Library and 303 at Midland. On Tuesday the Pittsburgh Coal Co.'s legal department started eviction proceedings against ten miners living at Library and several at Midland. The houses are needed for men willing to work at the mines.

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### Higher Study in Rescue Work

The U. S. Bureau of Mines has just completed a course of advanced instruction in rescue and recovery operations following mine fires and explosions for the Davis Coal & Coke Co., Thomas, West Virginia. This new department of the Bureau, the Safety Extension Service, under the direction of J. J. Forbes, chief engineer, and his assistant, George Grove, in three weeks trained and issued certificates to forty-seven employees of the company. Certificates also were conferred on three directors of rescue stations and one mine inspector in the State of West Virginia. Also a certificate to one mine inspector from the State of Maryland. The course will be given to a limited number of employees of the same company at Boswell, Pa., some time in December. Upon the completion of the instruction this company will have approximately sixty men trained in the advanced work.

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### Rainey Miners Get Free Powder

The W. J. Rainey Co., the largest independent coke producer in the Connellsville, (Pa.) field, has ended the long dispute over payment for blasting powder used by the miners. In the past a certain portion of the miner's wages was deducted for the powder used in blasting. This nearly caused a strike several times. The company has issued an announcement that in the future blasting powder will be furnished to miners free of all charge.

## Fifty-Two Lose Lives In Gas Explosion in Alabama Coal Mine

A gas explosion in Overton No. 2 mine of the Alabama Fuel & Iron Co., eleven miles from Birmingham, Ala., at 10:30 a.m. Dec. 10 exacted a death toll of fifty-two miners and company employees. Nine of the dead were white and forty-three negroes, most of whom were married men with families. Most of the fatalities resulted from the heavy volume of afterdamp which spread rapidly through the workings, only those in the near vicinity of the blast being burned.

Immediately following reports of the disaster Charles F. DeBardeleben, president of the company; F. E. Cash, S. E. Saxon and Dr. Merriweather, local U. S. Mine Rescue Station officials; Charles H. Nesbitt, chief state mine inspector, and several associate inspectors rushed to the scene with the Mine Bureau car, and equipment and crews were immediately organized for the rescue work and went into the slope. The bodies of seven negro miners were first removed and a number of men who were slightly injured and overcome by the fumes were taken to hospitals. These were found above the entry in which the explosion occurred. The blast occurred in Room No. 7 on the 6th right entry about 2,000 ft. from the opening, and in this entry the greatest number of dead were found. The death toll was large also in the 7th right and 6th left entries.

Rescue crews have been constantly at work since the disaster and all the dead with the exception of two white men have been removed from the mine. The two bodies still in the workings are supposed to be buried under a large rock fall which occurred in 6th right entry and it is understood that it may require several days to remove this rock and recover the last of the victims. According to the records of the company 108 men went into the slope on the morning of the disaster.

The No. 2 Overton Slope, located 11 miles northeast of Birmingham, has been driven to a depth of about 3,000 ft. All inside workers are provided with electric cap lamps. Coal is mined by pick and the only electric cables in the mine are those supplying current to the pumps, none of which were located in the vicinity of the blast. It is a single-track slope, the coal being hoisted by an electric engine. The mine was not rock dusted but was thoroughly sprinkled and watered by the latest approved methods. Excellent ventilation was provided and the best means of eliminating danger from gas were employed. No open lights or matches were permitted. Permissible explosives were used exclusively. The mine is modernly equipped, the best known safety practices being followed by the management, which provided regular instruction both individually and collectively in accident prevention.

Officials of the state mining department, the U. S. Bureau of Mines and the operating company have made only a preliminary examination of the workings and will give out no official opinion as to the cause of the explosion.

**Community Center Developed From Publicity Stunt**

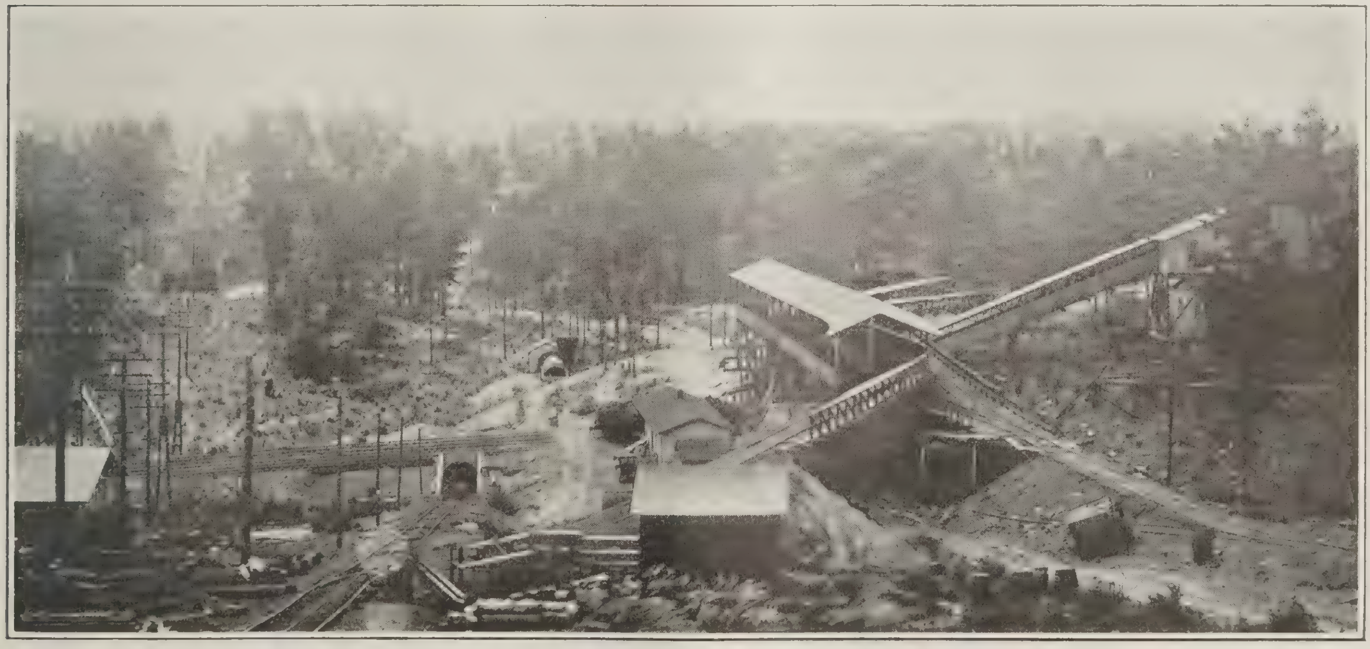
This advertising scheme created by P. J. Emt, Seattle coal dealer, consists of a fireplace set in the wall of a living room in a modern Colonial type bungalow. Two comfortable benches are set before the hearth. The display can be seen for several blocks, particularly at night, when the fire is burning. The fire, of glowing Diamond briquets, is lighted in the evening and little community gatherings are held, charmed by the homey atmosphere of the display.

## C. & N. W. Will Try Out Oil-Electric Locomotives

The Chicago & Northwestern Ry. is seriously considering the use of oil-electric locomotives in the Chicago switching district and the Chicago suburban territory. Two of these locomotives have already been procured for initial tests whch will begin soon and last two months.

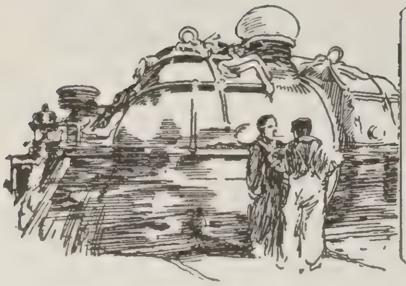
The locomotives to be used are of the Diesel internal-combustion type. The Diesels will be used to drive electric generators, which in turn will furnish power to drive the electric motors. The first locomotive was designed and built by the General Electric Co., the American Locomotive Co. and the Ingersoll-Rand Co. It will weigh about 60 tons and will develop 300 hp. The second locomotive, which weighs 100 tons and develops 600 hp., was designed and built by the Westinghouse Electric & Mfg. Co. and the Baldwin Locomotive Works.

The Jersey Central and Long Island railroads have been testing oil-electric locomotives for nearly a month.

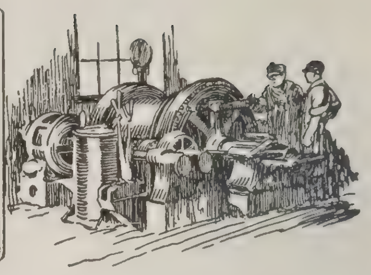


**Exterior View of Overton Mine of the Alabama Fuel & Iron Co.**

Showing main slope, tipple and washery of the operation where fifty-two men were killed in a gas explosion Dec. 10. Two seams are worked at this mine, which is located about 12 miles from Birmingham, Ala. The opening of the main slope can be seen in the left center of the picture. The building at the right, partly hidden by the trees, is the washery.



# Practical Pointers For Electrical And Mechanical Men



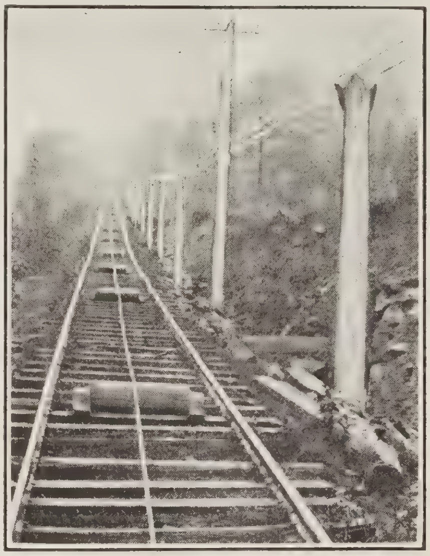
## Operator of Long Incline Can Be Signaled from Moving Car

At drift mines where the seam outcrops on the side of a mountain high above the railroad it is necessary to have a man-and-material incline. Many of these inclines are of such length or contour as to make it impossible for the hoist operator to see the car during its full travel. In such cases it is of advantage to have a method of signaling the operator from the car while at any point enroute. The Southern Mining Co. has such a method at its Balkan, Ky., mine.

An example of the desirability of such a signal system was demonstrated but a few minutes before the accompanying photograph was snapped of the incline leading up to the mine at Balkan. It happened this way: At the end of the day when the last man trip was coming down, a cow walked out on the track. To a stranger on the car it appeared that the truck was soon to be wrecked by reason of the cow. However, in order to signal the operator to stop the car one of the men reached for a copper rod kept on the truck and was about to touch it across the pair of bare signal wires, which parallel the track, when the cow suddenly decided to get out of the way.

### Presents Neat Appearance

These signal wires are supported on short poles spaced 40 ft. apart. Every third pole is a longer one and on the tops of these long poles the telephone lines are carried on steel cross arms. This combination signal-and-telephone line is of sturdy construction and presents a neat appearance. The signal wires are high enough above the ground to escape damage by live stock and yet low enough to be touched easily with a copper rod by a man standing on the truck. Provision for signaling the operator to stop or start the truck at any point is an advantage, also, when repairing the track or rollers.



**Signal Wires Are Within Reach**

A man riding on the truck can signal the operator to start or stop by reaching out with a piece of wire or metal rod and shorting the wires.

## Topworkers Now Have Good Drinking Water

No mammal, with the possible exception of the camel, can long endure the heat and strain of a hard day's work without a periodic refreshing drink—water of course, being the beverage alluded to. Until a few years ago most men at the mines carried whatever water they needed with them when they went to work. Because of their employment in localities that are decidedly remote many underground workers must still, perforce, follow the same practice. Bottom and upperworks employees, on the other hand, now-a-days usually are provided with drinking water at convenient locations near their places of employment.

The accompanying illustrations show one of the drinking fountains (Fig. 1) installed at the mine of the Valier Coal Co., Valier, Ill., as well as the small brick structure in which it is housed. This particular fountain, which is one of several at various locations about the plant, is intended for the use of tipple hands and yard men. It is, therefore, installed beside the hoist house and at the rear of the yardmens' shanty, a portion of which may be seen in Fig. 2.

The brick structure in which this fountain is housed provides adequate protection from the weather. Enough heat will be admitted during the winter months to insure against freezing and a cinder floor will keep the place dry. The fountain itself is white enameled and provision is made for filling glasses, cups or other receptacles.

During the past few months the Valier Coal Co., has been installing an excellent system to provide drinking water about its plant. A small hydraulic pump placed in the shop building provides pressure for this system. This draws its power from an elevated tank and is entirely automatic in its operation, the opening of a spigot fountain starting the pump. The water supplied comes from a deep well located some dis-

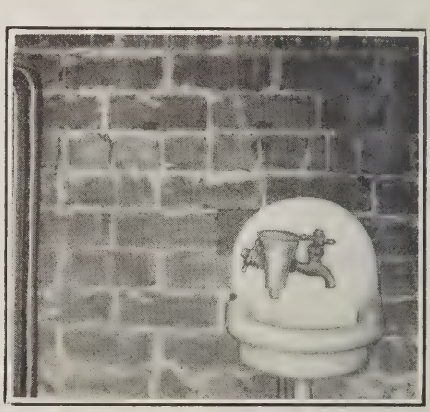


**Fig. 1—Topworks Drinking Fountain**

This is intended to furnish good drinking water to the tipple and yardmen. It is installed in a small brick structure in rear of the hoist house. Enough steam will be admitted to the radiator on the extreme left to keep the pipes from freezing even in the coldest weather. A tamped cinder floor in this building assures that it will always be dry.

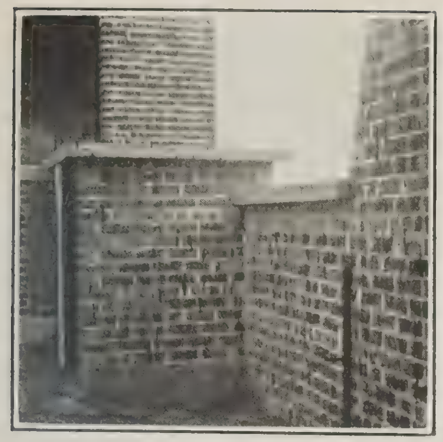


**Fig. 2—Building in Which Fountain Is Housed**

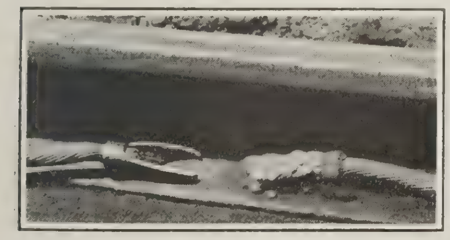
This little structure is provided with a concrete slab roof. The large building to the left is the hoist house and that to the right is the yardmen's shanty. On the extreme right is the chimney serving the fireplace in this latter structure.

tance from the mine shaft. The arrangement is such that an ample supply of wholesome drinking water is available to the employees at all times.

## Copper Welded Terminal Makes Good Bond

Welded bonds have come into general favor because of their high conductivity and permanency of the contact when properly applied. A new type of welded bond is shown in the accompanying illustration. The original photograph was taken at No. 8 mine of the Fordson Coal Co. at Stone, Ky. To make the picture effective an unwelded bond was placed with the terminal in the welding position beside a bond which has been applied and in use for some time. This particular bond was one of the first of this type installed, which accounts for the rather rough appearance of the weld.

The steel terminal is not intended to act as a conductor. Its purpose is to act as a mold and to add mechanical strength. The welding is done by an electric arc and a copper electrode. C. B. Loche, electrical engineer of the Fordson Coal Co., states that he was early convinced of the advantage of welding with a copper electrode and that for some time before these bonds were available he had advocated such a terminal as that just described.



**Copper Electrode Makes Joint**

The terminal shown on the left is designed so as to form a mold into which the copper electrode is deposited. The unit then becomes a copper-to-steel contact.

## Wire Rope Supports Chute For Slate Disposal

Old wire ropes removed from shafts, slopes, and inclines are used in a number of ways about the mines. An unusual application is that of supporting a slate-disposal chute, as shown in the accompanying illustration.

At this mine, that of the New Caryville Coal Co., Caryville, Tenn., the new dump house is at the head of a long monitor plane, and is near a ravine in which there is a large dumping space for slate. To carry the slate from the tipple to the edge of the ravine, where dumping could be started, a 50-ft. chute was necessary. Instead of building a trestle to support this chute, two old cables from the monitor plane were used as a suspension.

**Chute Supported on Ropes Obviates Trestling**

At the mine of the New Caryville Coal Co., Caryville, Tenn., old ropes removed from monitor service form a suspension support for a refuse chute. The lower end is anchored to trees and the upper end to a rock ledge above the tipple. The chute will be extended down along the ropes as new dumping space is required.

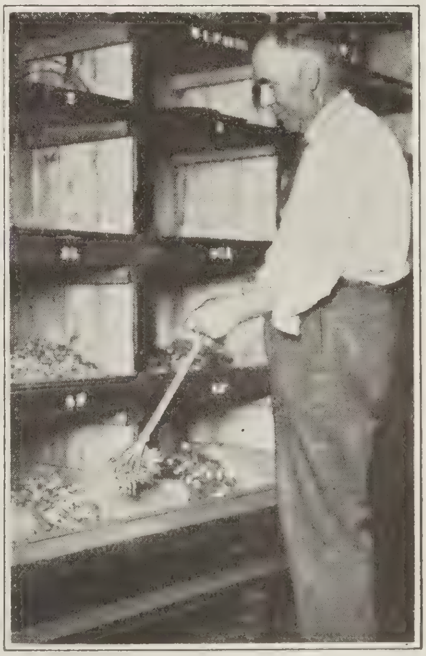
These cables are anchored at the lower end to a couple of trees located about 200 ft. down the ravine. At the upper end the ropes pass over a saddle just below the cross-over dump, and are anchored to a rock ledge. As necessary, the chute will be extended down along the ropes to discharge at a new position.

The dumping of the slate from the mine cars into the chute is handled on the same cross-over dump as the coal. This eliminates the necessity of cutting slate cars out of a trip. When a car thus loaded reaches the dump, a fly gate, which normally forms a section of the bottom of the chute, is raised to a vertical position thus opening a hole through which the slate drops into the disposal chute.

## Fingered Tongs Convenient For Handling Nails

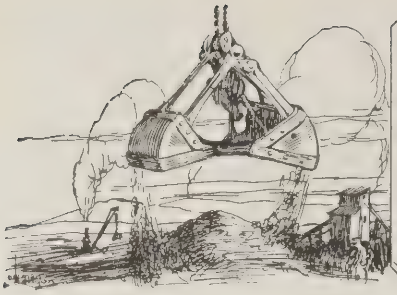
Taking care of the warehouse, storeroom, or storehouse, as it is variously termed at different mines, is usually a one-man job, and this man spends much of his time doing office work in connection with maintaining and dispensing the stock. One item of material particularly in demand, especially at mines where the coal company owns and maintains the houses, fences, and so forth, is that of nails; and no insignificant part of the warehouse man's time is taken up in filling orders for them.

Ordinarily he "digs" the nails out of a bin with his fingers. Before returning to his work in the office he must stop to wash. Even this simple job of dispensing nails can be made much more pleasant, and can be done in half of the time, by the use of the proper tool. In the illustration is shown the eight-fingered tongs used in handling nails at the Earlington warehouse of the West Kentucky Coal Co. This tool, which was made by the mine blacksmith, picks up a bunch of nails in much the same way as a man would pick up a double handful with his fingers. Several pounds can be picked up at one grab.



**An Easy Way to Handle Nails**

This photograph, taken in the Earlington warehouse of the West Kentucky Coal Co., shows how the home-made tongs are used in dispensing nails.



# Production And the Market

## Coal Market Suffers from Effects of Politics, Buying Habits and Mild Weather

Several efforts to bring the hard-coal operators and union leaders together to resume negotiations that would bring about a settlement of the anthracite strike having come to naught, Governor Pinchot's proclamation calling a special session of the Pennsylvania Legislature to begin Jan. 13 occasioned little surprise. Although seven other subjects are listed for consideration there is little doubt that the difficulty in the anthracite industry will occupy an important place in the deliberations of the legislators. It is still worthy of note, incidentally, that despite the approach of January the consuming public displays no unwonted interest in the suspension, the principal insistence on action to bring about a resumption of mining coming from the business interests of the mining region. Meanwhile the tendency to hold back, awaiting results, probably will continue to be in evidence, with a belief in the background that such tactics certainly will not lend any aid to an upward trend in the prices of substitutes.

Failure to release for publication the contents of President Coolidge's reply to John L. Lewis' veiled strike threat in appealing for government intervention in the bituminous coal situation has heightened public interest in the letter from the White House, but as the reason assigned for its suppression was a desire not to interfere with Governor Pinchot's efforts for peace in the hard-coal region it is not likely that the President's reply will ever be published.

### Soft Coal Weakens Further

Softness in the bituminous coal market is becoming more marked, due to a combination of untoward circumstances—from the standpoint of the trade. Buying habits, as exemplified in the customary tapering off in orders with the approach of the holidays and inventory taking, in conjunction with the usual readjustment following the close of the lake season has had an unsettling effect on conditions. Generally mild temperatures and the maintenance of production at a high level have added further weight to the depression.

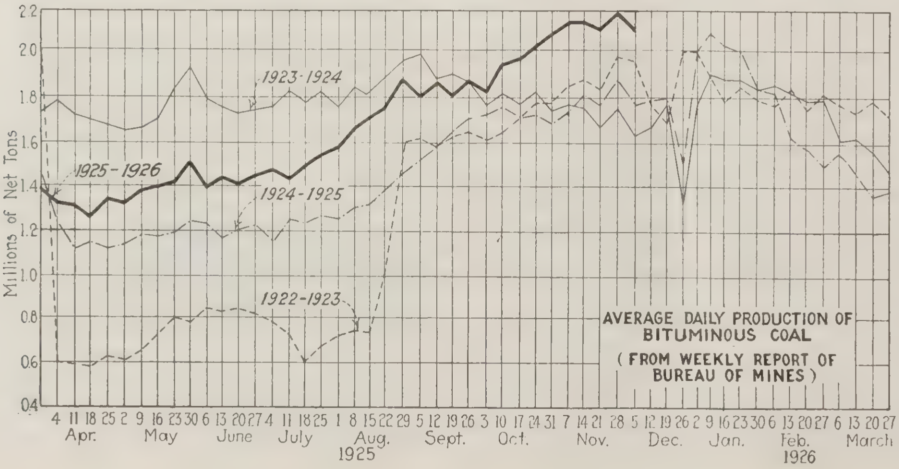
Save for an occasional cargo of pea and No. 1 buckwheat in New York Harbor, hard coal is virtually off the market. Consumers continue to show a growing interest in coke, though retailers are chary about increasing yard stocks, preferring to play a waiting game as long as possible.

### Output Still Hitting High

Production of bituminous coal during the week ended Dec. 5 is estimated by the Bureau of Mines at 12,768,000 net tons, which is the highest weekly tonnage reported since Dec. 11, 1920. This compares with an output of 11,600,000 tons in the preceding week. Anthracite output in the week ended Dec. 5 totaled 62,000 net tons, a gain of 26,000 tons over the previous week. Total output since Jan. 1 is 61,945,000 tons, which is 26 per cent less than that of the corresponding period of 1924.

*Coal Age* Index of spot prices of bituminous coal stood on Dec. 14 at 182, the corresponding price being $2.20, compared with 184 and $2.22 on Dec. 7.

Dumpings of coal at Lake Erie ports during the week ended Dec. 13, according to the Ore & Coal Exchange, were as follows: Cargo, 107,301 net tons; steamship fuel, 3,866 tons—a total of 111,167 net tons, compared with 363,225 tons in the preceding week. Hampton Roads dumpings during the week ended Dec. 10 totaled 337,558 net tons, as against 464,217 tons in the previous week.



**Estimates of Production**

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| Nov. 21 | 10,910,000 | 12,596,000 |
| Nov. 28 | 9,885,000 | 11,600,000 |
| Dec. 5 (*b*) | 10,831,000 | 12,768,000 |
| Daily average | 1,805,000 | 2,128,000 |
| Cal. yr. to date | (*c*) 443,981,000 | 480,679,000 |
| Daily av. to date | 1,556,000 | 1,679,000 |
| **ANTHRACITE** | | |
| Nov. 21 | 1,827,000 | 46,000 |
| Nov. 28 | 1,611,000 | 36,000 |
| Dec. 5 | 1,814,000 | 62,000 |
| Cal. yr. to date | (*c*) 84,172,000 | 61,945,000 |
| **BEEHIVE COKE** | | |
| Nov. 28 (*a*) | 160,000 | 293,000 |
| Dec. 5 (*b*) | 174,000 | 299,000 |
| Cal. yr. to date | (*c*) 8,865,000 | 9,656,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Consigned Coal Depresses Midwest Trade

Developments of the last week in the Midwest market show that operators have not yet learned their lesson on the subject of consigned coal. One company producing smokeless coal consigned enough of prepared sizes to Chicago to break the market to smithereens. When some of it was on demurrage it was unloaded to a wholesaler at $3 for lump, $3.20 for nut, and $3.50 for egg—and it was standard coal. Western Kentucky operators and West Virginia splint operators, as well as some in eastern Kentucky, did the same thing.

The market on domestic coals has been extremely unsatisfactory, due to mild weather and the high prices brought about by the last buying flurry. Operators have not been able to get enough business on a day to day basis to run their mines and have had either to fall back on old orders taken a month ago, ship coal on consignment or close their mines. Only a few closed their mines, but those few are reputed to be the best merchants in the game.

West Virginia splint domestic coals are offered freely on the basis of $2.50 for lump and $2 for egg. Eastern Kentucky coals can be had at $2.75 for lump in hoppers and $2 for egg in hoppers. Eastern Kentucky coals in flat-bottom or low-side cars are about 25c. higher. West Kentucky lump has been coming into Chicago on consignment as low as $1.75, and by lump is meant 1¼-in. steam lump but 6-in. shaker-screened boom-loaded domestic lump. Indiana domestic coals have been uniformly weak. The only outfits who are apparently holding their prices are the big operators in Franklin County and in southern Illinois.

Steam coals seem to be in fairly good demand, as producers are having no difficulty in disposing of what coal they have on hand from day to day. Prices are firm, but not enough to warrant the slightest increase. There was a flurry a week or so ago when some of the bigger industries purchased their December requirements, but this has subsided and the steam-coal market now is going along in an uneventful and steady way. It is anticipated that if it becomes much more difficult to move domestic coals there will be an increase in steam-coal prices.

Mild weather has shown its effect in the movement of coal from the Williamson, Franklin and Harrisburg fields. Lump seems to move easily, but egg is not moving freely and nut and the smaller sizes are blocking the tracks. Some mines report moving lump under pressure but everywhere there are "no bills," although the mines show fairly good working time. Railroad tonnage from shaft mines reported good. In the strip mines working time is good, with a ready market, although prices vary. Railroad tonnage from strip mines also is good. Duquoin and Jackson County mines are working four and five days a week and coal is hard to move, with "no bills" always on hand. Mt. Olive conditions show improvement. Railroad tonnage has eased off but steam

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| **Low-Volatile, Eastern** | Market Quoted | Dec. 15 1924 | Nov. 30 1925 | Dec. 7 1925 | Dec. 14 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $4.10 | $5.25 | $5.25 | *$4.00@$4.50* |
| Smokeless mine run | Columbus | 2.00 | 3.10 | 3.10 | *2.75@ 3.00* |
| Smokeless screenings | Columbus | 1.25 | 2.60 | 2.60 | 2.50@ 2.75 |
| Smokeless lump | Chicago | 3.85 | 5.00 | 4.50 | *3.25@ 4.00* |
| Smokeless mine run | Chicago | 1.85 | 2.50 | 2.35 | 2.25@ 2.50 |
| Smokeless lump | Cincinnati | 3.75 | 5.10 | 5.10 | *3.50@ 5.00* |
| Smokeless mine run | Cincinnati | 1.85 | 2.35 | 2.35 | 2.25@ 2.50 |
| Smokeless screenings | Cincinnati | 1.15 | 1.90 | 1.90 | *1.75@ 2.00* |
| *Smokeless mine run | Boston | 4.10 | 5.30 | 5.30 | *4.90@ 5.10* |
| Clearfield mine run | Boston | 1.95 | 1.95 | 1.85 | **1.75@ 2.10** |
| Cambria mine run | Boston | 2.30 | 2.25 | 2.15 | **2.00@ 2.40** |
| Somerset mine run | Boston | 2.15 | 2.10 | 2.00 | **1.85@ 2.25** |
| Pool 1 (Navy Standard) | New York | 2.80 | 2.95 | 2.95 | 2.75@ 3.15 |
| Pool 1 (Navy Standard) | Philadelphia | 2.70 | 2.95 | 2.95 | 2.80@ 3.10 |
| Pool 1 (Navy Standard) | Baltimore | 2.30 | 2.20 | 2.20 | 2.20@ 2.25 |
| Pool 9 (Super. Low Vol.) | New York | 2.05 | 2.30 | 2.30 | 2.15@ 2.50 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.30 | 2.30 | 2.20@ 2.45 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.70 | 2.00 | 2.00 | 2.00@ 2.05 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.80 | 2.00 | 2.05 | **1.90@ 2.25** |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.55 | 1.90 | 1.90 | 1.90@ 1.95 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.75 | 1.75 | **1.65@ 1.90** |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.90 | 1.90 | 1.85@ 2.00 |
| Pool 11 (Low Vol.) | Baltimore | 1.45 | 1.65 | 1.65 | 1.60@ 1.70 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.55 | 1.55 | **1.50@ 1.70** |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.60 | 1.60 | 1.55@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.65 | 1.65 | 1.65@ 1.70 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.85 | 2.85 | 2.75@ 3.00 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.35 | 2.35 | 2.25@ 2.50 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 2.15 | 2.05 | 2.00@ 2.10 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.20 | 1.45 | 1.55 | 1.50@ 1.60 |
| Kanawha lump | Columbus | 2.30 | 2.85 | 2.85 | *2.50@ 2.75* |
| Kanawha mine run | Columbus | 1.55 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings | Columbus | .90 | 1.20 | 1.20 | 1.15@ 1.25 |
| W. Va. lump | Cincinnati | 2.20 | 3.10 | 2.60 | **2.50@ 3.00** |
| W. Va. gas mine run | Cincinnati | 1.50 | 1.65 | 1.65 | *1.50@ 1.65* |
| W. Va. steam mine run | Cincinnati | 1.40 | 1.55 | 1.50 | 1.45@ 1.60 |
| W. Va. screenings | Cincinnati | .95 | 1.25 | 1.15 | *1.00@ 1.25* |
| Hocking lump | Columbus | 2.55 | 2.85 | 2.85 | *2.50@ 2.75* |
| Hocking mine run | Columbus | 1.60 | 1.65 | 1.80 | 1.65@ 2.00 |
| Hocking screenings | Columbus | .80 | 1.25 | 1.35 | *1.20@ 1.30* |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.50 | 2.35 | 1.95@ 2.75 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.85 | 1.85 | 1.80@ 1.90 |
| Pitts. No. 8 screenings | Cleveland | 1.35 | 1.45 | 1.55 | *1.40@ 1.50* |

| **Midwest** | Market Quoted | Dec. 15 1924 | Nov. 30 1925 | Dec. 7 1925 | Dec. 14 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $3.25 | $3.50 | $3.50 | $3.50 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.35 | 2.50 | 2.35@ 2.65 |
| Franklin, Ill. screenings | Chicago | 1.60 | 1.60 | 1.85 | 1.75@ 2.00 |
| Central, Ill. lump | Chicago | 2.85 | 3.00 | 3.00 | 3.00 |
| Central, Ill. mine run | Chicago | 2.20 | 2.30 | 2.30 | 2.25@ 2.35 |
| Central, Ill. screenings | Chicago | 1.65 | 1.40 | 1.40 | 1.35@ 1.50 |
| Ind. 4th Vein lump | Chicago | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | 2.25@ 2.50 |
| Ind. 4th Vein screenings | Chicago | 1.55 | 1.60 | 1.85 | 1.75@ 2.00 |
| Ind. 5th Vein lump | Chicago | 2.75 | 2.35 | 2.50 | 2.35@ 2.65 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.30 | 1.40 | 1.40 | 1.35@ 1.50 |
| Mt. Olive lump | St. Louis | 3.00 | 2.85 | 2.85 | 2.75@ 3.00 |
| Mt. Olive mine run | St. Louis | 2.35 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.10 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.75 | 2.40 | 2.40 | 2.35@ 2.50 |
| Standard mine run | St. Louis | 1.95 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.05 | .85 | .85 | .75@ 1.00 |
| West Ky. block | Louisville | 2.35 | 2.10 | 2.10 | 2.00@ 2.25 |
| West Ky. mine run | Louisville | 1.55 | 1.35 | 1.35 | 1.25@ 1.50 |
| West Ky. screenings | Louisville | 1.10 | .80 | .85 | **.80@ 1.10** |
| West Ky. block | Chicago | 2.35 | 2.35 | 2.05 | 1.85@ 2.25 |
| West Ky. mine run | Chicago | 1.55 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 2.85 | 2.35 | 2.75 | 2.50@ 3.00 |
| Big Seam mine run | Birmingham | 1.60 | 2.00 | 2.10 | 2.00@ 2.25 |
| Big Seam (washed) | Birmingham | 1.85 | 2.10 | 2.30 | 2.10@ 2.50 |
| S. E. Ky. block | Chicago | 2.60 | 3.60 | 3.25 | 2.75@ 3.75 |
| S. E. Ky. mine run | Chicago | 1.50 | 2.15 | 2.15 | 2.00@ 2.35 |
| S. E. Ky. block | Louisville | 2.60 | 3.50 | 3.25 | 3.00@ 3.50 |
| S. E. Ky. mine run | Louisville | 1.40 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Louisville | .95 | 1.40 | 1.35 | *1.10@ 1.40* |
| S. E. Ky. block | Cincinnati | 2.35 | 3.10 | 3.25 | *2.75@ 3.00* |
| S. E. Ky. mine run | Cincinnati | 1.50 | 1.60 | 1.60 | *1.45@ 1.75* |
| S. E. Ky. screenings | Cincinnati | .90 | 1.25 | 1.20 | *.90@ 1.35* |
| Kansas lump | Kansas City | 4.75 | 5.00 | 5.00 | 5.00 |
| Kansas mine run | Kansas City | 3.00 | 3.10 | 3.25 | *3.00@ 3.25* |
| Kansas screenings | Kansas City | 2.30 | 2.30 | 2.30 | 2.25@ 2.35 |

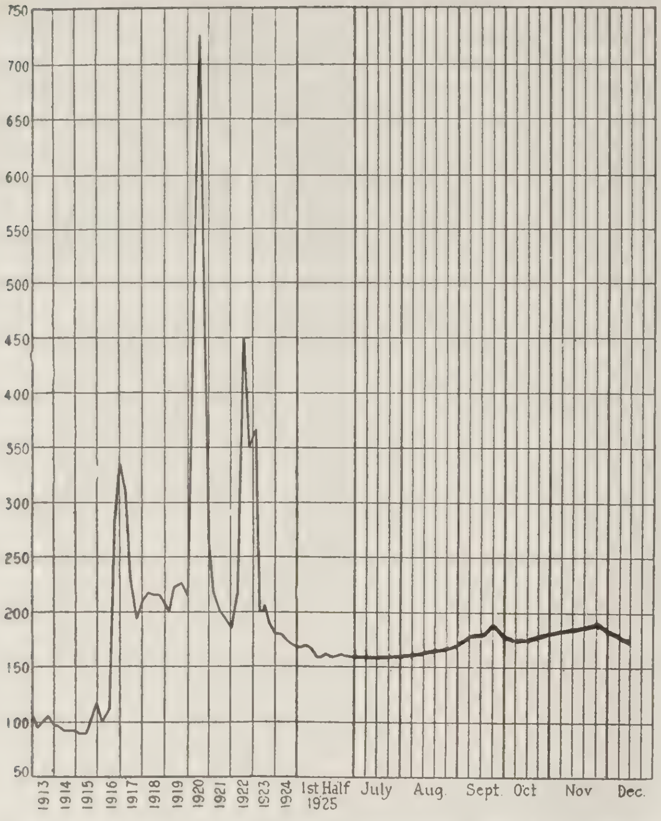
* Gross tons, f.o.b. vessel, Hampton Roads.

† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Dec. 15, 1924 | | Dec. 7, 1925 | | Dec. 14, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | | $8.00@$9.25 | | | | |
| Broken | Philadelphia | 2.39 | | 9.15 | | | | |
| Egg | New York | 2.34 | $8.25@$8.75 | 8.75@ 9.25 | | | | |
| Egg | Philadelphia | 2.39 | 9.45@ 9.75 | 8.80@ 9.25 | | | | |
| Egg | Chicago* | 5.06 | 8.17@ 8.40 | 8.08 | $9.50@ 10.00 | $8.03@ $8.25 | $9.50@ 10.00 | $8.03@ $8.25 |
| Stove | New York | 2.34 | 10.00@ 10.50 | 9.00@ 9.50 | | | | |
| Stove | Philadelphia | 2.39 | 10.10@ 10.75 | 9.15@ 9.50 | | | | |
| Stove | Chicago* | 5.06 | 8.80@ 9.00 | 8.53@ 8.65 | 10.00@ 11.00 | 8.48@ 8.80 | 10.00@ 11.00 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 10.00@ 10.50 | 8.75@ 9.40 | | | | |
| Chestnut | Philadelphia | 2.39 | 10.00@ 10.75 | 9.25@ 9.40 | | | | |
| Chestnut | Chicago* | 5.06 | 8.61@ 9.00 | 8.40@ 8.41 | 10.00@ 11.00 | 8.50@ 8.75 | 10.00@ 11.00 | 8.50@ 8.75 |
| Pea | New York | 2.22 | 4.75@ 5.50 | 5.50@ 6.00 | | | | |
| Pea | Philadelphia | 2.14 | 5.75@ 6.00 | 6.00 | | | | |
| Pea | Chicago* | 4.79 | 5.36@ 5.75 | 5.36@ 5.95 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 |
| Buckwheat No. 1 | New York | 2.22 | 2.00@ 2.50 | 3.00@ 3.15 | | | | |
| Buckwheat No. 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | | 2.50@ 3.00 | | 2.50@ 3.00 |
| Rice | New York | 2.22 | 1.75@ 2.00 | 2.00@ 2.25 | | | | |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | | | | |
| Barley | New York | 2.22 | 1.25@ 1.50 | 1.50 | | | | |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | | | | |
| Birdseye | New York | 2.22 | 1.40@ 1.60 | 1.50 | | | | |

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Dec. 14 | Dec. 7 | Nov. 30 | Dec. 15 |
| Index | 182 | 184 | 187 | 169 |
| Weighted average price | $2.20 | $2.22 | $2.26 | $2.04 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1924, as 100, after the manner adopted in the report on "Prices of Coal and Coke: 1913-1918," published by the Geological Survey and the War Industries Board.

demand keeps up for the northern market and domestic tonnage is fair. Reports have it that poor preparation has seriously affected the market for this coal. In the Standard field there is no change. Coal is sold at about cost of production. There are always "no bills" on hand and there seems to be a surplusage of coal over demand. Mines are working three to four and sometimes five days a week. Railroad tonnage is reported good. Cars have been plentiful in the past week and the movement of coal better than for six weeks on the part of the roads. Prices are unchanged.

At St. Louis warm weather eased off the demand for domestic locally although there has been a little moving, principally of the cheaper grades. High-grade Illinois has been moving under pressure, with very little call for smokeless or anthracite, though coke is doing fairly well. Country domestic is fairly good, for the cheaper coals principally, with a heavy volume of western Kentucky coming in west of the river and eastern Kentucky coming in east of the river. Country steam is easy.

### Softness Appears in Kentucky

Practically all coals are weaker in Kentucky as a result of very mild weather, good car supply, heavy production, lack of demand, and shading on the part of some jobbers and producers in an effort to force retailers to take on more coal. There doesn't appear to be so much distress fuel or "no bill" cars on track in eastern Kentucky but some lots of fifty to a hundred cars have been offered at considerably under the markets.

Movement into various districts has been good, but as production in all sections is heavy, many mines in eastern and western Kentucky are keen for business. Though prices in western Kentucky are being fairly well maintained in so far as quotations are concerned, some shading is being done to move "no bills," and it is reported that tonnage has eased up somewhat. This is reflected by stronger markets on screenings, which are in demand, with production curtailed due to lack of movement on prepared.

The eastern Kentucky market may be quoting some block coal at above $3.50, but the market to the trade is $3@$3.50 through the jobbers. Lump is $2.75@$3; egg, $2.25@$2.75; nut, $2@$2.50; mine-run, $1.50@$1.75; screenings, $1.10@$1.40, the latter being considerably weaker. Western Kentucky block is $2@$2.25; lump, $1.75@$2; egg, $1.60@$1.85; nut, $1.35@$1.50; mine-run, $1.25@$1.50, and screenings stiffer, at 80c.@$1.10.

### Northeast Trade Comparatively Good

While the movement of coal from the docks at Duluth and Superior has fallen off in the last ten days as compared with the peak period of last month, operators report a good volume of business. Industrial demand is satisfactory, with shipments going over a wider territory than for several seasons, trade in southern Minnesota that had been supplied from Illinois and Indiana mines having been regained since the upward readjustments in freight rates.

Demand from the Minnesota iron-range district has slowed down since the conclusion of ore shipments for the season. Retailers have been ordering small tonnages at a time, but with the necessity of more frequent buying, the trade is reaching good proportions.

Shipments from the docks during November were 27,411 cars, compared with 31,685 cars in October and 28,765 cars in November last year. Shipments in December have been lighter than in November.

Receipts from Lake Erie docks in November totaled 976,978 tons, bringing the aggregate for the season to Nov. 30 to 8,665,616 tons, an increase of 1,214,163 tons as compared with the same period last year. Last month 5,400 tons of anthracite was brought over from Fort William and delivered to a briquetting plant at Superior, making hard-coal receipts for the season 796,248 tons, a falling off of 474,457 tons as compared with last season.

Supplies of Pocahontas and other smokeless coals, as well as domestic coke and briquets will be available in good tonnages as substitutes for anthracite consumers. Figuring that difficulty may be experienced in supplying prepared sizes of Pocahontas by the first week in February, dealers have been trying to induce consumers to accept mine-run Pocahontas. Progress has been made in the campaign, with the wide spread in quotations a consideration. Quotations are steady for both anthracite and bituminous coals, no changes having been reported lately. Pocahontas prepared sizes are $8.50@$9; mine-run, $5.25@$5.50, and screenings, $4.25.

Milwaukee dock managers report business rather quiet at present, but they expect betterment with the beginning of the new year. Prices continue unchanged. The last cargo of the season of 1925 has arrived from the lower lakes, bringing the December receipts of bituminous coal up to 128,957 tons. No anthracite has been received since Sept. 15.

### Lump Backs Up in Kansas

Continued mild weather has reduced the demand for coal in the Southwest to the point where sixty or seventy cars of lump are standing on Kansas tracks and some mines in Arkansas are idle part of the time. Kansas operators have maintained full-time production, with all sizes other than lump moving as produced. Only a few days of cold weather would be required to pile up orders again.

In Utah the demand for slack is a little better than the supply. Slack and domestic lump are moving faster now than other grades; nut and lump are said to be slowing up. The market as a whole might be described as fair. Weather conditions have not been entirely satisfactory from the standpoint of the coal trade thus far, except for one or two days. Industrial demand is about normal for the season, or a little better. Retailers say business is better than for several weeks. The car situation is good and "no bills" on tracks are kept at a minimum. Prices remain steady.

Continued warm weather, particularly in Nebraska and Kansas, has caused a sudden slump in orders for future delivery of Colorado domestic and steam coal. Operations of the mines has been reduced to about 85 per cent of capacity. No cancellations are coming in, but orders for future delivery are being held in abeyance pending further advices.

### Realignment Unsettles Cincinnati Market

Readjustment of smokeless-coal prices almost amounted to a rout at Cincinnati last week. Under the influence of small accumulations, lack of buying interest and the usual seasonal disinterestedness the spot market on lump slipped within ten days from $5@$5.25 to $3.50@$3.75. These lower prices were on "spot," "distress" or "no-bill" cars, however, as the old line dealers who sold on contract for the month at $5 and $5.25 are billing coal to their customers at the old level. Egg fared a little better, "spot" holding at $3.75@$4 for Western delivery. Mine-run was not greatly affected, maintaining its range of $2.25@$2.50. Screenings, through the fact that byproduct takers are careful on coke sales and require less, is soft at $1.75@$2.

In high-volatile there has been a tendency to softness that cannot be actually reflected through quotations. After West Virginia offerings dipped to $2.50 for low-grade lump there was a bit of a recovery with the market holding fairly well at $2.75, but late in the week it did not take much bargaining to get $2.50 6- and 4-in. lump once more. Southeastern Kentucky producers tried to hold their market at $3, a drop of 25c. In most instances they were successful, though late week prices showed some quotations going out at $2.75. Egg prices were clipped off to a general range of $2@$2.25. Mine-run held firmer, what reductions there were coming on gas, byproduct and the higher gradings. The slip here generally was about 10c., though the low grades were fairly well held around $1.45@$1.50. Screenings were sagging. Low-grade Kentucky hit bottom around 90c. to the trade. About the lowest quotations on West Virginias were $1. Higher priced slack, however, made no rapid descent so that the general average was maintained at $1.10@$1.15.

There has been no change in the retail situation.

High temperatures have had a weakening effect on the domestic trade in Columbus and central Ohio. Retailers are buying only in small lots, as their stocks are ample to take care of the reduced demand. The public is asking for splints and high-grade Kentucky product in preference to Pocahontas and other smokeless varieties because of the wide spread between the prices. Ohio grades are moving fairly well when the warm weather is taken into consideration. There is only a small amount of free coal on the Columbus market and further reductions in prices are not expected at this time. Demurrage coal is not reported in central Ohio, although there is a considerable tonnage in Detroit and Toledo.

The steam demand continues irregular and spotty, prices having suffered to a certain extent. A few short-time contracts, extending for 60 to 90 days, have been closed recently.

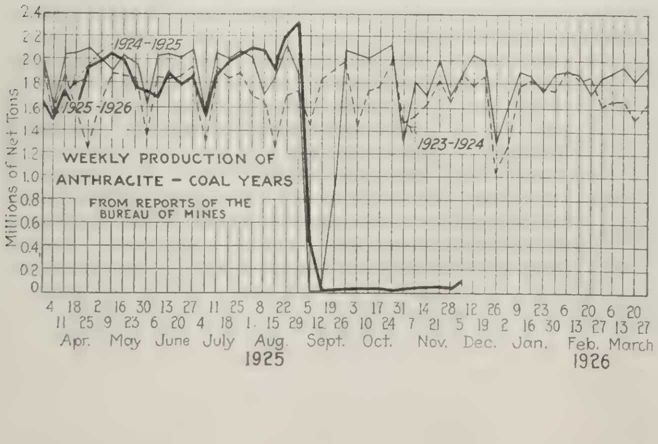
Production in the southern Ohio field is about 30 per cent of capacity.

There is little if any change in the eastern Ohio situation, except that spot prices of slack and nut-and-slack have eased off, being 10 to 15c. per ton less than those prevailing a week ago, and the quantity available is easily meeting the demand.

In the steam trade buyers are slow to make purchases other than for current needs.

Retail yards are pretty well loaded up, as domestic buying has not been heavy since the scare of some six or eight weeks ago. Pocahontas lump is quoted at $3@$3.50 f.o.b. mines, today, as compared with $5@$6 six to eight weeks ago. Other West Virginia and eastern Kentucky domestic lump is now $2.50@$3, f.o.b. mines.

During the week ended Dec. 5 eastern Ohio production was 339,000 tons, or about 48 per cent of potential capacity. This was 42,000 tons over the output of Thanksgiving week and 70,000 tons over the corresponding week a year ago.



### Pittsburgh Trade "Relatively Poor"

The Pittsburgh market continues in relatively poor condition. Buying of domestic coal by retail yards has, if anything, decreased. Industrial consumption continues heavy, but buyers are very reserved about making commitments.

Open-market demand for gas coal is quite limited, as has been found by some Connellsville operators seeking a market for a little surplus. The regular consumers seem to be covered in large part by contracts running to April 1. Slack continues firm at recently advanced prices, indicating limited shipments of lump.

Prices for Pittsburgh district coal are only a trifle above the level of last summer, when they were as low as they could possibly go.

The aspect of the Buffalo coal situation changes pretty often, but it never seems to benefit the straight bituminous situation. That is as dull as ever and it promises to remain so till the strike is settled, when it is expected that there will be a period of no demand to speak of. Sometimes one sort or another gets a trifle scarce, but the prices do not vary visibly.

### New England Market Still Slipping

In New England the market for steam coal reflects a further decline. Prices are off even from the levels of a week ago, and there is only scattering inquiry for spot bituminous of any character. The smokeless agencies at the Virginia terminals as well as rehandling factors at this end are striving to place a volume consistent with current mining, but further curtailment will have to be resorted to if spot prices are not to drop to a still lower range. Notwithstanding special rate dispensations the flow of prepared sizes north from the Pocahontas and New River fields is by no means as heavy as predicted; retail dealers have taken on about all of this fuel they can conveniently absorb and the consumer is being advised on every hand to confine his requirements to mine-run. Even public fuel committees are now saying that a mistake was made in dwelling so much on the advantages of lump, egg and chestnut from the smokeless districts. Meanwhile the low-volatile producers in Pennsylvania enjoying the Clearfield rate are keeping tight hold of the market they developed before the through rates from Pocahontas and New River were ordered.

Current prices on board vessels at Hampton Roads for No. 1 navy standard coals are wobbling around $5 per gross ton, with occasional sales at materially less than that figure. No possible buyer is allowed to escape, and the trade is being assured that mine-run is now carrying a higher percentage of coarse coal than was the case a few weeks ago. Shipments coastwise on contract are about normal, although water freights have eased somewhat under the influence of better supply.

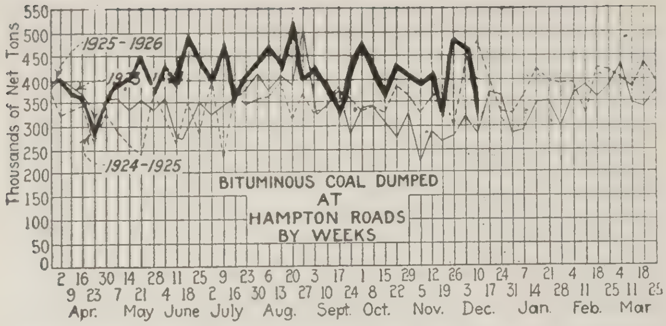
For inland delivery prices on cars at Boston and Providence have slumped similarly, the former level of $6.50 having been shaded 25.@40c. the past few days. At Providence there seems to be an especially ragged market.

Continued mild weather is the apparent reason for so little anxiety over the depleted stocks of anthracite. The public mind is resting in security, as far as this territory is concerned. The small proportion of householders who have thus far been forced to buy substitutes are mild in their comment and seem quite reconciled. As yet there is nothing approaching a panic and no indication of an acute shortage of fuel later on.

### Trade Steady at New York

New York is using soft coals in larger quantities in place of anthracite. Although there has been a slight drop in demand for mine-run coals, buying is steady and the urging of the State Fuel Commission that they be used instead of hard coal seems to be bearing fruit. Demand is much less than it should be, mostly due to weather conditions, but this is expected to be speedily overcome with the first stretch of low temperature. Meantime dealers are buying carefully and in small quantities.

Shipments of New River and Pocahontas sized coals to



Long Island have been greater than the demand, with the result that distress coal has been let go at less than current market quotations. There has been some rejections of shipments because of indifferent preparation. Quotations for egg and nut sizes range $4.75@$5.50.

Screened coals from central Pennsylvania are quoted at $3.50@$5, according to quality and preparation. Broad Top egg and nut are $6.35@$7.

Purchases are in good volume at Philadelphia, but there is no particular anxiety on the part of the consumer about getting fuel. Business in sized coals has been disappointing during the past two weeks, high volatiles from western Pennsylvania and northern West Virginia having declined from $5 to almost half that price, with no business. Low volatile is a bit better, but even these have declined sharply. A fair volume of Pocahontas and New River sizes is coming in, but coals that sold for $7 a short time ago are now plentiful at $5 and even 50c. lower.

Rail fuel continues in good volume, and inquiries for good tonnages are abroad. Tidewater trade is extremely light. Bunkers are fair, some interests reporting a slight increase. Prices, though not particularly strong, are well maintained.

The fuel trade at Baltimore has been quiet in the last two weeks. While best grade coals are holding fairly well, lower grades in many cases can be bought considerably off the so-called average quotations. The flurry that attended sales of prepared sizes of high volatile coals, used as substitutes for anthracite, has come to an end. Such coals, which in October and part of November brought as high as $5.50 for egg, are now freely quoted at $2.15@$2.25. Coals for industrial use are, if anything, a little weaker than a week or ten days ago. Pool 71 continues about on the same level, but high grade Pool 9, which ten days ago brought $2.05@$2.10, is offering at $2@$2.05. No exports are reported.

Production in the Alabama field is now being speeded up to the limit to fill the heavy requirements of the trade for current consumption and holiday storage. All mines are operating full time with maximum production. Inquiry is good for all grades of steam fuel and coking coals are especially strong and the supply of the favorite qualities rather limited. Industrial consumption is unusually large, and the railroads and utilities are also taking abnormally large quantities. The bunker trade is still very active at the Southern ports, the mines usually supplying this class of business being pressed to fill requirements along with their other heavy business for washed coal.

Domestic coal is still moving very well and most operations have orders to carry them over the holidays. Inquiry is continuing good, but due to lack of protracted cold weather, consumption is not especially heavy and demand for prompt movement is not quite so insistent at it has been.

Quotations are without any material change from a week ago, the strong position of the market maintaining a firm schedule of prices.

Carriers in the Birmingham district have maintained a fair car supply for all operations of late and there has been little if any loss of time on this account. The district is now producing around 425,000 tons per week.

### Hard-Coal Trade Now a Waiting Game

With the exception of some cargoes of pea and No. 1 buckwheat, with occasional tonnages of rice, anthracite is practically out of the New York market. Some boats loaded with pea and buckwheat are afloat in the harbor, but the tonnage is not considered large. Buyers also are able to pick up reclaimed buckwheat at various prices. Some retailers continue to offer egg, stove and chestnut at around $23.50 per ton, but this supply is growing smaller.

Coke is gaining in popularity and with few exceptions retailers report a growing demand for it. Dealers are not increasing their yard supplies to any great extent. Like their customers, they are playing a waiting game and are buying according to their needs. Coke in stove and egg sizes was quoted at tidewater last week at $10@$10.50 alongside.

Pea continues to be quoted at $16@$16.50 alongside and No. 1 buckwheat at $8@$8.75 alongside.

At Philadelphia retail coal men are gradually coming back for fuel since the recent peace conferences proved abortive. Buying had been almost eliminated by the first conference and it is still comparatively dull, owing to mild weather. The price of byproduct coke has once more declined and it can now be purchased at $10 and under delivered on tracks in the city. While there is no real activity in Connellsville coke, there is an improvement over last week with prices ranging $5.50@$6.50, depending on sizing, etc.

Baltimore looks on the anthracite strike with indifference. Dealers state that prepared sizes of soft coal are accepted as substitutes without particular complaint, and that the public is apparently getting pretty well used to burning soft coal. Not a few dealers believe that many of their customers will not return to hard coal, even at prices existing last fall, as long as they can get prepared sizes of bituminous at considerably lower prices.

At Buffalo the fine sizes of anthracite are about gone. It is reported that in Canada, where more anthracite and more substitutes were bought than in Buffalo, the straight anthracite held by the dealers is about gone. There is no small amount in cellars yet, but plenty of the consumers, both here and there, will begin to run out now and they must buy something. The smokeless producers and dealers say they can meet the issue. Coke brings $12 at the curb and is not as plentiful as it was, when it used to sell as low as $9, but smokeless can be had yet for $6.50.

### Connellsville Coke Market Slightly Weaker

In the Connellsville coke market demand from the East for prepared coke has undergone little change in the past few weeks; it absorbs the tonnage offered fairly well at fair differentials above run-of-oven coke—generally from $1 to $1.50, depending on character of preparation.

Just what proportion of the total of 48-hour coke produced by merchant ovens is prepared cannot be estimated, but there is quite a tonnage left of run-of-oven coke after contract requirements have been met, and this coke has been pressing on the market for weeks, forcing prices down and down, there being approximately a 50c. decline in the past week.

This surplus coke has now also exerted a back-pressure on production, merchant-oven output last week as reported by the *Courier* being the lowest in six weeks, although the percentage in decline was small. Some ovens banked, others have been drawing less times per week.

In blast furnace sized lots coke is now available at $3.50, but by no means from all operators. Up to $3.75 probably is obtained on small lots to miscellaneous consumers. The market is quotable at $3.50@$3.75, against $4 a week ago, but then the market was decidedly weak at $4, which was largely a nominal quotation.

It is understood that blast furnaces have been offered first-quarter contracts at as low as $4.25, but apparently this does not interest them. They find little demand for pig iron, and in any event they would presumably do better to buy for January only, since whatever demand there may be from the East probably will be off for February and March.

Spot foundry coke has weakened in sympathy with furnace coke and is now quotable at $4.75@$5.25.

### Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Nov. 28, 1925 | 923,213 | 172,279 |
| Previous week | 1,057,674 | 189,182 |
| Week ended Nov. 29, 1924 | 879,131 | 172,615 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Nov. 30, 1925 | 136,796 | 43,658 | ........ | ....... |
| Nov. 22, 1925 | 124,818 | 37,007 | ........ | ....... |
| Nov. 30, 1924 | 183,914 | 82,819 | ........ | ....... |

# Foreign Market And Export News

## British Shipments and Bookings Gain Steadily; Production on Upgrade

Increasing animation is apparent in the British coal market. The improvement has made further headway in the past week, and with steady bookings running well ahead, shipments are on an expanding scale. Chartering is brisk—an indication that activity will continue—while production is on the upgrade, with more regular work at the pits. Contractors are making early arrangements to ship the unexpired portion of yearly contracts and are showing readiness to book up to next April, beyond which points both buyers and sellers are reluctant to operate. Several parcels of second Admiralty large have been sold over the next five months, but big business on forward account is still lacking. Despite the fall in the franc, inquiries from France are improving, due to activity in the metal trades and the offering of extended credits by exporters. Italy is buying on an improved scale and the depots are active.

The prompt position in the local coal market at Newcastle-on-Tyne has been comparatively easy, and buyers with prompt tonnage have been able to obtain coals at prices much below current quotations. This has been due to the scarcity of tonnage since the bad weather set in. Forward business, however, is still indicating firm prices, and contract business shows that buyers are less averse to paying the quotations, especially for gas coals. Coking coals have enjoyed a very good demand, especially for home furnaces, and the cokes are all very firm, especially gas coke, which is better than at any time during the past year.

Output by British collieries during the week ended Nov. 28, according to a special cable to *Coal Age*, totaled 5,185,000 gross tons, compared with 4,870,000 tons in the preceding week.

## Trade Takes Quiet Turn At Hampton Roads

Comparatively little demand for coal was in evidence last week at Hampton Roads, warm weather apparently contributing to the laxity of the market. Foreign business was holding its own, but trade with New England was somewhat below normal. Domestic trade locally was holding up well, with continued high prices for prepared soft coal, and with the supply of anthracite diminishing rapidly. The tone of the market generally was quiet.

## Better Industrial and Domestic Demand in French Market

In the French coal market there has been a slight improvement in demand for industrial coals and a more active call by consumers of domestic coals.

British offers of flaming coals d.c.b. in Paris have been made at 7 fr. less than French prices, though the pound is at 124@125 fr. and over. The insistence of Belgium producers of sized coals that they be paid in Belgian francs, which arrangement was to become effective Dec. 1, will have a drastic effect on prices. Discussions between the German Kohlensyndikat and the French Government are not expected to reach a decision before the end of the year.

Deliveries of indemnity fuels from the Ruhr during the first fourteen days of November included 20,800 tons of coal, 9,100 tons of coke and 10,900 tons of lignite briquets. During the first twenty-four days of November the O. R. C. A. received from the Ruhr 166,564 tons of coke. Prices are unchanged.

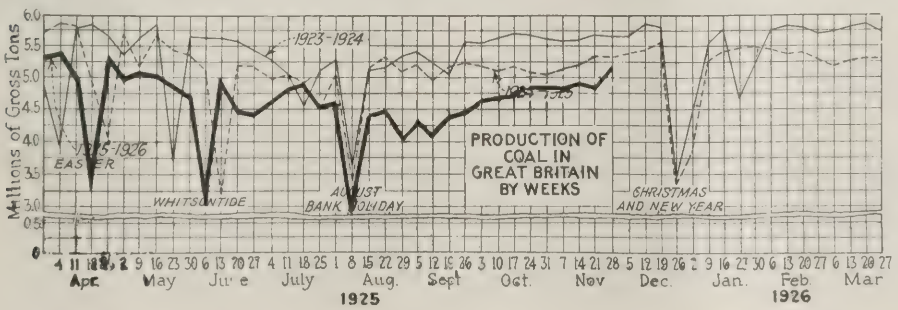
## Belgian Outlook Unpromising

There is little change in the situation in the Belgian industrial coal market; demand remains moderate with stocks practically at the old level and output restricted. Prospects are not very encouraging, although the iron works of the Charleroi district probably will resume work soon.

Foreign competition is keener than ever and prices are steadily declining. The situation is most serious in the Borinage, the other districts reflecting a slightly improving tendency.

With the termination of the period of the 5 per cent increase on wages a good many coal owners seem to have made up their minds to refuse to pay it any longer, because, in spite of the measures taken by the Belgian Government, their commercial situation has not in the least improved. A complete break between the owners and their men is not expected, however, as it is likely that a new formula, based on the fluctuations of coal prices, will be considered.

No fresh development is noted as regards briquets, ovoids and coke, except an increase of stocks.



### U. S. Fuel Imports in October

(In Gross Tons)

| | 1924 | 1925 |
|---|---|---|
| Anthracite | 6,289 | 15,391 |
| Bituminous coal, shale, lignite | 9,626 | 13,840 |
| Bituminous coal and slack | 21,882 | 51,979 |
| From: | | |
| United Kingdom | 900 | 7,722 |
| Canada | 21,882 | 55,305 |
| Japan | ...... | 230 |
| Australia | 8,702 | 2,502 |
| Other countries | 24 | 60 |
| Coke | 6,091 | 12,461 |

### Export Clearances, Week Ended Dec. 12, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Cuba: | |
| Br. Str. Pentraeth, for Havana | 3,021 |
| Nor. Str. Certo, for Havana | 3,272 |
| For Brazil: | |
| Br. Str. Homecliff, for Rio de Janiero | 6,255 |
| Br. Str. Quebec City, for Santos | 6,701 |
| Br. Str. Campus, for Rio de Janeiro | 5,164 |
| For Peru: | |
| Br. Str. Bellailsa, for Callao | 6,313 |
| For Argentina: | |
| Ital. Str. Maria Enrica, for Buenos Aires | 9,776 |
| For French West Indies: | |
| Jap. Str. Egypt Maru, for Fort de France | 7,275 |
| For West Africa: | |
| Ital. Str. Nasco, for Dakar | 7,154 |
| For Dutch West Indies: | |
| Br. Str. Nile, for Curacao | 8,185 |
| For Mexico: | |
| Nor. Str. Wagland, for Vera Cruz | 2,861 |

### Hampton Roads Coal Dumpings*

(In Gross Tons)

| | Dec. 3 | Dec. 10 |
|---|---|---|
| N. & W. Piers, Lamberts Pt.: | | |
| Tons dumped for week | 168,326 | 137,574 |
| Virginian Piers, Sewalls Pt.: | | |
| Tons dumped for week | 101,852 | 56,321 |
| C. & O. Piers, Newport News: | | |
| Tons dumped for week | 144,302 | 107,496 |

*Data on cars on hand, tonnage on hand and tonnage waiting withheld due to shippers' protest.

### Pier and Bunker Prices, Gross Tons

PIERS

| | Dec. 5 | Dec. 12† |
|---|---|---|
| Pool 1, New York | $5.75@$6.00 | $5.75@$6.00 |
| Pool 9, New York | 5.00@ 5.30 | **5.10@ 5.30** |
| Pool 10, New York | 4.75@ 5.10 | **4.80@ 5.15** |
| Pool 11, New York | 4.55@ 4.70 | **4.55@ 4.75** |
| Pool 9, Philadelphia | 5.05@ 5.30 | 5.05@ 5.30 |
| Pool 10, Philadelphia | 4.80@ 5.10 | 4.80@ 5.10 |
| Pool 11, Philadelphia | 4.50@ 4.75 | 4.50@ 4.75 |
| Pool 1, Hamp. Roads | 4.90 | **5.00@ 5.25** |
| Pool 2, Hamp. Roads | 4.75@ 4.90 | 4.75@ 4.90 |
| Pools 5-6-7, Hamp. Rds. | 4.75 | *4.50* |

BUNKERS

| | Dec. 5 | Dec. 12† |
|---|---|---|
| Pool 1, New York | $6.00@$6.25 | $6.00@$6.25 |
| Pool 9, New York | 5.25@ 5.55 | **5.35@ 5.55** |
| Pool 10, New York | 5.00@ 5.25 | **5.05@ 5.40** |
| Pool 11, New York | 4.80@ 4.95 | **4.80@ 5.00** |
| Pool 9, Philadelphia | 5.30@ 5.55 | 5.30@ 5.55 |
| Pool 10, Philadelphia | 5.10@ 5.35 | 5.10@ 5.35 |
| Pool 11, Philadelphia | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 1, Hamp. Roads | 5.00 | **5.00@ 5.25** |
| Pool 2, Hamp. Roads | 4.75@ 4.90 | 4.75@ 4.90 |
| Pools 5-6-7, Hamp. Rds. | 4.75 | *4.60* |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Dec. 5 | Dec. 12† |
|---|---|---|
| Admiralty, large | 23s.@23s.6d. | *21s.@22s.6d.* |
| Steam smalls | 11s.6d. | **13s.6d.** |
| Newcastle: | | |
| Best steams | 15s. | **17s.6d.@18s.** |
| Best gas | 16s.3d.@17s.9d. | *16s.3d.* |
| Best bunkers | 15s.@16s. | *15s.* |

† Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

Statistics compiled by the Alabama Mining Institute indicate a total coal production for 1925 in the Alabama field of between 19,750,000 and 20,000,000 net tons. The output for the first eleven months of this year, according to these estimated figures, totaled 18,053,000 against 17,984,600 tons for the same period of last year. With a strong market now prevailing it is highly probable that the 20,000,000 figure will be reached. Output in 1924 was 19,615,931 tons. No records are kept on coke production from month to month but the output for the year probably will be around 4,750,000 tons.

## ARKANSAS

U. S. marshals have been ordered posted at the mine of the Bernice Anthracite Coal Co., near Russellville, to protect the property of the company from striking members of District No. 21, United Mine Workers, and their sympathizers. U. S. District Judge Jacob Trieber several weeks ago issued a temporary injunction restraining the strikers and their sympathizers from interfering with operation of the mines of the company, which is operating under the wage scale of 1917. One of the charges in the petition for the appointment of the federal guards was that the peace officers of Russellville have demanded $57.60 a day for their services.

## COLORADO

Wallace D. Bowie, of Delta County, has been appointed by Governor Morley as a member of the state board of examiners of coal mines, to take office at once. Mr. Bowie will serve until the third Tuesday of January, 1929, and will take the place on the board left vacant by the recent resignation of Thomas Allen.

The Kemmerer Coal Co. has been given a deed by P. J. Quealey for the property known as the International Fuel Co. and other coal lands with the exception of the Wadge vein, containing about 30 acres. The consideration was stated as $52,297. The Kemmerer Coal Co. later conveyed the property to the Uintah Improvement Co.

R. C. Graham recently leased the Black Diamond coal mine from J. J. Donnelly, owner of this coal property. This is one of the best mines in the Meeker section and has always been a big producer. Mr. Graham has complied with the new mining law requirements and the mine is now producing coal.

## ILLINOIS

Confirmation of the sale of the stock of the Southern Gem Coal Corp. was postponed in the U. S. District Court at East St. Louis, Dec. 8. Bruce A. Campbell, counsel for creditors of the company, interposed a motion asking for the continuance. Nelson Layman, of Duquoin, representing the receivers, stated that delay in confirmation of the sale might cause deterioration of the market value of the property. On Nov. 27, at Benton, W. A. Brewerton, of the Brewerton Coal Co., purchased the stock of the Southern Gem company for $100,000 cash and agreed to assume claims totaling $1,650,000.

Headquarters of the Illinois Mine Workers at Springfield announced that the Illinois convention called for March, 1926, had been postponed until March, 1927, by a vote of the membership. Only 12 locals with a membership of 1,693 members opposed the postponement; 78 locals with 30,655 members voted specific approval and 238 locals gave tacit consent by taking no action at all.

The Madison Coal Co. will electrify mine No. 6, at Auburn.

The mine commonly known as the "Scratch Back" mine, at Carterville, owned by the Carterville Black Diamond Coal Co., recently suffered a severe loss when the entire top works was destroyed by fire.

The Majestic Mine, at Duquoin, owned by the Crerar-Clinch interests of Chicago, has made a record for steady production, having worked continuously since Oct. 1.

## INDIANA

The coal mining industry in Indiana is looking better, according to Albert Dally, assistant inspector of mines and mining of the state. Four mines in the Boonville district that had been idle for more than two years have reopened recently, and two mines in the Terre Haute district have resumed.

Recognition of services rendered at the time of the Sullivan mine disaster, Feb. 20, in which 51 miners lost their lives, has been accorded the Sullivan Post of the American Legion in the shape of a lithographed citation from the National Legion organization. Legion members turned out in force at the time of the tragedy and drove ambulances, directed traffic and assisted in rescue work.

## KANSAS

No. 2 Katy mine, near South Radley, leased by James Price and Joe Lafayette from the Mayer Coal Co., is being cleaned up, and mining will start soon with from 75 to 100 men employed.

Following an explosion, Dec. 2, in the Wilbert & Schrieb mine in the southeastern Kansas field, James Sherwood, state mine inspector, issued a warning, Dec. 4, to all miners of the district to observe safety precautions more closely. The inspector found the Wilbert & Schrieb explosion was the result of using too much powder, tamped with coal drillings, and recommended the discharge of two miners. "Shots must be tamped with clay or some non-combustible material," he warned. "Mines also must be kept properly sprinkled or rock dusted and cleaned." Two entries on the south side of the mine were badly damaged, with doors and stoppings torn away. The north side of the mine, which had been rock dusted, was not disturbed. The mine reopened Dec. 7.

## KENTUCKY

Voluntary bankruptcy proceedings were filed in federal court at Louisville, Dec. 10, by the D. B. Gore Mining Co., operating a strip mine at Providence. The company's home office is in Birmingham, where its vice-president, David B. Gore, who signed the petition, resides. It lists liabilities of $127,243.70 and assets of $258,671.35. The latter include a number of so-called "dead" assets, such as insurance policies. Machinery makes up most of the assets, one stripper being listed at $103,397. The company does not own coal land, but has been operating on leases in western Kentucky for five or six years.

The Gorman-Pursiful Coal Co., Whitesburg, is planning the erection of a combined club house and hotel.

W. L. Douglass, who with John Richey, was the receiver for Jewett, Bigelow & Brooks during the settlement of the bankruptcy proceedings of that concern, stated Cincinnati Dec. 8 that payment to creditors has been held up because of legal entanglements caused by former members of the firm who advanced personal sums to the company to keep it afloat. They have entered claims for nearly $700,000 with the U. S. District Court for eastern Kentucky, which had charge of the bankruptcy proceedings. If these claims are allowed it would appear that the creditors will get only a few cents on the dollar. Until these suits are heard the money derived from the sales of the mines and other properties will be held. These amount to some $300,000.

Sixty-two employees of the Colonial Coal & Coke Co., at Prestonsburg, have joined with the executives of that concern in an arrangement which provides protection for them as a group through an insurance policy issued by the Prudential Insurance Co. Under the terms of the policy each employee who has more than one month of service will be protected for $1,000. The premiums will be paid on the contributory plan, with the workers sharing in the cost of the protection.

The three southeastern Kentucky coal associations have formulated a committee so that contact can be maintained with the American Railway Association for their concerted benefit. John Callahan of the Southern Coal & Coke Co., Cincinnati will represent the Southern Appalachian group; Prentice Burlingham, the Hazard operators, and R. C. Tway, of Louisville, the Harlan Coal Operators' Association.

The Dawson Daylight Coal Co., Dawson Springs, is now driving shaft mines in addition to its strip operations, but so far hasn't gotten the underground production up to any real loading figure. The operations are fairly well separated as to distance, but load over the same tipple.

The Stevens Branch Coal Co., of Floyd County, and J. H. Briscoe, receiver for the company, were made defendants in an involuntary bankruptcy petition filed in the U. S. District Court at Covington, Dec. 2, claims aggregating $46,682.02. It is alleged that an act of bankruptcy was committed by defendant company when while insolvent it attempted to convey to Lee Stone, of Floyd County, its entire property and assets; that it owes in excess of $100,000, and is unable to meet its obligations. The plaintiffs asked that the court discharge the receiver and order the property sold.

The Cosmos Coal Co., of which W. J. Lester is general manager, has leased the property of the Kentucky Washed Coal Co., at Nonell, a strip operation, and will soon have it in operation.

## MASSACHUSETTS

D. B. Goode, formerly of the Massachusetts Chamber of Commerce, is executive secretary of the Boston Coal Service Bureau of the Smokeless Coal Operators' Association of West Virginia. He is assisted by Henry C. Eaton, a graduate of Massachusetts Institute of Technology, as combustion engineer. They have offices in the Boston Chamber of Commerce building.

## MISSOURI

The St. Louis Coal Club gave its annual smoker and vaudeville entertainment on Dec. 14, at the American Annex Hotel. Among the out-of-town guests were Ray D. Kelly, of Springfield, Mo., and W. R. Feuquay, St. Joseph, Mo., president and commissioner of the Midwest Retail Coal Association.

**George Bryant McCormack**

Long prominent as a coal operator, industrial and financial leader in Alabama, Mr. McCormack died in Birmingham Nov. 28, of heart failure, aged 66. Born in Plattin, Mo., he removed to Birmingham in 1880 with the Tennessee Coal, Iron & Railroad Co., becoming general manager of the company in the nineties. In 1901 Mr. McCormack resigned his position with the Tennessee company and with Erskine Ramsay and other associates, organized the Pratt Coal Co. A number of other smaller operations were bought up from time to time and finally merged under the name of the Pratt Consolidated Coal Co., Mr. McCormack being president of this corporation until a few days ago, when he retired from the executive position and was succeeded by his son, Carr McCormack. The Pratt Consolidated Coal Co. expanded its operations rapidly and when merged with the Alabama By-Products Corporation in 1924 was one of the largest producers of commercial and domestic coal in the Alabama field. When the properties of the above corporations were consolidated Mr. McCormack was made chairman of the board of directors of the Alabama By-Products Corporation. He also was prominent in banking circles. He leaves a wife, four sons and two daughters.

## NEW YORK

The Buffalo City Council has passed an ordinance providing that all coal dealers shall furnish their customers with tickets stating the sort of coal delivered, together with the percentage of volatile matter in it. With the amount of smoke the city factories are allowed to belch out this regulation seems quite gratuitous.

## OHIO

One hundred and fifty miners who went back to work Dec. 11 at the Fort Pitt mine of the Central Coal Co., located at Dilles Bottom, just across the river from Moundsville, W. Va., were laid off the next day, word being received from the general office to close the mine until further notice.

The Ohio school of first-aid instruction for deputy mine inspectors ended Dec. 11 after a five-day session at Cambridge. An address was delivered by Francis Feehan, of the U. S. Bureau of Mines at Pittsburgh. He urged more accident-prevention work in Ohio mines, saying that only West Virginia has a higher fatality rate than Ohio in the Northern group of states between the Mississippi and the Alleghenies, western Pennsylvania having cut its rate to 2.91 per 1,000 miners employed, in contrast with 4.78 for Ohio and 6.56 for West Virginia.

The Essex Coal Co., of Columbus, has suspended operations at the Lost Run and Jacksonville mines, in the Hocking Valley, pending a better demand for domestic sizes. The three mines of the Stalter-Essex Coal Co. in the Pomeroy Bend field are being operated to full capacity.

Dumpings on the docks of the Hocking Valley Ry. at Toledo during the week ending Dec. 9 totaled 85,736 tons, as compared with 116,725 tons in the corresponding week last year. The total dumpings on the docks for the season were 8,387,416 tons as compared with 6,894,082 tons for the corresponding period last season. According to dock officials loading at the docks will continue for some time owing to the open winter.

Richard McGee, of Neffs, has been named deputy mine inspector for Belmont County, succeeding Thomas P. Williams, who resigned.

Mine owners in the Nelsonville field announce that more of the mines in that section are resuming operations, after an idleness of months in many cases. About 140 cars of coal are being moved from the Nelsonville field each working day.

Hatton, Brown & Co., Inc., is the name of an Ohio corporation, chartered recently with an authorized capital of $500,000 to take over all of the interests controlled by that company. The mines operated and handled under sales contracts are located in Virginia, West Virginia and Kentucky and the yearly capacity is in excess of 1,500,000 tons. The former corporation, under the same name, was a Virginia concern and acted as a holding company for the Blue Ridge Coal Co., of Virginia, and the Peerless Elkhorn Coal Co., of Kentucky. In addition the company has interests in the West Virginia field. The incorporators of the new corporation are F. G. Hatton, W. M. Brown, George F. Schwartz, C. R. Elerick and W. E. McIntire. The new company has been organized by the election of the officers of the former company, consisting of F. G. Hatton, president; W. M. Brown, vice-president and treasurer; George F. Schwartz, vice-president and secretary, and W. H. Marshall, Eastern manager. Headquarters will remain in Columbus, with a branch office in Roanoke, Va.

## PENNSYLVANIA

Edward Scott, of Scranton, has purchased from the Erie R.R. for a consideration said to be $70,000 the coal and other material used in building the old Delaware & Hudson Canal at Hawley. The purchase includes the baseball park at Hawley and the basin of the old canal. Reports have it that in 1897 a large consignment of coal was sunk in this basin and Mr. Scott is said to have made arrangements to reclaim it. There is to be a washery erected in Hawley by the new owner. Mr. Scott has been engaged in the coal business on an independent basis for several years.

The American Coke & Fuel Co. has put out sixty ovens at its American No. 2 (Sunshine) plant, at Martin, leaving eighty ovens in operation at this plant.

The Baton Coal & Coke Co., First National Bank Building, Pittsburgh, has taken over the coal mine of the Shenango Furnace Co., near Ligonier, on the Ligonier Valley R.R.

Pennsylvania Coal & Coke Corporation and subsidiaries report October net income of $4,339 after depreciation and depletion, but before federal taxes, against a deficit of $40,359 in October, 1924. Deficit for first ten months of 1925 totaled $453,194, comparing with $329,015 in same period of the previous year.

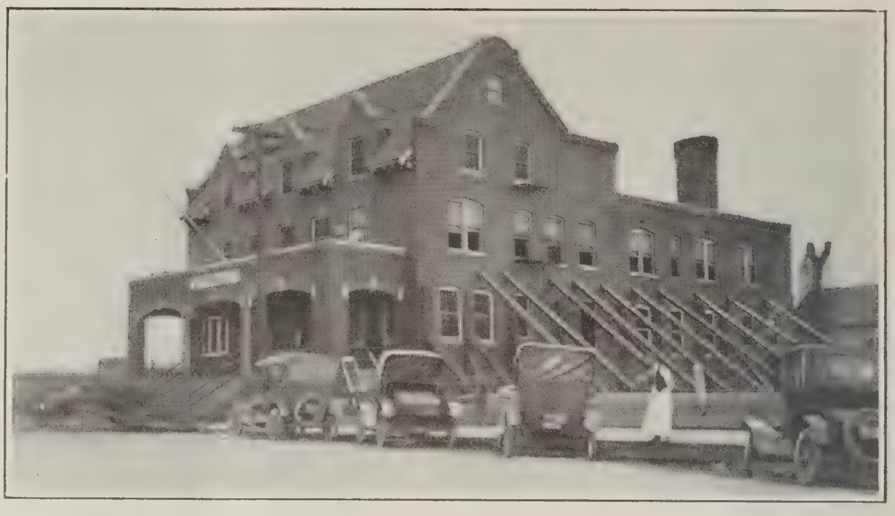
The Franklin National Bank of Philadelphia and J. A. Harris, also of Philadelphia, are seeking action against the Kennedy Coal & Coke Co. and S. H. Cauffiel, of Johnstown, in the Cambria County courts, to protect their alleged interests in the coal company property. Attorney H. S. Endsley, of Johnstown, has been agreed upon as temporary receiver for the company until a hearing on the merits of the case is had. It is claimed that calls for money have been made which threaten the minority stockholders, that the coal lands are not being developed and that all the stock has been made out to S. H. Cauffiel as trustee, who, it is alleged, is serving without bond.

The Superior Coal Co. has reopened its mine at Superior after being down for 18 months. This is in the Pittsburgh district. The Ford Colliery mine No. 3, at Curtisville, is being fitted with a new cage, and the reopening of this mine is expected. The Republic Iron & Steel Co. mine at Rural Ridge has been started on part time. All the operators in the Russellton-Curtisville district are optimistic, and miners who had left the district are returning.

Sterling Mine No. 6, at Bakerstown, has resumed operations. This is one of the big collieries in northern Cambria County and employs several hundred men.

Frank L. ("Dutch") Schwab, chosen an all-American football player twice by Walter Camp when he was at Lafayette College, has accepted a position as superintendent of the Graf Coal Co. operations at Blairsville.

A statement which will show the amount of coal mined in the city of Scranton during the year is in course of preparation by Frank B. Davenport and Frank Gaffney, Scranton City mine-cave engineers. The engineers will turn their figures over to the city board of assessors so that the tonnage removed since the first of the year can be deducted from the assessable coal land in the city in the 1926 tax duplicate. Because of the strike which halted operations on Sept. 1 the tonnage taken out this year is not expected to be as large as in normal years, although the "speeding up" policy followed in the months directly preceding the suspension will offset to a certain extent the production decrease.



**Oklahoma Coal Mine Causes Y. M. C. A. Building to Topple**

The use of heavy planks has been necessary to prevent the collapse of the Railroad Men's Y. M. C. A. building, at Haileyville, Okla. The old Hailey-Ola coal mine, which underlies the townsite of Haileyville, is believed to have caused the earth to sink. The mine was abandoned years ago and the company is now working an extension of the same coal seam several miles southwest of the original workings. The building was abandoned early this year, when large cracks were discovered in the walls and the cause revealed.

The Irwin Gas Coal Co., of Greensburg, has contracted with the Roberts & Schaefer Co., Chicago, for a quick-return oscillating - screen equipped tipple.

R. B. Hays Coal Co., of Masontown, has contracted with the Roberts & Schaefer Co. for the installation of coal conveying and quick-return oscillating screen equipment for its No. 2 Mine at Uniontown.

Dr. W. Frank Beck, one of central Pennsylvania's foremost coal operators, has entered the race for the Republican nomination for State Senator from the district composed of Blair and Huntingdon counties. He will be opposed by the present incumbent, Plymouth W. Snyder. Dr. Beck is a resident of Lakemont, a suburb of Altoona. He is president of the Priscilla Coal & Coke Co. and secretary-treasurer of the Jefferson Ridge, Campbell Ridge and the Thomas Mills Coal companies. Dr. Beck formerly was a practicing physician and is prominently identified with the Grange, having farming interests as well as coal interests.

The Trumbull Coal Co., of Cleveland, has contracted with the Roberts & Schaefer Co. for conveying and quick-return oscillating screen equipment for its tipple at Clarksville.

The Pittsburgh Coal Co. has resigned from membership in the Pittsburgh Coal Producers' Association, assigning as a reason "the general condition of the coal situation." Its operation of five mines on the November, 1917, scale would not necessitate its withdrawal. It is said that the company will continue to support the movement for a lower Pittsburgh district rate on lake coal and that some members of the association have been unwilling to support that program.

The H. C. Frick Coke Co. is still adding ovens to its active list, having fired 400 more at different plants last week.

With the recent opening of the Conifer mine of the Allegheny River Coal Co., better known as the Pittsburgh & Shawmut Coal Co., from its sales auxiliary, all the mines of this company are working again at some rate.

The Pittsburgh Terminal Coal Co., Pittsburgh, has contracted with the Roberts & Schaefer Co. for the construction of local trade bins at its Castle Shannon mine.

Shipments of bituminous coal by the Reading Company during October, 1925, totaled 1,867,412 gross tons, compared with 1,617,084 tons in the corresponding month of 1924.

## UTAH

R. M. Magraw, former general superintendent for the United States Fuel Co., has been appointed to a similar position with the Brady-Warner Coal Corp. of West Virginia, with headquarters in Fairmont. Mr. Magraw came West in 1905 after beginning his career in West Virginia.

The Utah Industrial Commission has handed down a ruling that a laborer engaged in unloading coal from a railroad car under the form of contract adopted for this work by coal dealers in Salt Lake City is not an employee of a coal company within the meaning of the state workmen's compensation law. He in an independent contractor. It was pointed out that under the contract which the companies have adopted the man unloading the coal can engage help if he desires and is not himself under the control of the coal company so long as he completes the contract on time.

### VIRGINIA

The Clinchfield Coal Corporation has declared a dividend of 50c. on the common stock of the company, bringing total payments for 1925 on the common stock up to $3 per share.

Coal output in the Virginia field recently has reached 243,884 tons a week, but of a total of 153 railroad tipple mines in the field, 81 are active and 72 idle. Many of the idle mines, however, are small. Production of coke has materially increased but is still considerably behind that of 1923 and 1924.

### WEST VIRGINIA

The Paisley interests have obtained a lease on the Benwood mine of the Wheeling Steel Corporation and propose to improve and extend its facilities until the present capacity is doubled. This property includes 5,000 acres of good coal land. The contract for the steel corporation calls for delivery at the rate of 200,000 tons per year for the use of the Benwood mills. It is expected that a like tonnage will be marketed elsewhere via rail and river. The large expansion of this property, both in the opening of new shafts and the installation of improved machinery, probably will make the mine the largest single producing unit working the Pittsburgh No. 8 seam.

Federal mine No. 1 of the New England Fuel & Transportation Co. is about one-third rock-dusted. About eight miles of haulageways, aircourses, etc., are so treated. It is planned to complete the work by Feb. 1. This is one of the largest mines in the region.

In opening a new mine at Skelton and establishing a plant at that point, the Elkhorn Piney Coal Mining Co. has let a contract for the construction of a large tipple costing about $150,000 to the Link Belt Co. It is expected to make this plant among the largest producers in the smokeless field. It will have a daily output of 2,000 tons of prepared sizes of low-volatile coal. One hundred houses and the necessary office and other buildings are also to be constructed at an outlay of approximately $100,000. Coal will be mined in the Sewell seam, which is about 4 ft. thick at the point where it will be mined. Nut, egg, lump and slack will be produced. The Elkhorn Piney company now operates three mines at Stanaford. Its officers are J. W. Shaeffer, president; Lou Roach, general manager; J. W. Ailstock, general superintendent.

The plant of the West Williamson Coal Co., which has been idle for some time, has been leased by H. T. Williamson to James and Oscar North, well known coal operators and dealers of Portsmouth, Ohio. Work of cleaning up the mine and making necessary repairs to equipment was begun on Nov. 30. Coal is to be mined from the Thacker seam.

W. W. Brewer, of Belington, has been made superintendent of the Chesapeake mine of the Fairmont-Chicago Coal Co., at Barrackville.

A certificate has been issued by the Secretary of State of West Virginia for a reorganization and decrease in the capital stock of the Elk Horn Coal Corporation. Capitalization has been decreased from $28,600,000 to $6,600,000.

**Has Coal Mine in His Yard; Not Worried by Strike**

Charles B. Zimmerman, a Shamokin (Pa.) merchant, is not particularly upset about the anthracite strike, having struck a good seam of hard coal in his back yard, which will take care of his fuel needs for a while, as he owns the mineral rights under his lot. Mr. Zimmerman is at the right of the group, seeming to be more interested in the coal than the camera.

The Pocahontas Fuel Co. plans to have its large tipple at the new Faraday plant in operation soon. The company has been rushing the steel and cement work. Unofficially it is learned that as many as 50 to 75 cars of coal can be dumped over the tipple in a single day, when the work is completed. Though the tipple is uncompleted, the company is mining coal. About 700 men are now on the payroll at Faraday, part of the force being engaged in building more homes for the miners. This is said to be the biggest mining project ever launched in southern West Virginia.

A rope and button conveyor 825 ft. long will be erected late in January at the mine of the Vera-Pocahontas Coal Co. along the N. & W. Ry. at Iseger, McDowell County, by the Fairmont Mining Machinery Co. The conveyor will carry coal from the top of the mountain to the railroad below.

Announcement has been made by West Virginia University that the short course in coal mining will be held in Mechanical Hall, Morgantown, from June 14 to July 24, inclusive.

Kenna mine of the Clark Coal & Coke Co. resumed operation on a non-union basis in Tunnelton last week.

The Consolidation Coal Co. has completed arrangements to purchase from the West Fork Coal Co. the Central mine, in the vicinity of Monongah. The consideration is understood to have been $10,000. B. F. Evans is president of the West Fork Coal Co.

The Algoma Coal & Coke Co., of Algoma, has contracted with the Roberts & Schafer Co. for a complete Marcus tipple and dry cleaning plant, which will embody the use of the Arms screens and concentrating tables. The plant will be complete with "RandS" shaker loading booms and will make all of the prepared sizes of Pocahontas coal.

M. H. Hall has been appointed general superintendent of the Bartley "wireless" mine of the Pond Creek Pocahontas Co., vice H. C. McKalip, resigned. Mr. Hall formerly was chief engineer of the Pocahontas-New River Division of the Consolidation Coal Co., Coalwood.

H. E. Spernon, H. A. Ambrose, J. T. Hite, F. M. Lynch, all of Ohio, and Stephen Mason, of Fairview, have purchased 1,172 acres of Pittsburgh coal in the Grant district of Wetzel County. Although the consideration was not disclosed, it is understood on good authority that the price paid was around $50,000. The understanding is that a Pittsburgh concern is negotiating for the purchase of this valuable block of coal with a view to developing it for operation in the near future.

Operations were resumed Dec. 11 with 200 employees at the Richland and McKinleyville mines, owned by the J. C. McKinley interests. Financial difficulties last August forced this mine to discontinue operations, and a sheriff's sale for taxes was averted by a receivership. These matters have since been adjusted. A third mine owned by the company in Marshall County reopened Dec. 14 after being taken over by the Hitchman Coal Co. This mine employs 150 men.

Answering a contempt citation in Circuit Court last week, C. M. Workman, a member of the Executive Board of District 17, United Mine Workers, charged the international organization of the miners with practically destroying the union in West Virginia. Workman had refused to sign a deed turning over district union property to the international organization after the mother union had suspended the autonomy of the district. The court had authorized the board members to make the deed, and Workman, refusing to sign, was charged with contempt.

### WYOMING

H. C. Marchant, general manager of the Rock Springs-Superior Coal Co., has resigned his post with that company to accept a position with the P. J. Quealey coal interests as assistant to President Quealey. He will spend the next few months in Denver, after which he will establish his headquarters at Kemmerer, head offices of the Quealey interests.

### CANADA

In the Criminal Court in Calgary on Dec. 4 five miners convicted of unlawful assembly to compel others to abstain from working in the A B C coal mine at Drumheller last summer were sentenced to one year's imprisonment. Five others convicted on a charge of watching and besetting the mine were sentenced to two months imprisonment.

The Nova Scotia Coal Commission concluded its sittings in Sydney on Dec. 3. The commission has gone to Montreal, arranging to return to Nova Scotia in a few days, when the hearing of evidence will be resumed at Halifax. The chairman stated that he hoped to deliver the findings of the Commission before the end of the month.

The output of coal during November from the mines of the British Empire Steel Corporation totaled 455,000 tons, an average of more than 18,000 tons per day.

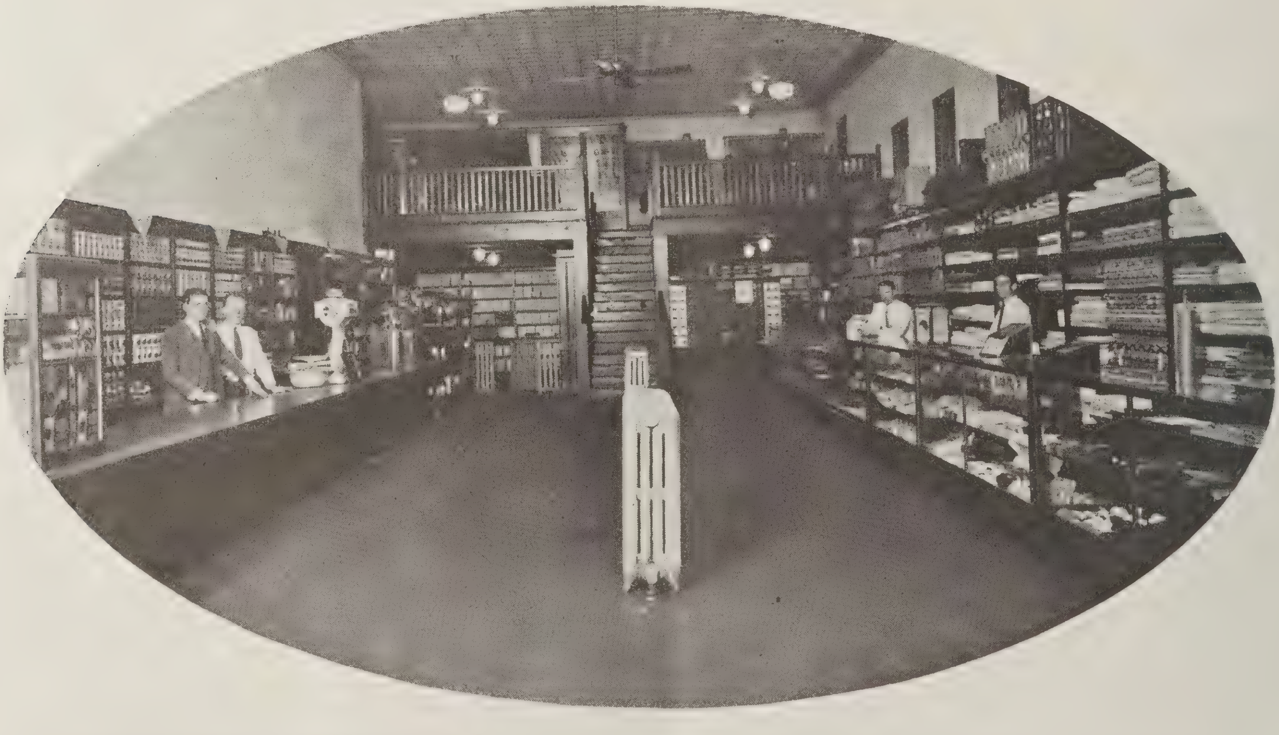
Output of coal from Canadian mines during September was 1,191,081 tons, as against 988,824 tons in August, and an average for the month during the five preceding years of 1,312,448 tons. Production in September showed a considerable gain over August in Nova Scotia and Saskatchewan, but slightly lower figures for Alberta, British Columbia and New Brunswick than in the preceding month. Saskatchewan and Nova Scotia were the only provinces which reported a greater output in September than the average for the month in the five preceding years. Imports of coal from the United States and Great Britain in September totaled 1,872,417 tons as compared with 2,177,270 tons in August and the five-year average of 1,660,712 tons.

Production of coke in Canada during October totaled 161,414 tons, an increase of 57 per cent over the 102,882 tons produced in September. The amount of Canadian coal used for coke making rose to 84,390 tons from 48,468 tons in September, and imported coal advanced to 163,060 tons from 109,015 tons in the same time, bringing the total consumption of coal for coke making to 248,060 tons as compared with 157,483 tons in September. Imports of coke in October were 94,213 tons as compared with 78,732 tons in September, while exports were 4,149 tons as compared with 4,268.

## Obituary

**Dr. C. B. Lee**, 58, of Glen Jean, W. Va., died suddenly Dec. 3, in Philadelphia, where he had gone to see his wife, who was in a hospital. Funeral services at Charleston, W. Va., on Dec. 7, were conducted by Bishop W. L. Gravett. Dr. Lee, who was president of several mining companies in the Loop Creek section of Fayette County, had been prominent for a number of years in the smokeless coal industry of southern West Virginia. He was associated in business with William McKell, Thomas Nichol, Dr. Gory Hogg and other well-known coal leaders of the state.

**Edwin O. Parkinson**, district manager of the Pocahontas Fuel Co. at Norfolk since the firm's organization 16 years ago, died in New York, Dec. 6, after an illness of two years. Prior to his connection with the coal company he was agent for the Norfolk & Western Ry. He was prominent in business and civic affairs in Norfolk, being a director of the Hampton Roads Maritime Exchange, a director of the Norfolk National Bank, and otherwise prominently identified with business and civic interests.



**An Up-to-Date Commissary of a Coal Mining Company in the Harlan Field of Kentucky**

This company store is located at Alva, Harlan County, Ky., and supplies the needs of the coal mining community of the Black Star Coal Co. As can be seen in the illustration, the store is planned with plenty of floor space which affords a good display of provisions and merchandise. The commissary is well lighted and the ceiling fan and radiator would indicate that the company when erecting this store kept in mind the comfort of its employees who work and trade here.

## Coming Meetings

**Chicago Wholesale Coal Shippers' Association.** Annual meeting, Great Northern Hotel, Chicago, Ill., Jan. 6, 1926. Secretary, G. H. Merryweather, Temple Bldg., Chicago, Ill.

**American Wood Preservers' Association.** Annual meeting, Jan. 26-28, 1926, at Cleveland, Ohio. Secretary, E. J. Stocking, Chicago, Ill.

**Coal Club of Philadelphia.** Annual meeting, Jan. 28, 1926, at the Bellevue-Stratford Hotel, Philadelphia, Pa. Secretary, C. K. Scull, Philadelphia, Pa.

**Northeast Kentucky Coal Association.** Annual meeting, Jan. 28, 1926, at Ventura Hotel, Ashland, Ky. Secretary, C. J. Neekamp, Ashland, Ky.

**American Institute of Electrical Engineers.** Annual convention, Feb. 8-12, 1926, at Engineering Societies Bldg., New York City. Secretary, F. L. Hutchinson, 29 West 39th St., New York City.

**The Rocky Mountain Mining Institute.** Winter meeting, Feb. 23-25, 1926, at Albany Hotel, Denver, Colo. Secretary, Benedict Shubart, Boston Building, Denver, Colo.

## New Companies

**The Grounds Coal Corporation** has been incorporated at Dana, Ind., with 500 shares of no par value capital stock. The company will do a general mining business. The incorporators are Curtis Grounds, Lee Grounds and Wesley S. Harris.

**The Boone County Mining Co.** has been incorporated in Columbia, Mo. by H. H. Hebenstreit, Melvin E. Hebenstreit and others.

**The Northend Coal Co.** was recently chartered in Henrietta, Okla., with a capital stock of $10,000, by Ira Exley, R. R. Fretwell and others.

**The Zenith Briquet & Mines Corporation,** of Minneapolis, Minn., has published articles of incorporation, with a capital stock of $100,000. The incorporators are Hanson Evesmith and Ruggles Evesmith, both of Minneapolis, and Mary Wilson Evesmith, of Fargo, N. D. The purpose of the corporation is described as owning and working mineral lands and manufacturing and marketing the products.

**The Blue Jacket Coal Co.,** Covington, Ky., has been incorporated by M. H. McDean, T. J. Bell and Edward Engelkamp.

**The Copley Utilities, Inc.,** 72 Fox Street, Aurora, Ill., was recently incorporated; capital $10,000 and 183,750 shares of no par value. The company will operate coal mines and distribute natural gas. The following are the incorporators: C. A. Huebner, G. T. Johnson and B. P. Alschuler.

## Industrial Notes

**C. F. Phillips** has been appointed representative in charge of Wilkes-Barre (Pa.) office of the Allis-Chalmers Mfg. Co. Mr. Phillips, who formerly was connected with the Philadelphia office of the company, succeeds Guy V. Woody.

**Herbert E. Smith,** general sales manager of the United States Rubber Co., has been elected a second vice-president of the company in general charge of sales activities of all commodities except tires, succeeding George H. Mayo, retired.

## Recent Patents

**Mine Post;** 1,555,053. John T. Youger, Carmichaels, Pa. Sept. 29, 1925. Filed Nov. 26, 1923; serial No. 677,071.

**Synchronized Rotary Dump;** 1,555,077. Erskine Ramsay, Birmingham, Ala. Sept. 29, 1925. Filed Dec. 15, 1924; serial No. 680,935.

**Attachment for Mining Machines;** 1,555,464. Wm. H. Farne, Williamson, W. Va. Sept. 29, 1925. Filed Nov. 28, 1924; serial No. 752,654.

# New Equipment

## Joy Loading Machine Design Shows Some Improvements

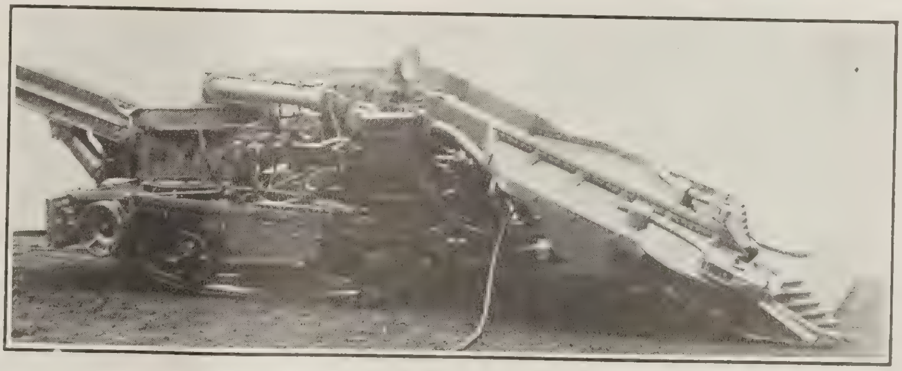
Through continual field experience the Joy Machine Co. recently has improved several details of construction in its loading machine. Thus, in order to obtain an increased capacity, the size and shape of gathering arms have been changed to give a solid manganese steel part with cutting points cast integral therewith instead of the bits employed on the old style of arm. These manganese steel points maintain their sharpness over a considerable length of time without attention, and the danger of losing cutter bits formerly experienced has been entirely eliminated.

Design of the caterpillar sprocket rollers also has been changed from a built-up type, consisting of one inner and one outer half with a plate sprocket bolted between them, to a solid steel roller so designed that accumulations from the caterpillar chain can escape through an opening provided for that purpose. The new design of roller will last almost indefinitely. Solid cast track wheels also have replaced the built-up type formerly used, thus eliminating maintenance expense on this machine part.

As formerly designed, the caterpillar chains operated over two center rollers on each side of the machine. These have now been replaced by a steel supporting shoe giving greater bearing area for the caterpillar chain, thus obviating the buckling and breakage of chains experienced with the former rollers. By this new device, practically all caterpillar chain breakage has been eliminated and the life of these chains has been increased approximately 100 per cent.

In order to obtain a more dependable hydraulic pressure in the system actuating the vertical movement of the gathering head as well as that of the rear conveyor, a new control valve has been designed. This controls all these actions through one mechanism. The new valve is provided with renewable seats and maintenance or replacement costs, consequently, are greatly decreased.

To decrease maintenance costs and improve operation of the pump supplying hydraulic pressure, a ball-bearing drive has been substituted for the former bronze bushing used at this point. Several other details embodied in the machine have been appreciably strengthened through redesign. Field tests extending over several months have proved that the output of the machine has been increased and its maintenance expense reduced by these improvements.



**Several Details Have Been Improved**

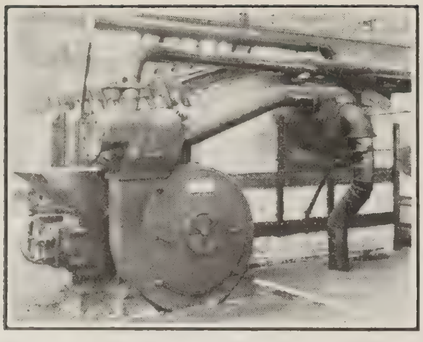
Particularly noticable in this side view are the new gathering arms and the shoe supporting the caterpillar chain. The arms are one-piece castings of manganese steel with integral points displacing the pick points of the former design. The chain-supporting shoe eliminates buckling of the chain and affords a larger bearing area.

## Small-Size Pneumatic Stoker Pulverizes and Fires

What is known as the Vulcan pneumatic stoker, a coal pulverizing and firing outfit of small size, recently has been placed on the market by A. A. Wickland & Co., of Chicago, Ill. Machines of this kind have now been in operation for slightly over a year and both the pulverizing unit and burner have proved their efficiency in the operation of both steam boilers and reverberatory furnaces.

Advantages claimed for this outfit by the manufacturer include the following: Low initial cost, simplicity, rugged construction, positive mechanical feed, accessibility, low expense for the replacement of wearing parts, three-stage pulverization and a means for positive separation of metal, stone, slate and other heavy materials from the fuel. This machine will pulverize screenings to a fineness of 85 per cent through 200 mesh. The actual fineness of the product depends somewhat upon the structure and dryness of the coal employed. The burner furnished with the pulverizer is designed to produce a thorough mechanical mixture of the powdered fuel and air. This mixture enters the furnace at a low velocity and is held in suspension by the introduction of secondary air through ports within the furnace.

Installations of this stoker have been



**Pulverizes Coal and Delivers Direct**

Pulverization takes place only as needed. From the pulverizer the fuel is delivered by an air blast through a short pipe to the furnace. The grinding and delivery equipment may be placed either in front or at the side of the furnace, thus offering a choice of positions. This is a highly advantageous feature in the power plant, particularly if room is at a premium.

made to serve an open hearth furnace, reverberatory furnaces and for operating boilers. The pulverizer has a rated capacity of 2,500 lb. per hour and requires about 19 kw. of electric energy per ton of coal treated per hour. The powdered product is withdrawn from the pulverizer by an air draft and fed almost directly into the furnace. The equipment may, however, be installed either in front of the boiler furnace or at one side, thus giving an excellent choice of location for this machinery within the power plant.

## Eliminates Much Labor On the Job

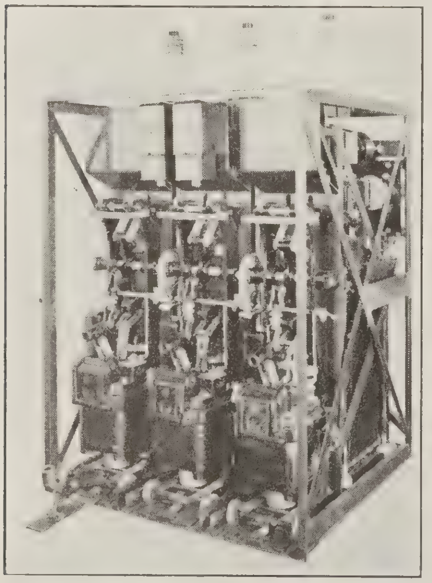
A housing framework for Type FK-54 oil circuit breakers is now being manufactured by the General Electric Co. It is designed primarily to meet the demand for equipment which can be installed with a minimum of skilled labor.

The three runways of the framework are welded into one solid piece, forming a base plate to which is welded an overhead structure of angles and steel straps. Though the design is simple the framework is of sufficient strength to hold bushings, contacts and runways in permanent alignment. To install the equipment it is merely necessary to run the housing into the cell, secure it with grouting through the base plate and make the usual connections.

The units are securely interlocked to prevent withdrawal of closed breakers, and there is a positive interlock between tripping coils so that the opening of one unit opens the entire circuit. A grounding device on each breaker, consisting of a long blade on the housing which engages a spring clip on the unit, gives grounding protection until the main contacts have been separated 3 in.

All single-pole units can be assembled singly or in two-, three-, or four-pole groups. At 7,500 volts, the ampere capacities are 400, 600, 800, 1,200, 1,600 and 2,000 amp. The interrupting capacity is 10,500 amp. at 7,500 volts for two-, three-, or four-pole operation.

Another advantage of this new housing framework is the ease with which the three top bushings can be located, all time-consuming adjusting being eliminated. The bushings are so arranged that contacts are in perfect alignment. Although these bushings are removed for shipping and cannot be replaced until the housing is in its cell, a system of numbers and dowels enables the user to replace the bushings in the same alignment obtained at the factory. Mounting plates are not interchangeable. Rear bushings are shipped to the customer mounted in position.



**Simple Mounting for Solenoid-Operated Breaker**

Separate single-pole units can be arranged in groups to make two-, three,- or four-pole switches. The framework is easy to handle and can be quickly set in position.

## Publications Received

**A Thermodynamic Analysis of Gas-Engine Tests,** by Crandall Z. Rosecrans and George T. Felbeck. Engineering Experiment Station, University of Illinois, Urbana, Ill. Bulletin 150. Pp. 98; 6x9 in.; illustrated. The object of the investigation leading to the publication of this bulletin was to apply a rational thermodynamic analysis of the constant-volume, or Otto, cycle to test results obtained from an engine operating on such a cycle.

**Coal Losses in Illinois,** by C. A. Allen. Illinois Mining Investigations prepared by the U. S. Bureau of Mines, with the collaboration of the Illinois Geological Survey and the Engineering Experiment Station of the University of Illinois, Urbana, Ill. Bulletin 30. Pp. 36; 6x9 in.; illustrated.

**Coal Resources of District III** (Western Illinois, by Harold E. Culver. Illinois mining investigations prepared under a co-operative agreement between the Illinois State Geological Survey Division, The Engineering Experiment Station of the University of Illinois and the U. S. Bureau of Mines. Bulletin 29. Pp. 128; 6x9 in.; illustrated.

**Coal,** by Edward T. Devine. American Review Service Press, Bloomington, Ill. Pp. 448, 5 x 7½ in.; illustrated. Covers the economic problems of the mining, marketing and consumption of anthracite and soft coal in the United States.

**The Mineral Resources of the Philippine Islands for the Years 1921, 1922 and 1923.** Division of Geology and Mines, Bureau of Science, Manila, P. I. Pp. 63; 7½ x 10½ in.; tables.

**Electrical Exploders for Shot-Firing in Coal Mines.** Safety in Mines Research Board Paper No. 11, H. M. Stationery Office, Kingsway, London, England. Price, 1s. net. A report of a sub-committee of the Explosives in Mines Research Committee. Pp. 31; 6 x 9½ in.; illustrated.

**Coke-Oven Accidents in the United States During the Calendar Year 1924,** by William W. Adams, Bureau of Mines, Washington, D. C. Technical Paper 388. Pp. 38; 6 x 9 in.; tables.

**Misuse of Flame Safety Lamps and Dangers of Mixed Lights,** by L. C. Ilsley, Bureau of Mines, Washington, D. C. Miners' Circular 29. Pp. 12; 6 x 9 in.; illustrated. Price 10c. Describes how explosives have been caused by the abuse or misuse of flame safety lamps or by the use of open lights and safety lamps in the same mine.

## Trade Literature

**"Turbinair" Portable Hoists.** Sullivan Machinery Co., Chicago, Ill. Bulletin No. 76-F. Pp. 15; 6 x 9 in.; illustrated. Describes types HA-3 and HA-2 single drum and type HDA-2 double drum.

**Dimension and Load Bulletin No. 1559.** Hyatt Roller Bearing Co., Newark, N. J. Pp. 13; 8½ x 11 in.; illustrated.

**Raw Water Distilling Plants for Producing Distilled Boiler Feed Make-Up Water.** The Griscom-Russell Co., 90 West St., New York City. Pp. 39; 6 x 9 in.; illustrated. Fifth edition. Covers the latest developments in evaporator plants for purification of boiler feed make-up.

**Construction of Parallel Wire Cables for Suspension Bridges.** John A. Roebling's Sons Co., Trenton, N. J. Pp. 94; 9 x 12 in.; illustrated. Describes and illustrates the construction of a modern suspension bridge and contains latest data in connection with the fabrication of bridge cables.

General Electric Co., Schenectady, N. Y., recently issued the following: Bulletin GEA-133, illustrating the G-E **electrically operated flow meters for measuring steam, water, oil, gas, etc.** Bulletin GEA-235, describing and illustrating the general principles and advantages of **Steam Turbines;** sections and steam path diagrams are shown. GEA-178, on **Instrument Transformers,** containing 52 pp. devoted to the theory and engineering characteristics of transformers used to facilitate the measurement of electrical qualities; the book is well illustrated with photographs, diagrams, charts and tables.

**Comparison of Diesel Engine Principles.** Fairbanks, Morse & Co., Chicago, Ill. Bulletin No. 1020. Pp. 32; 8½ x 11 in.; illustrated. Analyzes and interprets the various factors which influence the design of Diesel engines.

**Splices and Tapes for Rubber Insulated Wires.** The Okonite Co., Passaic, N. J. Pp. 15; 6 x 9 in.; illustrated. Describes the importance of a perfect splice, properties of tape, how to recognize these properties and how to make a perfect splice.

The **"Burden Bearers"** is the title of a booklet published by Standard Steel & Bearings, Inc., Plainville, Conn. It describes the forging of molybdenum steel balls and tells how these balls can be produced with required accuracy and yet be capable of carrying heavy loads for long periods of time.

The Climax Engineering Co., Clinton, Iowa, has issued a series of bulletins covering its various models of **engines.** Bulletin A describes the "K" series, four-cylinder, 5 x 6½-in. engine. Bulletin B covers the "T" series, four-cylinder, 5½ x 7-in. engine. Bulletin C describes the "R" series, which is made in two models—model "R4U," covering the four-cylinder 6 x 7-in. engine, and model "R6U," covering the six-cylinder 6 x 7-in. engine. Bulletin D covers the "K" and "T" series portable power houses. These bulletins are all illustrated and measure 8½ x 11 in.

The Allis-Chalmers Co., Milwaukee, Wis., has issued Leaflet No. 2082, on **Centrifugal Boiler Feed Pumps.** It contains 7 pp., is 7¾ x 10½ in., illustrated.

Electric Service Supplies Co., Philadelphia, Pa., has issued Bulletin No. 216, on **Floodlighting.** The bulletin is well illustrated and includes charts and diagrams.

**Blasting Accessories** is the title of a booklet of 80 pp. issued by E. I. du Pont de Nemours & Co., Wilmington, Del. It gives complete and detailed data on the various accessories needed for firing charges of explosives, with explanations of the best methods of using these accessories.

American Blower Co., Detroit, Mich., has issued the following two bulletins: **Type "D" Mine Fans,** Bulletin No. 3313, and **"Sirocco" Air Washers,** Bulletin No. 1923, describing the manufacture, operation and use of these washers.

# COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
E. J. MEHREN, *Vice-President*

Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

R. DAWSON HALL
*Engineering Editor*

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## What the Public Wants

BECAUSE the anthracite producers have declined to have anything to do with the Pinchot eleven-point "peace" program, the Governor of Pennsylvania charges them with warring against the public. That the public is a real party to the controversy between the operators and the miners is well recognized. But before we can acknowledge any truth in the Pinchotian indictment, we must understand clearly what the objectives of the public are and how they coincide or conflict with the objectives for which producers and miners have been fighting since July.

What does the public want? First and foremost, the public wants an uninterrupted supply of coal. It wants the old-time assurance that coal can be had whenever the consumer is disposed to order fuel. Second, the public wants to purchase that coal at the lowest possible price. If the issue is raised, the public is willing that that price shall be high enough to fairly compensate both the capital and the labor employed in the production and distribution of coal. These are the sum total of its wants.

The public has complained in recent years that these simple wants have not been met. The anthracite producers have conceded that there is merit in that complaint. To meet the first demand of the public they have asked repeatedly that the miners join with them in an agreement which would make future strikes impossible. The basis of that proposed agreement is that disputes between employers and employees which cannot be settled by direct negotiations shall be submitted to an impartial board of arbitration.

To meet the second demand of the public, the operators have declared their opposition to further increases in the cost of production. The union, in terminating the wage negotiations with the producers at Atlantic City last summer, refused to give the employers the opportunity to present the grounds for their opposition to further increases in labor costs. The union scale committee disputed the claim that the industry could not pay higher wages without passing on the cost to the consumer and then denied the operators a hearing on that claim.

Union leaders and Governor Pinchot have accused the operators of declining "to yield one jot or tittle of their original position." That accusation, however, conveniently ignores the fact that the operators have offered to submit their justification to the judgment of an impartial board of arbitration with unrestricted power to determine the issues. The greatest concession that the union leaders have been willing to make in the public interest is an agreement to submit to arbitration *how much higher*, if any, wages might be advanced. Arbitration to prevent future suspensions has been repeatedly rejected by Mr. Lewis and his associates.

The public wants an assured supply of fuel at a fair price. The public wants are the operators' necessities. For insisting upon meeting those wants, Mr. Lewis and Governor Pinchot charge the operators with warring against the public.

## On Solid Ground

RUMOR HAS IT that the British visitors who have just departed were principally impressed in their trips through the mines of this country, not so much with our mechanical developments as with our practice of keeping our haulage roads in solid coal instead of in the "goaf or broken" as they would term it. The British use much longwall advancing and so have roads that lack permanency, with crumbling roofs and moving sides. The investigations of the visiting party seemed to convince them that longwall retreating was better because it afforded good roofs and a reduction of timbering.

In some cases where permanence is desired, as in the anthracite region where thick beds are mined under heavy cover, gangways in the rock or in underlying coal beds too thin to mine and where rock has to be lifted or brushed have been used with success. They frequently have in a high degree the permanence that is so desirable. Timber is not needed, or may be used sparingly.

The gangways are truly "in the solid," and nowadays with machines so readily available for loading rock it is to be expected that the mileage of such gangways will be greatly increased, especially for drainage purposes. Many a mine manager if he could have foreseen the timber costs, delays, danger and maintenance expense that his gangways in the coal entailed would have cheerfully faced the expense of placing them in solid strata where they would have been subject to less strain from mining operations. In fact, the elaborate timbering in some of the workings suggests forcibly that tunnels in the rock might frequently be made to replace present gangways with improvement in some cases in the gradients of the roadway.

## Fewer Types of Equipment and Fewer Troubles

"I'D CERTAINLY like, sometime, to work where all the equipment is the same," said the chief electrician of a large mine. After a pause he added, "But then, you don't get paid for doing nothing. The chief at a standardized mine would have a snap, and more than likely would be paid accordingly." He was not, necessarily, correct in his conclusion that standardization of equipment would mean that the company would make a saving by paying a lower salary to its chief electrician. Such men are paid for their knowledge and for being on the job ready for emergencies, instead of for the actual physical and mental work performed. Nevertheless, this chief electrician correctly judged the importance of standardization.

One evident and direct advantage of standards is the reduced stock of repair and spare parts necessary to insure continuous operation. Less space and less labor are required to store and maintain the stock, and it is more certain that necessary parts are on hand when the call comes. Fewer repair men are needed, and better work is done because the men are more familiar with the details of the equipment. Cases of abuse by machine operators to one type of machine, in order to get the chance to use a preferred type, are eliminated; a less percentage of delay makes it possible to operate with fewer machines; mechanical troubles are more readily detected, and permanent improvements thereby effected. Investigation usually will reveal that, at low-cost mines, highly standardized equipment and methods are in use.

## An After-the-War Readjustment

BECAUSE of the cheapening of money and the appreciation of goods, salaries have in general been raised throughout the United States, but not adequately in the government service, though increases have been granted to those whose emoluments are commonly known rather as wages than as salaries.

Justice demands that the compensations of those in the government service shall rise and fall reasonably in accord with the salaries and wages of the public in general. It must be remembered that none of them has a way of supplementing his earnings like Congressmen by performing unofficial service.

Just at present pressure is being brought to raise the salaries of district judges 33 per cent from $7,500 a year to a minimum of $10,000 with a maximum set $1,000 below the salary of circuit judges wherever the district population exceeds 2,000,000. The circuit judges, who have been receiving $8,500, would have their salaries increased so as to range from $3,000 to $15,000. The Supreme Court judges will be raised from $14,500 to $20,000 and the Chief Justice from $15,000 to $20,500.

Since 1891 the salaries of district judges have been raised 50 per cent, of circuit judges 38½ per cent and judges of the Supreme Court 16 per cent. The salary of the chief justice is less than a third that of Great Britain's leading judicial authority and half that of Ireland's principal judge. The Lord Chief Justice of Scotland gets two-thirds more than our Chief Justice and the rate in India is but $1,000 less.

That is not all. The salaries for state judges are lower than the salaries for federal judges in a large number of cases. A judge of the Supreme Court of Pennsylvania or New York gets $3,000 a year more than a judge in the Supreme Court of the United States, yet it is now proposed to raise these salaries in the first-named state. The proposed bill will add only $743,000 to the national budget, and the total cost for all the salaries of all the federal judges in the United States will be less than two cents per year for every person in the United States.

No less than six judges in the New York district have recently resigned to enter legal practice which nets them much larger returns. The president has found others to replace them, doubtless, but the character of the judges must decline if their present salaries are to continue; first, because the best men will not enter the service of the government, and second, because they will leave before they become definitely posted on all the matters which a judge must decide.

## Progress of the Strike

EVIDENTLY the boys are not to be out of the trenches by Christmas, although it is rumored here and there that peace in the matter of the coal strike may not be far off. The main strategy of the Mine Workers, upon which their officials depended, has so far failed, in the lack of enthusiastic response of public sentiment in their favor and the expected amount of clamor and pressure upon the government to intervene.

And the government at Washington persistently refuses to jump when the strings are pulled by the officials of the striking coal union. Wages in the anthracite industry, they recognize, and the public recognizes, are already higher in proportion than in most similar industries—they are far higher, for example, than those with which the metal miners are contenting themselves without complaint. The anthracite miners (operators and workmen) should clearly perceive that further raising of costs is not only inadvisable but impossible, because it would mean a further loss of the already insecure anthracite markets and a corresponding blow to anthracite labor and capital. Any further increase in mining costs, it is realized, must be passed on to the public; and the public has clearly indicated that in that case it will take its business elsewhere.

It is to be hoped that the outcome will be a more helpful and co-operative form of unionism. The coal industry is a national problem, not so much because of any close organization among coal operators (indeed the Federal Government and coal commissions have complained of the lack of any centralized competent organization of capital with whom parley could be held); it is a national problem, and in time of strikes appears to be a national monopoly, through the recent monopoly of mine labor. What the coal industry needs is freer competition, which indeed has been partly obtained in the present emergency by the increased activity of the bituminous industry.

Close Analysis of Accidents will prevent their recurrence. Any accident that might have caused an injury but did not should be investigated and the result recorded. No accident should be grouped under a single cause, but cross-indexed and cross-recorded under all the various elements surrounding or causing it—negligence, lack of instruction, sickness, feebleness, age, ignorance, or lack of sight of victim where there is one, lack of light, time of day, day of week, faulty track, weather conditions, seam of coal and part of mine.

The Public Doesn't Desire knowledge for its guidance. If it thinks something is being hidden from it, it naturally becomes anxious to find out what it is. With ascertainment completed the interest dies. The facts are no longer news. The papers want "exclusive stuff." If they all get a story, especially without asking for it, they won't take the trouble to print it. But if it's a secret, that's another matter. Perhaps a little greater coal publicity would do no harm.

Seeing That Anthracite is faced by competition from substitutes and that competition can be proved by many public utterances and other unquestionable evidence, it is time that legislation imposing differential taxation on anthracite be repealed, thus lowering the cost on that commodity to the consumer.

# Improved Blasting Methods Increase Proportion Of Lump Coal in Output*

## Standard Shooting Practice Should Be Adopted—Shothole Placement, Size of Cartridge, Kind of Stemming, All Exert Non-Cumulative Influences

By **J. E. Tiffany**†
Pittsburgh, Pa.

SUCCESSFUL coal marketing usually hinges upon the thoroughness of preparation and the percentage of lump contained in the mine product. Methods employed in blasting the coal from the working face and all operations incident thereto are of primary importance because subsequent care in preparation cannot atone for lack of skill in bringing the coal down. In order to obtain a more marketable product and simultaneously increase safety and efficiency in coal shooting it is necessary to standardize all operations incident to mining.

No standard round of shots applicable to all mines is possible because working places differ greatly in width and height. Furthermore, coal beds vary appreciably in texture and in the number and position of the bands of impurity contained. By proper investigation, however, it usually is possible to devise a standard method applicable to any particular mine. How this may be accomplished and the result of tests made by the U. S. Bureau of Mines will be here set forth. These tests show the relations existing between the methods of placing and charging the holes, the actual quantity of lump produced and the possibilities of improving blasting practice. The trials here depicted were carried out in two large mines working the Pittsburgh bed, and in one southern Illinois mine, of 4,000 tons capacity, working the No. 6 measure of that state.

The first two investigations were prosecuted under a fellowship agreement with the Carnegie Institute of Technology; one in the Naomi mine of the Hillman Coal & Coke Co. at Fayette City, Pa., and the other in the Banning No. 2 mine of the Pittsburgh Coal Co. at Whitsett, Pa.

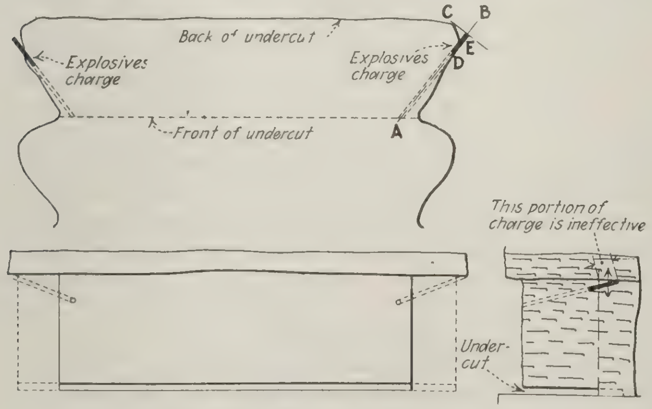

**Fig. 1—A Gripping Undercut**

Sumping the machine at an angle to the rib and withdrawing it in a similar position results in the back of the cut being wider than the front. Rib holes are liable to be drilled into solid coal thus seriously decreasing the effectiveness of their explosive charges.

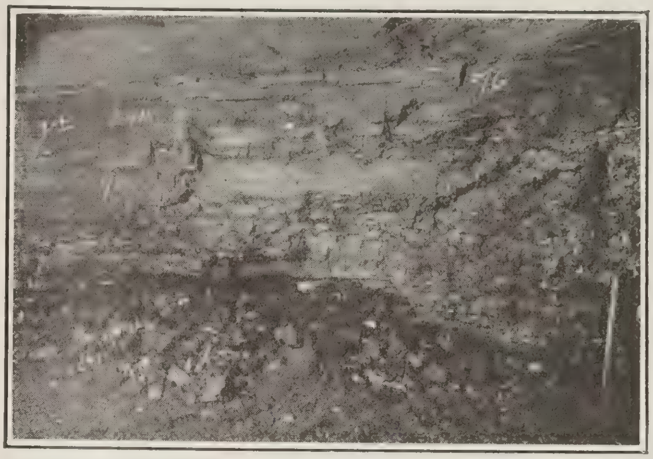

**Fig. 2—Results of a Snubbing Shot**

Snubbing may be accomplished by hand picking, by wedging, by mechanical means or by the use of explosives. This illustration shows the effect of firing a light shot in a shallow hole drilled near the center of the face a short distance above the undercut.

Assuming that it is desired to improve the product of a given mine, how shall the necessary investigation proceed?

A thorough inspection of all working places is the first step. In this work the physical characteristics of the coal bed, particularly as to friability, must be considered. Observations should also be made of the thickness and hardness of each bench, and the position, nature and thickness of the bands of slate and bone, also the character of the roof and bottom. Where shots are fired in working places their effect on the coal, roof and ribs should all be carefully observed. Inspections made in other mines working under similar conditions often prove of value and may furnish worthwhile suggestions for the solution of the problem in hand.

In mines where improvement in the quality of output is desired, a standard method of drilling and shooting is seldom in vogue. The placement and direction of shotholes with respect to the ribs, the roof, and to each other, vary widely. As a rule blasting charges are found to be excessive and not properly confined by a sufficient quantity of incombustible stemming. As a result evidence can frequently be discovered of blown-out shots. Entirely aside from the hazards attending such practices, the explosive has no chance to produce effective results. The coal will be found to be much broken and in many cases is not loosened in a manner suitable for loading onto mine cars.

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*Abstract of paper entitled "Recent Developments in Shooting Coal" presented with the approval of the acting director of the U. S. Bureau of Mines, before the West Virginia Coal Mining Institute, Nov. 24, 1925. Mr. Tiffany covered the same subject at the Coal Mining Institute of America, Pittsburgh, Pa., Dec. 10, 1925.

†Explosives testing engineer, Pittsburgh Experiment Station, U. S. Bureau of Mines.

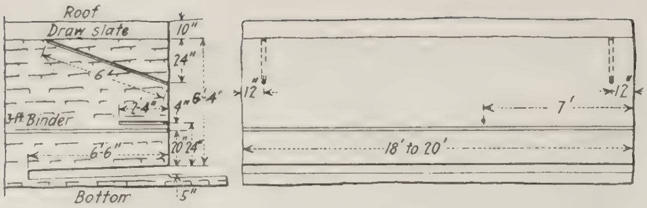


**Fig. 3—Placement of the Snubbing Shot**

In this case the snubbing shothole was drilled 2 ft. 4 in. deep and placed 2 ft. above the kerf and 7 ft. from the right hand rib.

When these observations have been completed, formulation of a new system which may lead to a standard practice in drilling and blasting may be commenced. The method of shooting should no longer be left to the judgment of each individual miner. The quantity of explosive loaded into each hole will also have to be standardized. Different methods must be tried out under strict supervision and, if possible, the coal produced should be screened separately so as to ascertain which practice yields the maximum percentage of lump.

Investigations in the southern Illinois mine referred to continued for more than two months before a suitable blasting method was evolved. During this time no attempt was made to change the practices followed by the miners. During the first month after the standard method was adopted no improvement was noticeable in the quantity of 6-in. coal. During the second month, however, better results became apparent and an increase of 1.53 per cent above the average of the ten months prior to the commencement of the investigation was noted. Some of this improvement may have resulted from the use of 1¼-in. diameter cartridges in place of 1¾ in., which they supplanted. During the second month the lump coal was increased by 2 per cent; this improvement unquestionably being due to the standard methods adopted together with the reduction in cartridge diameter. Through all subsequent months this improvement was sustained and the good results obtained were further improved by instructions given the miners, by closer supervision and by the co-operation of all interested parties, both mine officials and miners.

Close supervision of blasting and all the operations incident thereto is a major factor in any campaign to increase the percentage of lump coal. This should start before the faces are cut. A place that is properly cleaned before undercutting will give better results than one in which the face overhangs and the corners are not square.

**Fig. 4—Tight or Buster Shot in a Slant Hole**

Much of the coal loosened by this kind of a shot merely settles down in place without being thrown or rolled out upon the mine floor. It requires considerable pick work to dislodge it ready for loading.

Fundamentally an explosive must have at least two free faces of coal to work upon in order to bring down the material properly. For this reason it is necessary to produce one of these faces artificially by either hand or mechanical undercutting or by an over-cut, middle-cut or shear. A shearing cut may also be used in combination with either one or both of the other operations. These cuts should be made as carefully as possible in order to obtain rectangular faces. Each cut must be uniform in depth and must not grip at the ribs. If the cut grips at the ribs the tendency is to grip the drillholes also. When such holes are charged and fired they do not bring the coal down in a satisfactory manner and since it is wedged at the ribs it does not roll forward into the working place. This fosters the natural tendency on the part of the miner to use excessive charges of explosive. Such charges do not improve conditions, while they shatter the coal seriously.

Gripped holes are frequently drilled beyond the cut as shown in Fig. 1. When fired, the explosive lying in the solid cannot perform a maximum of useful work, consequently it shatters the coal immediately about it and may exert undesirable force upon the roof. This is particularly the case if coal is left up as a roof protection. This constitutes an additional hazard in mining, for when the roof is injured in blasting greater difficulty and cost is entailed in preventing it from falling.

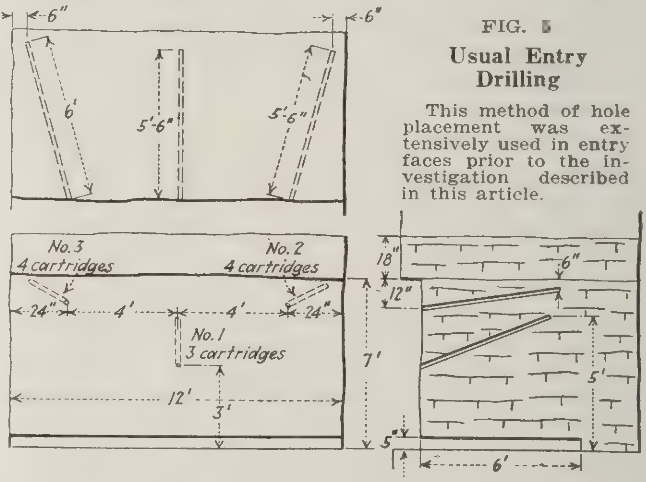


FIG. 5

**Usual Entry Drilling**

This method of hole placement was extensively used in entry faces prior to the investigation described in this article.

Tendency to make cuts gripped at the ribs is common to all types of mining machines, the breast machine included. However, with this latter type another difficulty is encountered, namely, that small pillars or noses of coal, commonly called "sprags," are liable to remain at the back of the undercut. With some types of turret machines, also, a place cannot be cut to uniform depth. It is possible, however, by the exercise of proper care, to cut the ribs in a direction parallel to the line of sights. When undercutting has been completed a still further improvement may in many cases be made by snubbing; that is, by increasing the height of the undercut along its outer edge by picking or blasting.

Where snubbing is practiced the coal usually rolls forward into the room when it is loosened by the blast. This breaks the material less than when the explosive is called upon to perform the double duty of both breaking the coal down and turning it over. In snubbing tests made at the Naomi mine an increase of 5 per cent—from 64.2 to 69.2 per cent—in the proportion of coal passing over a 1¼-in. bar screen was obtained. However, when these same tests were repeated in the Banning No. 2 mine, where the coal has different physical characteristics, snubbing did not always result in rolling it forward. In this mine the coal clung to the ribs and snubbing proved of no particular advantage. While hand snubbing produced more lump coal in the Banning No. 2 mine than was obtained from unsnubbed shots, the improvement was not sufficient to offset the quantity of slack produced in the cutting and snubbing operations.

Fig. 2 shows the result of a snubbing shot placed as shown in Fig. 3. The proportion of lump obtained with this snubbing shot was more than 1 per cent higher than that produced by hand snubbing. In a room 20 ft. wide several tons of coal is picked down in snubbing, only 40 per cent of which is 1¼-in. lump. Almost 10 per cent of slack is produced in such a room as the result of both cutting and snubbing operations.

Tests should, therefore, be made before deciding upon the adoption of snubbing in any particular mine. It will be found that where the coal does not cling to the ribs after being shot, snubbing will permit it to turn over instead of remaining in an upright position. The snubbing operation can be performed by explosives, by hand, either using wedge and sledge or pick, or by mechanical methods, such as air-driven punchers, drills or hammers, or by electric chain machines.

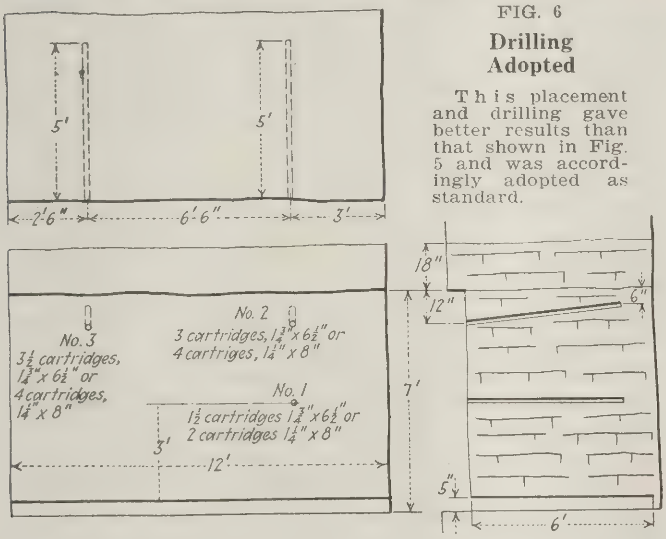


FIG. 6

**Drilling Adopted**

This placement and drilling gave better results than that shown in Fig. 5 and was accordingly adopted as standard.

Undercutting does not yield its full advantages unless the cut is cleaned out before shooting. This detail should be given close attention. The miner or the machine runner's helper should be provided with a scraper or long-handled shovel for this purpose. Bugdust cleaned out from such a cut should be loaded before shooting.

According to L. E. Young, in a paper presented before the American Mining Congress, May 29, 1925, "Data are not available to warrant definite conclusions but the outlook is that a combination of shearing and snubbing will prove to be the most desirable practice for mechanical loading; for the success of mechanical loading depends very largely on how the coal is shot down." To this might be added the further fact that improvement will accrue to proper placing of the shotholes, since this forms one of the most important technical details of blasting operations. In order to shoot a place satisfactorily, either for hand or for machine loading, the ribs must be cleaned properly and the mass shot be so shaken up that it can be shoveled with as little pick work as possible. Improperly placed holes, which have to be heavily loaded in order to bring down the coal, will shatter the material adjacent to the explosive charge, while at greater distances from it fissures will be produced even in the material left in place. This adds to the difficulty of firing subsequent shots. The quantity of coal thus shattered decreases as the placement of the holes is improved, while simultaneously the quantity of explosive necessary will be decreased.

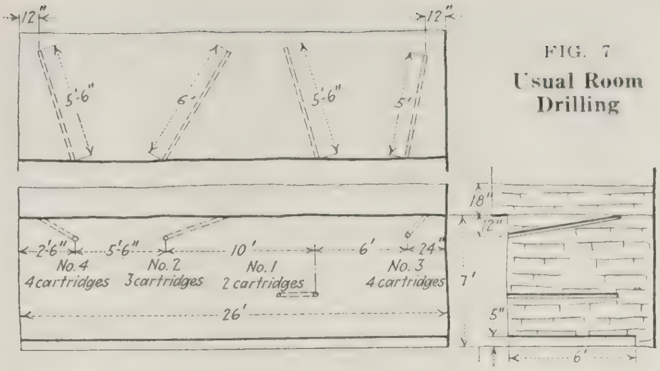


FIG. 7

**Usual Room Drilling**

Proper placement of shotholes will depend upon the texture of the coal and the direction and nature of the face and butt cleats. In the Banning No. 2 mine, tests were conducted with working places 10 and 18 ft. wide on both the butts and faces. Shot holes were placed in the same manner for each test and the same brand of explosive was used. As might have been expected, the narrow butt workings gave the poorest results, 54 per cent of lump, while the wide faces afforded the best.

Shotholes that slope up at an appreciable angle, such as are commonly employed in the Pittsburgh bed, have many disadvantages, which will be discussed later. Fig. 4 shows the result of firing a tight shot in a wide butt working.

In the tests in the Pittsburgh bed, where the coal mined ranges from 6 to 7 ft. high and the working places were 10 ft. wide in entries and 20 ft. wide in rooms, it was found that only two holes were necessary. In most places where lump coal is an important consideration, better results are procurable by using only two holes. Where the coal is of a tougher nature, however, especially if it becomes necessary to use heavy charges of explosive, it is found better to employ more holes charged lighter. A common practice followed in the Pittsburgh bed is to place the holes from 12 to 15 in. from either rib and 2 ft. below the draw-slate. Such holes are drilled parallel to the rib but sloping upward toward the roof at such an angle that the farther end is about 4 in. below the draw-slate and 6 in. in front of

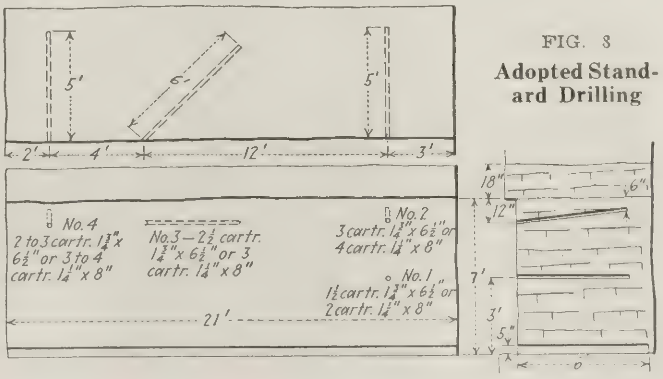


FIG. 8

**Adopted Standard Drilling**

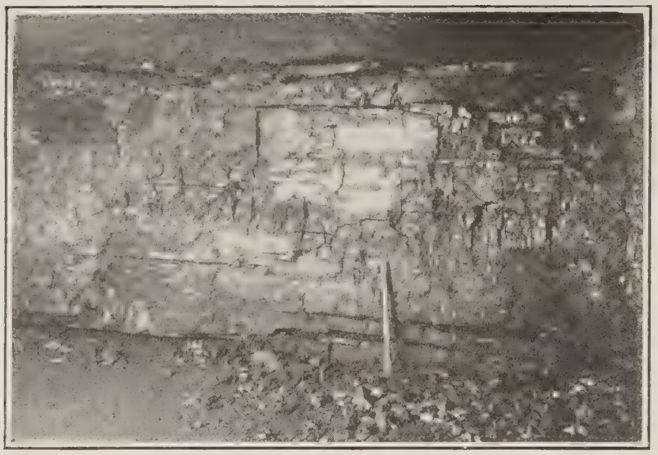


**Fig. 9—Result of a Tight Shot in a Slant Hole**

This coal merely is cracked and will require quite a bit of picking to bring it down ready for loading out. This imposes much more work on the miner than a shot that rolls the coal well out on the floor.

the rear of the under-cut. In other words, a vertical line dropped from the rear end of the hole would reach the kerf 6 in. ahead (that is, nearer the face) of the back of the under-cut. As a rule about 2-in. holes are drilled. These are commonly employed in the coke regions of Pennsylvania where lump is no particular object. One hole, known as a "buster" or breaker shot, is placed at the center of the face, or at some point between the rib holes.

As a rule, in narrow work the necessity for a third hole will depend largely upon the texture of the coal. In southern Illinois where the cleats are less pronounced and the texture is of a tougher nature, a third hole was drilled, as shown in Fig. 5. After making a number of tests it was found advantageous to place No. 1 hole 3 ft. above the bottom and the same distance from the rib. This was drilled relatively flat, as shown in Fig. 6.

In the No. 6 bed of southern Illinois the "blue band," a streak of hard gray shale, about 1½ in. thick, occurred in the mine investigated at a uniform height of approximately 18 in. above the floor. This had to be considered when placing the shotholes. Presence of this blue band led to the adoption of snubbing, usually accomplished by firing a snubbing shot. The hole for this shot should be drilled in an almost horizontal position, as shown in Fig. 7. Fig. 8, however, shows the method of drilling finally adopted as standard. Four holes are used, their numbers on this drawing indicating the order in which they are fired.

**Fig. 10—Result of a Tight Shot in a Flat Hole**

In this case the coal is much more broken than in Fig. 9. However, snubbing before shooting probably would have improved the results attained.

Side holes should always be drilled parallel to the line of sight and should be from 1 to 3 ft. from the rib, depending on the kind of shear which they will produce. Tests made in the Pittsburgh bed showed that for a tight shot a distance of 12 in. was most advantageous, both from the standpoint of lump production and that of obtaining a good shear. Better results, however, were obtained in the tougher Illinois bed with holes placed 3 ft. from the rib.

Relatively flat holes drilled 10 in. below the top of the coal produced 5.1 per cent more lump than did those started 24 in. below the top and slanted upward. Fig. 9 shows the result of firing a tight shot with a slating hole, while Fig. 10 displays the result of the same kind of a shot with a flat hole placed as shown in Fig. 11. The results of a butt shot are shown in Fig. 12.

No hole should ever be charged with a greater amount of permissible explosive than the limit prescribed by the Bureau of Mines, or 1½ lb. per shot. The present published list of permissibles contains brand names of about 150 explosives. Those commonly used in coal mining are to be found in Class 1a, the principal ingredient of which is ammonium nitrate. Both the safety and physical characteristics of these explosives have been tested by the Bureau.

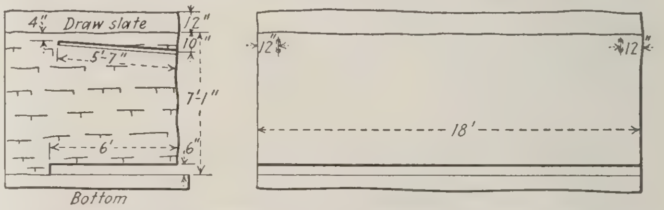


**Fig. 11—Placement of Flat Holes in Room Face**

No snubbing was here attempted. Pitching the holes flat or nearly so allows the explosive to exert its force in a direction at right angles to the bedding planes of the coal.

Permissible explosives possess three characteristics which influence their production of lump coal, namely, density, unit deflective charge, and rate of detonation. The Bureau publishes the weight in grams of the 1¼ x 8-in. cartridges of each explosive. These weights vary from 137 to 181 gm. or more, corresponding to a stick count of 165 to 125 per 50-lb. case. In the lighter brands 3⅓ sticks of 1¼x8-in. size weigh about a pound; in the heavier varieties about 2½ sticks. The lighter a cartridge the greater will be the distance along the borehole throughout which the explosive force generated by it will be distributed, provided a unit deflective charge is considered. The unit deflective charge is that weight of an explosive in grams which will give the same swing on the ballistic pendulum as 227 gm. (½ lb.) of the 40 per cent, straight nitroglycerin dynamite adopted as a standard by the Pittsburgh testing station of the Bureau of Mines.

It has been found by tests conducted on five different brands of explosive, used under identical conditions but in quantities proportioned according to their respective deflective charges, that each explosive brought down the same quantity of coal, with, however, different proportions of lump. The rates of detonation of these explosives vary and to this was attributed the difference in the percentage of large size produced.

The rate at which a file of explosive detonates in feet or meters per second is known as its rate of detonation. Fig. 13 shows the relation between the rate of detona-

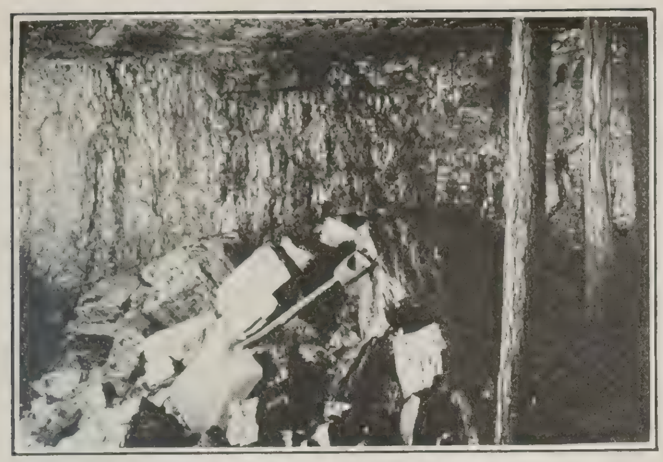


Fig. 12—Result of a Butt Shot

At many, if not most, coal operations the percentage of lump coal in the mine product determines the margin of profit that can be made, because the lump is the only grade that can be sold at a price appreciably exceeding the cost of production. Apparently this shot produced a satisfactory proportion of this size.

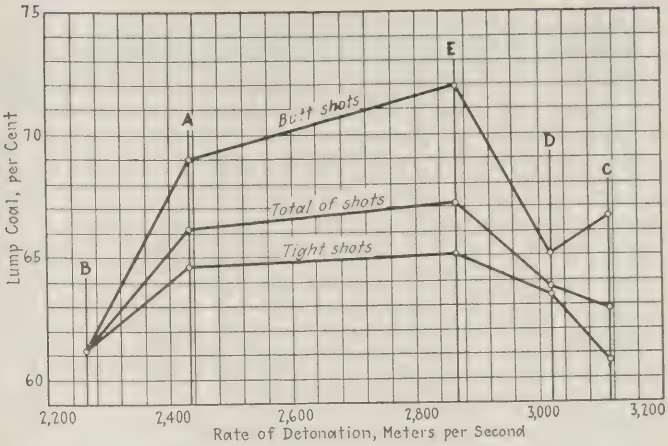


Fig. 13—Influence of Detonation Rate on Proportion of Lump Produced

Naturally, tight shots produce less lump than butt shots. A certain rate of detonation also tends to make the percentage of lump a maximum. Any rate greater or less than this critical speed will have an adverse effect on the size of the coal produced.

tion and the percentage of lump coal produced in the five tests made. The highest point of these graphs indicates the permissible explosive having the detonation rate most suitable for the physical texture of the coal mined. Any explosive having a detonation rate either greater or less produces a decreased percentage of lump, this decrease being proportional to the variation in the detonation rate.

In loading a borehole in coal all the cartridges required should be placed together at the rear of the hole with the primer (the cartridge containing the detonator) placed last or nearest the collar. The fulminate end of the detonator should point toward the main body of the charge. A wooden tamping stick should be used to push the cartridges home. Incombustible stemming only should be employed, as coal dust or slack invites disaster by explosion. Moist clay forms an excellent stemming material and can be made up into dummies. Where a plastic material is not available, however, the stemming may be placed in tamping bags. The first two dummies should be pressed lightly against the explosive charge, while the remainder of the stemming should be tamped forcibly into the drill hole, which should be filled to its mouth. In firing such a charge a lead wire not less than 100 ft. in length should be employed. The shotfirer should never detonate a shot except from some point where he cannot be injured. Wherever possible it is good practice to fire one hole at a time and load out the coal brought down by it before firing the next shot. Tests in a Pennsylvania mine have shown that when all the coal loosened by the tight or buster shot was loaded before the butt, or second shot, was detonated, 2.6 per cent more lump coal was produced than when only about half the coal loosened by the tight shot was loaded out before the second shot was detonated.

As a rule, best results are attained when cartridges of appreciably less diameter than the hole into which they are loaded are employed. In the Illinois tests where 2-in. holes were loaded with 1¼ x 8-in. cartridges, in place of 1¾ x 6-in., because of the excessive quantities of explosive used prior to the tests, the substitution could be made on a stick-for-stick basis. Where only a proper charge of 1¾ x 6-in. cartridges have been employed, about one more cartridge of the 1¼ x 8-in. size was necessary. By this means the air-space as well as the length of the charge was increased. Theoretically, the use of a cartridge of small diameter should result in the production of a greater percentage of lump coal, because when the same weight of charge is used the smaller diameter greatly increases the length of charge.

Quantitative tests have shown that when 1-in. cartridges were substituted for those 1¼ in. in diameter, 4.9 per cent more lump passing over a 1¼-in. screen was produced. In actual practice, however, a cartridge as small as 1 in. should hardly be employed, because, as

Fig. 14—Tight Shot With Air Spacing

In loading this shot a wire spacer was interposed between the explosive charge and the stemming. This afforded a cushion against which the explosive might act. The explosive force thus was spread over a larger internal area of the borehole than would have been the case had the spacer been omitted.

the diameter is decreased, deterioration of the explosive in storage is increased. A 1⅛-in. cartridge, however, may be used to advantage under ordinary circumstances.

Methods other than decreasing the diameter of the cartridge may be employed for aircushioning. For example, a wire spacer or a paraffined pasteboard tube may be used, or rock dust may be employed for all or a part of the stemming. Under certain conditions more lump coal may be produced by a combination of two or more of these methods. The use of spacers, however, of whatever kind, does not meet the requirements of some state laws and up to the present time the Bureau of Mines has neither approved nor condemned their use.

In using a wire spacer the explosive is placed in the bottom of the drill hole, the spacer pushed in next and the remainder of the hole tightly tamped to the collar with clay stemming. By this method an increase of 5.4 per cent in lump coal has been obtained. Fig. 14 shows the result of a tight shot loaded in this manner. An increase of 7.4 per cent in lump was obtained by combining this method with snubbing. Fig. 15 shows the result of a tight shot and Fig. 16 that of a butt shot with this type of loading.

Investigations have also been made with rock dust stemming and methods of loading that comply fully with the statutes of Pennsylvania, which require that a hole must be tamped solidly with incombustible stemming throughout its entire length. For this reason, in the test all dummy cartridges were made of the same diameter as the hole, which in turn was entirely filled. Two different rock dusts were employed, namely, a limestone and a shale dust. About 85 per cent of each variety would pass through a 200-mesh screen. Both dusts were tested with a 6-in. clay plug tamped in the collar of the hole. The limestone dust was also tried without clay plug and with one 24 in. long.

Under similar conditions of tamping, the limestone gave a higher percentage of lump coal than did the shale dust. This variation may be explained by the different actions of the two materials. The limestone appeared to act as a medium for transmitting the force of the explosion uniformly throughout the entire length of the drillhole, while with the shale the action more nearly approximated a cushioning effect due to the packing of the dust into a smaller volume.

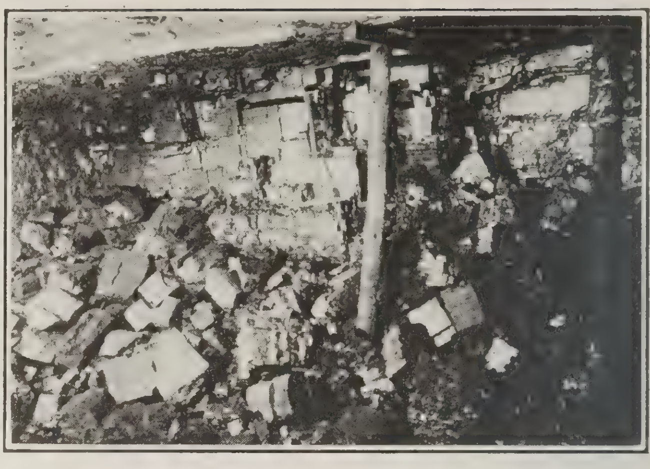


**Fig. 16—A Butt Shot Snubbed and Air-Spaced**

Note the large percentage of lump coal produced. Such results as these indicate emphatically that the realization for the total output may be appreciably enhanced by departing from the "by-guess-and-by-gosh" methods followed by most miners in the matter of shooting, and substituting therefor carefully systematized practices that have been painstakingly established as the result of actual experiment.

When rock dust stemming was employed in a slating hole, 4.3 per cent more lump coal was produced than with moist clay, while 5.1 per cent more large material resulted from a flat hole than was obtained with moist clay in a slant hole. However, when these results were compared with those obtained with a flat hole and moist clay stemming, the increase was only 0.8 per cent.

After a standard method of shooting has been worked out carefully and found applicable to the majority of places within a mine, it should be put into effect and rigidly adhered to. A standard method properly enforced, even though it may not be the best available, is far better than as many different ways of shooting as there are miners employed.

Coal mine executives desiring to increase the proportion of their lump product should carefully consider the following details: Drilling and shooting practices should be standardized and closely supervised. The ribs should not be permitted to grip the under-cut, which should be of uniform depth. All bugdust should be cleaned out of the under-cut with a scraper or long handled shovel before the face is shot. After each shot the coal brought down by it should be loaded out. Side holes should not grip the ribs. All shot holes should be drilled parallel to the bedding planes. Overloading shotholes should be avoided; this will decrease the proportion of lump coal. Each hole should be tamped full with incombustible stemming material. If proper attention is paid to these details, an increase in the proportion of lump coal produced may be confidently expected.

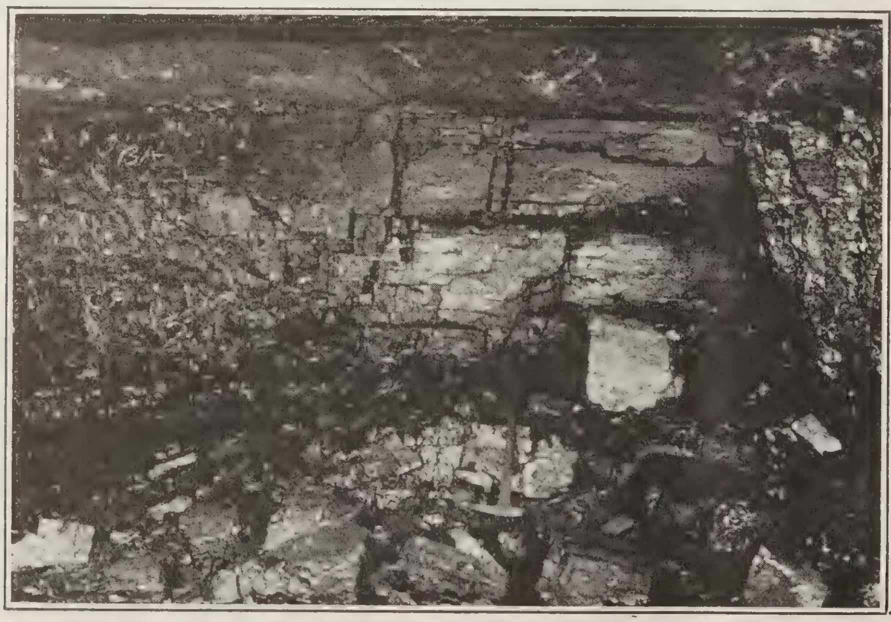


**Fig. 15—Effect of Both Snubbing and Air-Spacing**

This was a tight shot, yet as may be seen a fair proportion of lump was realized. Any one improvement in shooting may appreciably increase the proportion of lump yielded, but these betterments are not addable, that is, total improvement secured from two improved practices will not amount to the sum of the betterments attributable to these methods used singly.

# Fordson Engineers "Span" Their Difficulties

By **J. H. Edwards**
Associate Editor, *Coal Age*
Huntington, W. Va.

DISPOSAL OF MINE REFUSE by aerial tram is now commonly employed at many of the larger mines in the mountainous sections. Usually the tramway carries the material up over the top of a steep hill and dumps into the adjacent hollow. In such cases the track ropes are supported directly from towers located on either side of the valley.

A somewhat different set of natural conditions was encountered at mine No. 5 of the Fordson Coal Co., at Stone, Ky. There it was desired to dump the refuse along the center of a long gradually-ascending hollow, the mouth of which is close to the tipple. Because of the distance to the outer tower and the contour of the ground it was necessary to provide several intermediate supports for the track cables. Construction of towers for two of the four supports would have been exceedingly expensive, and, moreover, at these points towers would have been liable to damage from burning refuse. At these two points aërial supports are used. The ropes run at right angles to the track cables and are anchored on each side of the valley.

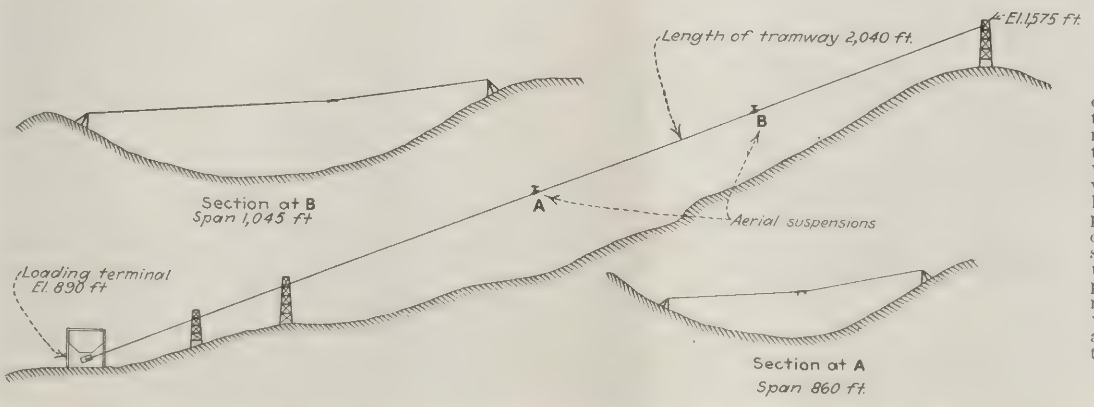
**Tramway Carries Refuse 2,040 Ft. Over Route Requiring Two Aerial Suspensions to a Dump 685 Ft. Above the Tipple**

The construction of supporting towers at every necessary point along the cableway was economically out of the question because of the contour of the ground. So at two locations suspensions were installed, one of them requiring a rope span of 860 ft. and the other a span of 1,045 ft. The inset of the central illustration shows one of the suspension fittings which consists of a box girder about 10-ft. long with a sheave at each end and with saddle-carrying legs suspended to provide flexibility. The drawing accompanying this article shows the locations of the two aerial suspensions. In the view at the right, taken from the operating platform at the dump, looking back along the line, smoke hides the aerial suspensions. Two buckets are used on the tramway, one going out loaded with 4,000 lb. of refuse, while the other returns empty to the tipple.

A double cable is used to support the aërial hanger. This hanger consists of a box girder about 10 ft. long having a sheave at each end. Neither of the suspension ropes is dead-ended at the hanger but instead both are looped around the sheaves. The saddles supporting the track ropes are fastened on brackets projecting from the vertical legs which are suspended from the short girder.

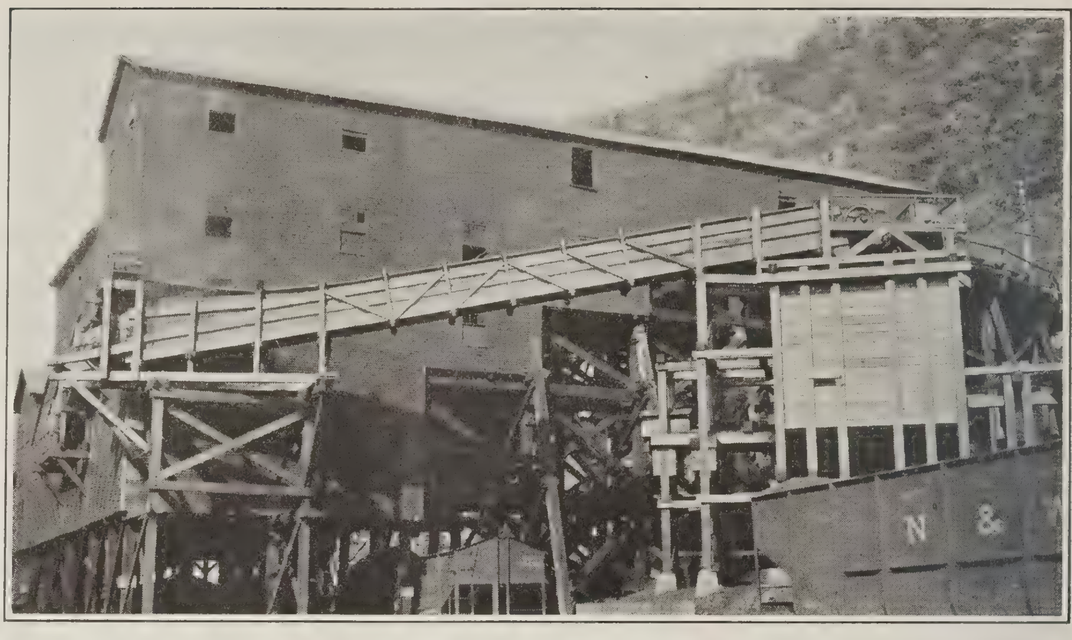
This tramway at No. 5 mine is one of five being installed by the Fordson Coal Co. for refuse disposal. All are of the two-bucket type, one bucket going out loaded while the other returns empty. Except for the aërial suspension feature, a description of the No. 5 tramway holds good for those being installed at the other mines.

The bucket capacity is 50 cu.ft., or, expressed in another way, it holds approximately 4,000 lb. of refuse. The tramway is designed for the disposal of 50 tons per hour of material weighing 80 lb. per cubic foot. A feature of the design is the arrangement at the loading terminal for one-man operation. The electrical controls



**The Ford Line**

With a distance of 2,040 ft. between the loading terminal and the outer tower, and a deep valley between, it was necessary to have several supports for the track cable. The two supports near the upper end were provided by spanning the valley with cables running at right angles to the main ropes.

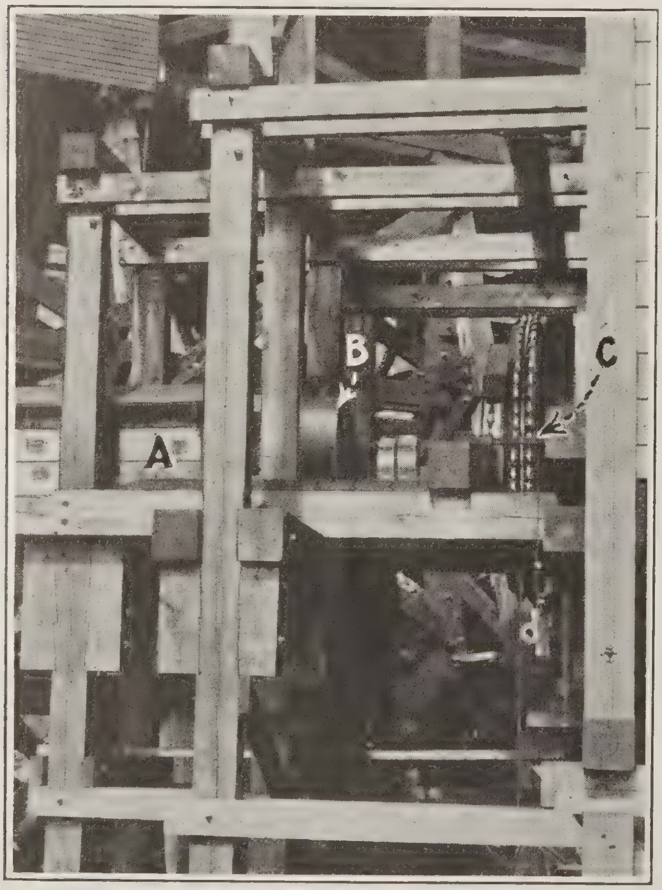


**Belt Feeds Rock to Tram Bin**

This shows how the refuse is conveyed from the No. 5 tipple to the bin of the loading station. The cars of refuse are dumped in the tipple into a bin which feeds directly into the large conveyor. That coming from the picking tables is carried to the main conveyor by a small conveyor at the left, on the side of the tipple.

are located on the platform between the bucket-loading positions. The operative needs to move but a few steps to open the gates which fill the buckets and to manipulate the control and brake mechanism of the driving equipment.

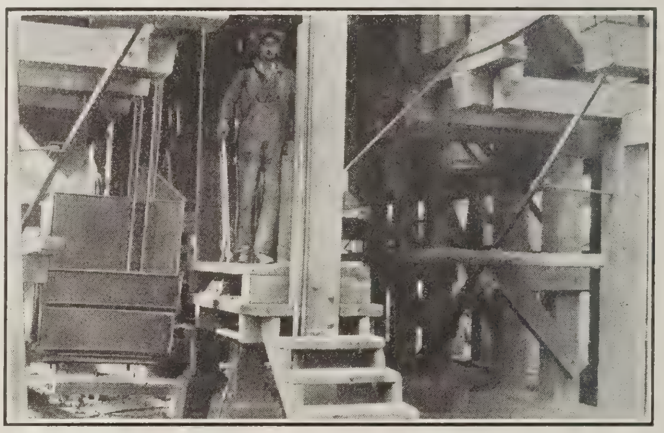
The motor driving the traction cable is connected to the sheave through a speed reducer. Much space is saved by this arrangement as compared to a belt drive or to a drive through several reductions of spur gearing. A reducer has the additional advantages of efficiency, reliability, and safety. The motors, reducers and other mechanical parts are the same at each aërial tram installation. This is a decided advantage from the standpoint of successful operation, maintenance and repair.



**Driving Mechanism of the Tramway**

The use of a speed reducer simplifies the installation. Maintenance cost is held to a minimum by using the same type and size motors, reducers, etc., at the five installations.

Where the tipple is not modern it is usually difficult to arrange for elevating the refuse to the bin of the bucket-loading station. An illustration shows how this was done at the No. 5 mine. The fact that the old wooden tipple will probably be replaced within a few years by a steel structure, no doubt influenced the method used. That refuse which is loaded separately into mine cars is dumped into a bin which feeds directly into the conveyor extending from the corner of the tipple to the top of the loading station. The refuse from the picking tables is elevated into the main conveyor by the short conveyor which, in the illustration, can be seen along the end of the tipple.



**At the Dump End of the Line**

This shows the operator's platform under the bin at the loading station. The controller and brake lever are within 4 ft. of the gates through which the refuse is loaded into the buckets, thus providing one-man operation. The 50-cu.ft. buckets carry about 4,000 lb. of refuse.

Although the topography of the ground near each mine is different, the methods employed at No. 5 will in the main be duplicated. However, where conditions are such that considerable expense may unnecessarily be involved, variations, no doubt, will be made in the plans.

# Recovery Work at Rockwood Required Much Skill

## After Explosion Killing Ten Men in Reopened Fire Area of Tennessee Mine, Crews from Four States Labored in Trouble Zone

By **R. M. Lambie**
Chief, West Virginia Department of Mines, Charleston, W. Va.

MEN OF FOUR STATES on Oct. 22 took part in the recovery work that followed the explosion last summer in the Rockwood mine at the foot of the Cumberland Mountains in Roane County, Tennessee. The blast occurred at 5 o'clock on the morning of July 23 in the Rodgers Entry of the mine, killing ten men, including the mine superintendent, just as they were beginning anew a fight to extinguish a fire that had been sealed up for three months. Fire in the mine assumed such proportions that the affected zone had to be sealed off for three more months before the bodies of eight of the ten men could be removed. Picked men from Alabama, West Virginia, Pennsylvania and Tennessee did the work.

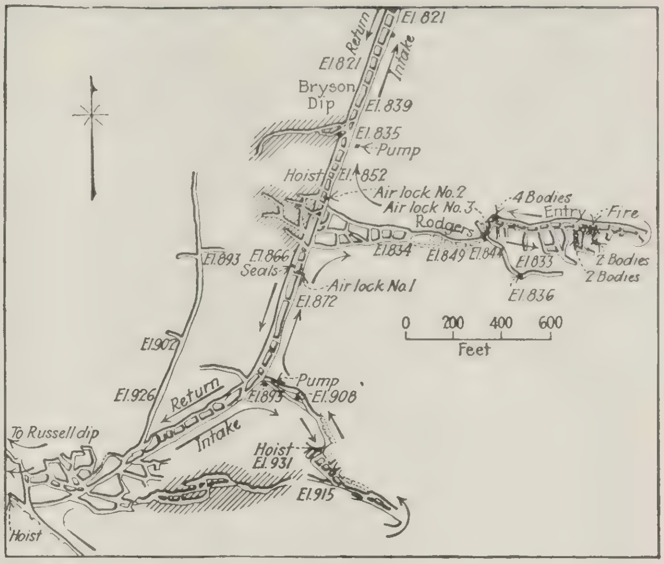
This mine is owned and operated by the Roane Iron Co. It was originally opened by Gen. John T. Wilder in 1868. The coal mined is the Sewanee seam. This seam has some unique features, some sections being on the pitch, others being level and irregular in thickness, ranging from 2 ft. to 30 ft. Owing to the uncertainty of the seam, no regular and uniform plan of development can be projected or carried out, as one can only be governed by conditions.

The mine is divided into three sections, each section having a separate ventilating current. The fan is located approximately 150 ft. above the level of the drift, and forces into the mine workings 150,000 cu.ft. of air per minute, which returns to the main entrance and two other openings back on the mountain where the coal outcrops. This mine liberates explosive gas irregularly, but is operated with open lights. Fire bosses make their examinations daily preceding the entrance of the workmen.

### CONDITIONS IN THE RODGERS ENTRY

The Rodgers Entry, in which the explosion occurred, is turned off the Bryson Dip and is worked on the double-entry system. The entry dips rapidly from the mouth for 300 ft., then continues level. The air course to this entry is irregular, some points being 20 ft. below or above the level of the entry. For a distance of 600 ft. from the mouth of the entry there is room for only the heading, air course and sidetrack, due to rock faults on both sides. The coal area then widens. Rooms are turned to the right, and the air course meanders around following the line of fault. This irregularity of the seam presents some unusual problems in ventilation and transportation, and makes this an expensive mining proposition. All of the coal produced is used at blast furnaces.

The cause of the explosion is undetermined, but the consensus among local mining men is that an accumulation of gas was ignited by the rekindling of a mine fire. The fire had been burning since April 18, 1925, and had been sealed up for ninety days. After reopening the fire zone, the entire area was explored and men began to clear up the slate falls and load out the coke. While this was going on heat and fire were discovered. Six men were detailed as water carriers and three were assigned to load out the burning coals. This work was in charge of the mine superintendent.



**Map of Affected Area**

The troublesome fire and the uneplained explosion occurred in Rodgers Entry, July 23, 1925. That part of the mine was sealed off at once and the bodies of eight of the ten men killed were left in the workings until Oct. 22 when the recovery work was carried out.

### EIGHT BODIES LEFT ENTOMBED

Then came the explosion. The ten men were killed. The bodies of two of them, being only a short distance from the mouth of the entry, were found soon after. The smoke became extremely dense, and since it was apparent the fire was burning, it was deemed best to seal up these entries again, leaving eight bodies entombed.

It was impossible to place seals in Rodgers Entry at the point where they were formerly located, so a location 50 ft. outby the mouth of this entry was decided upon. Only two seals were required to seal the Bryson Dip and Rodgers Entry. Pipes were placed in these seals, and at weekly intervals air samples were taken and analyzed. Analyses showed a rapid decrease in the oxygen content with a heavy increase in methane. The sample taken on Oct. 21, 1925, showed the atmospheric condition inside the seals as follows: Carbon dioxide ($CO_2$), 3.3; carbon monoxide ($CO$), 0.0; oxygen ($O_2$), 0.7; methane ($CH_4$), 72.0 and nitrogen ($N_2$), 24.0.

### BUILD AIR LOCK ON HAULWAY

A fresh air base was established 500 ft. outby the seals. Here all modern equipment for use in recovery work was assembled. On the morning of Oct. 22, an air lock was built on the haulway outby the seal. This air lock was a heavy frame of two-by-fours with four ply of heavy white duck. A door 42x30 in. was made in this air lock with a double-ply check inside and outside. At this point the air registered 10,000 ft. per minute. This being inadequate, it was necessary to regulate the current on the other two splits. This change increased the volume at the breakthrough outby the air lock to 22,000 ft. of air per minute. No. 1 seal was then broken through, and rescue team No. 1, composed of five men, entered with self-contained breathing apparatus.

This team explored a distance of 800 ft. and decided upon a location for air lock No. 3. They then returned to air lock No. 1 where team No. 2 was stationed with apparatus ready to come to their aid had it been necessary. After a consultation, team No. 2 entered the sealed area and proceeded to a point on Bryson Dip where a rock stopping was taken down and air lock No. 2 was built. This was to cut off the Bryson Dip and lessen resistance.

After this had been completed, team No. 1 again entered the irrespirable atmosphere to the point decided upon for air lock No. 3 and built it before returning. Then both outer seals and air lock No. 1 were taken down and the air permitted to circulate to the points outby air locks Nos. 2 and 3.

### Ventilating Current Interrupted

Every precaution was taken from the fan to the innermost workings, and men were placed at stated distances along the travelingways. Unexpectedly the fuses on the electric line to the fan burned out. This caused an interruption in the ventilating current as it took some time to get the auxiliary steam fan in operation and the ventilation restored to normal. During this interruption a small quantity of methane leaked through the air lock as the pressure inside the seal was greater than the atmospheric pressure. Ventilation was conducted in the usual manner, that is, closing up the breakthroughs with temporary stoppings as the advance was made.

After cleaning out the gas to air lock No. 3, and when all places in advance workings had been explored, this air lock was removed and the air conducted throughout the entire section. This made it possible for the stretcher bearers to go without masks to the points where the bodies were found by the rescue squads.

### Apparatus Worked Perfectly

It took eighteen working hours to recover the bodies. Fourteen hours of this time was spent by the rescue teams under oxygen. All machines functioned perfectly, which showed extreme care on the part of the attendants at the base.

The men used in recovery work at Rockwood were these:

Team No. 1—W. H. Forbes, Huntington, W. Va.; Frank Cash, Birmingham, Ala.; George McCoy, Rockwood, Tenn.; Robert Lilly, Mount Hope, W. Va., and R. M. Lambie, Charleston, W. Va.

Team No. 2—W. J. German, Huntington, W. Va.; Clifford Saxon, Birmingham, Ala.; Harry Burdelski, Pittsburgh, Pa.; Arthur McNeeley, Rockwood, Tenn., and R. M. Lambie, Charleston, W. Va.

Other apparatus men who alternated with those on rescue squads were: George McCaa, Pittsburgh, Pa.; Dr. Merryweather, Birmingham, Ala.; W. S. Wilson, Rockwood, Tenn.; George Harden, Rockwood, Tenn., and Wm. Yant (Chemist), Pittsburgh, Pa.

Men in charge of the base were: C. O. Morris, Charleston, W. Va., and Stockton Gaines, Charleston, W. Va.

Inspectors patrolling intake and return were: Zach Evans, Handley, W. Va.; Andrew Holden, Dayton, Tenn., and George B. Thom, Decherd, Tenn.

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# Oxyacetylene Apparatus Has Standardized Connections

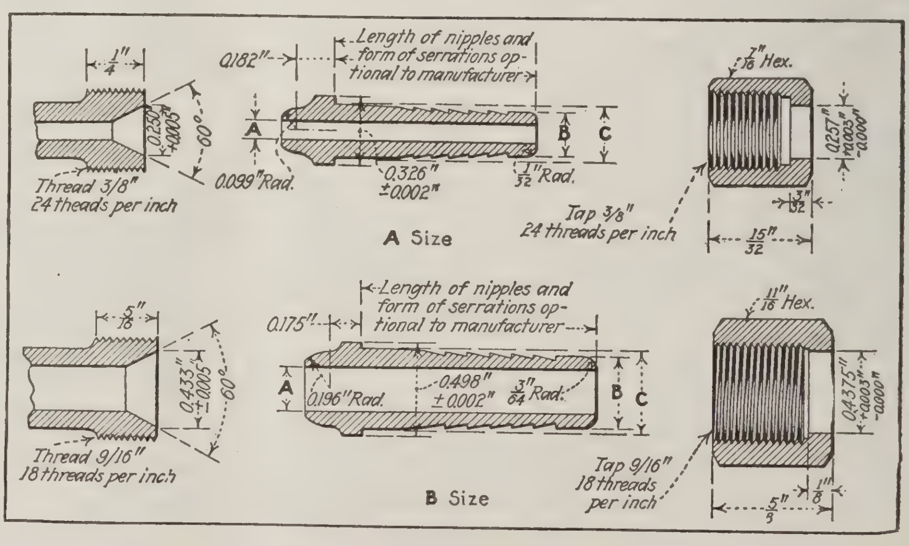
In the past, users of oxyacetylene welding and cutting equipment have experienced inconvenience when attempting to use the product of one manufacturer in conjunction with that of another. Thus in many instances a torch or hose of one make could not be attached to the regulator of another maker without the use of a special adapter. The trouble experienced was exactly analogous to that encountered before the standardization of bolt threads when much time was lost in every industrial establishment through the attempt of the workman to mate a "nut that was a little bit too small and a bolt that was a little bit too big."

The need for standardization of oxyacetylene equipment, particularly hose connections became so urgent that several manufacturers of such apparatus have agreed upon certain standard dimensions which will be adhered to by all, on and after Jan. 1, 1926. These dimensions are shown in the accompanying drawings, the *A* connections being for small torches and the *B* for large ones. Certain dimensions on these connections are optional with the manufacturer such as the length, number and contour of the hose serrations, but all threading and other important details are standard.

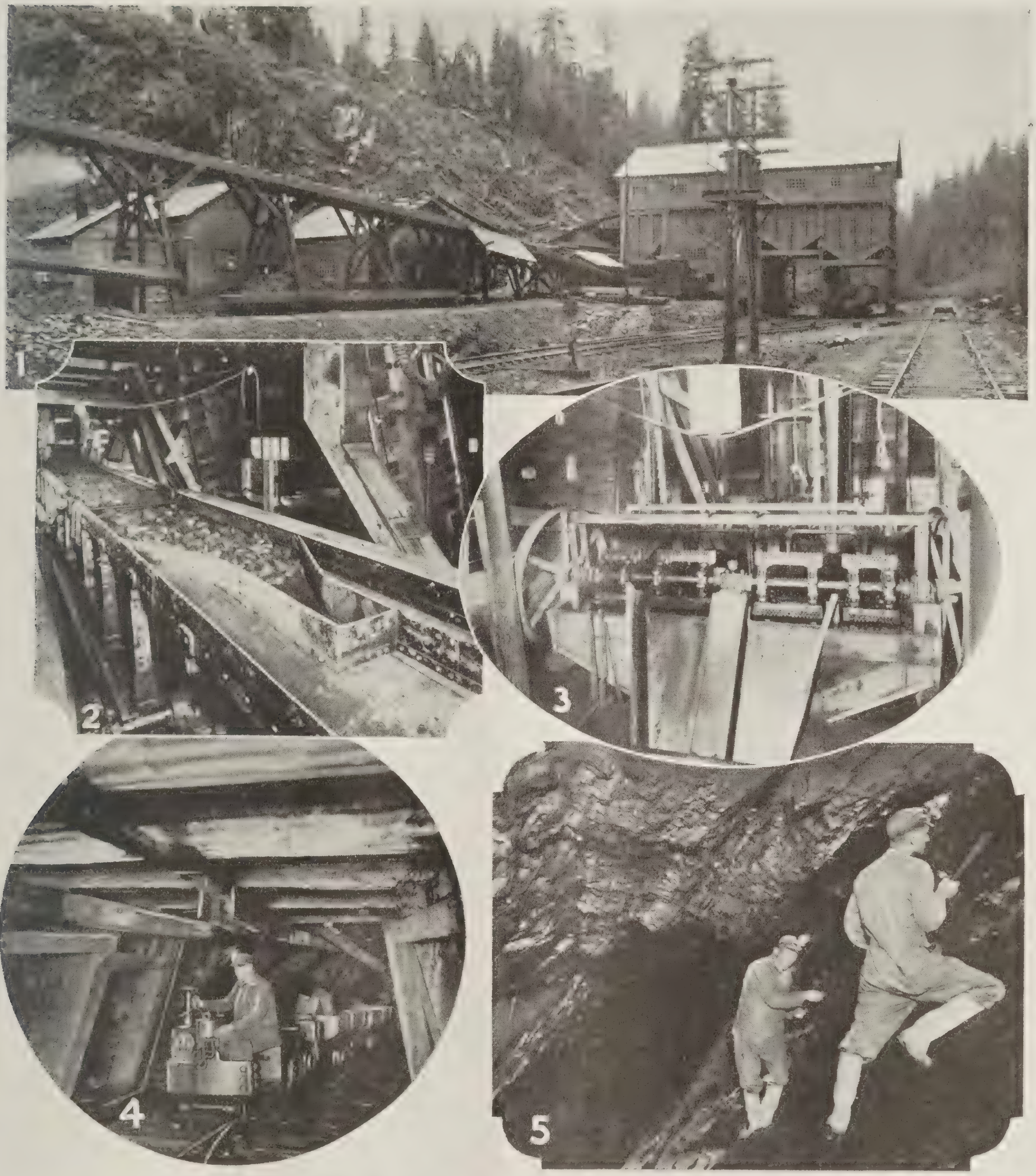
One other detail has been standardized. In order to eliminate the possibility of placing an oxygen hose on a fuel gas nipple or vise versa, righthanded threads have been adopted for oxygen connections and lefthanded ones for gas.

**Standard Design of Hose Connections**

All vital dimensions are made standard so that equipment from different manufacturers can be used without necessity for adapters. Oxygen connections are made with right hand and gas connections with left hand threads. All possibility of getting such connections interchanged is thus obviated.



# *Mining and Preparing Coal in the Far West*



### Another New Mine in the Pacific Northwest—Black Carbon, Near Seattle, Wash.

This plant of the Black Carbon Coal Co. in Pierce County, about 45 miles from Seattle, has been progressing through various stages of construction for three years. Now it is getting into its stride and is expected to produce 250 tons a day. Six seams of coal underlying the company's property contain more than 10,000,000 tons.

Mining is by hand on the chute-and-pillar system in coal that normally pitches about 60 deg. as shown in No. 5. By motor haulage (No. 4) the mine's output is delivered to the slope and hauled out by an endless rope. Drop bottom cars deliver into bins feeding balanced vibrating picking table screens (No. 2) separating the coal into three sizes to be washed in jigs. The discharge end of one is shown in No. 3. From the jigs all the coal goes back into a common drenching tank. It is removed by a 50-ft. flight conveyor over a fine screen and sprayed under high pressure before it reaches a revolving screen making three sizes for loading.

# Union Pacific Coal Co.'s Code of Standards—II[*]

### Lighting and Light Wires

1. Electric lamps shall be installed at all partings, switches, passageways that cross haulageways, workrooms, pumps, hoist and motor-generator rooms, stables, transformer vaults and such other points as the mine foreman may direct.

2. Semi-portable lamps shall be fitted with rubber-clad cord (similar to Tirex), and the lamp shall be protected with a wire guard having wooden handle, similar to Western Electric Co.'s Catalog No. 2,590.

3. Lighting wires shall be attached to trolley or power lines by Universal test clip No. 27, which will permit of the circuit being disconnected while removing the base of a broken lamp.

4. All wiring shall be supported on porcelain insulators, and when the track is used as a return for the lighting circuits the return wire shall be attached to the track by bonding to the rail or by attachment to regular track bonds. (See Fig. 8.)

5. The ground connection shall be made of not less than No. 8 B. & S. gage copper wire which shall be buried below the surface of the floor and carried to the side of the entry and thence on porcelain insulators to the roof.

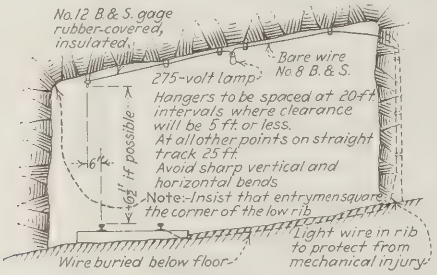

No. 12 B. & S. gage rubber-covered, insulated
Bare wire No. 8 B. & S.
275-volt lamp
Hangers to be spaced at 20-ft. intervals where clearance will be 5 ft. or less.
At all other points on straight track 25 ft.
Avoid sharp vertical and horizontal bends
Note:-Insist that entrymen square the corner of the low rib
6"
6½' if possible
Light wire in rib to protect from mechanical injury
Wire buried below floor

**Fig. 8—This Lessens Danger**

The haulage system of a mine is so important that it is worth while to install its feeder and trolley circuits in a safe manner.

6. All electric lamps connected to trolley lines for lighting underground shall be of 275-volt rating. Lamps supplied with alternating current shall be designed for 250 volts.

7. All sockets shall be of the keyless weatherproof type (similar to General Electric Catalog No. 60,666). Light wiring shall be not less than No. 12 B. & S. gage rubber covered and shall be supported on porcelain insulators or split knobs and held free from timbers, coal and rock.

8. Wires may be fastened to glass insulators, mounted on screw or wooden pins driven into the roof or the wire may be carried on a No. 3½ W. G. porcelain insulator fastened to timbers by means of ⅜x3½-in. lag screws with a ⅜-in. cut washer under the head.

9. Lamp bulbs shall be replaced only by the mine electrician or a person authorized by the mine foreman.

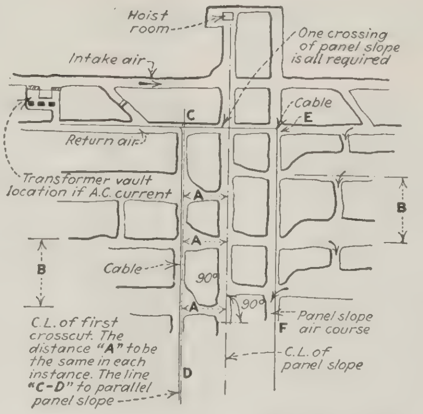

Hoist room
Intake air
One crossing of panel slope is all required
Cable
C
E
Return air
Transformer vault location if A.C. current
A
A
A
B
B
Cable
90°
90°
C.L. of first crosscut. The distance "A" to be the same in each instance. The line "C-D" to parallel panel slope
D
F
Panel slope air course
C.L. of panel slope

**Fig. 9—Simplification and Economy Go Hand in Hand**

This sketch shows a panel arrangement with the alignment of crosscuts on the opposite side of the slope from the air course, thus the necessity for cables on the slope is eliminated. With standardized room centers the cables *CD* and *EF* may be removed intact with supporting and controlling fixtures to any other panel.

10. In two-wire circuits, wherein one wire constitutes a permanently grounded return, this wire shall be installed in the same manner and afforded the same support and insulation as the live or supply wire.

11. All branch two-wire circuits leaving any main circuit shall be provided with a double-pole, fused switch of the safety inclosed type to protect the wires leading from it and for cutting off all current within the branch circuit.

### Cables and Power Lines

1. All power conductors shall be carried in manways or passageways that are ventilated by intake air. No wires or cables will be allowed in return air courses.

2. All wires or cables crossing slopes, panels or travelingways shall be carried underneath the road bed in a trough or in channels in the roof made to such a height as will render them safe from accidental contact.

3. For alternating current mining machine supply lines in panels 3-conductor rubber-insulated cable shall be used from transformers to room necks. This cable shall be supported by Fletcher mine wire holders, and shall terminate in suitable room switches at the room necks.

4. In panels the cable is to be carried in the passageway parallel to the panel slope. In the rooms on the opposite side of the panel slope, the first crosscut is to be driven parallel to the panel slope and at a standard distance from its center line, thus giving a passageway on both sides of the panel. This will eliminate the hazard of making numerous crossings over the slope with live cables. The same system will be observed where two-wire circuits supply mining machines. (See Fig. 9.)

5. All 2,200-volt power circuits leading underground shall be provided at the surface with a combination disconnecting switch and fuse in each conductor, capable of opening the circuit under load. Such switches must be provided with adequate lightning protection. (See Fig. 10.)

6. All 2,200-volt cables in damp or wet places, in boreholes or underground, shall be lead covered and armored or otherwise effectively protected from abrasion. The armor shall be electrically continuous throughout and shall be effectively grounded every 500 ft.

7. Buried cables shall be lead sheathed and armored or placed in metallic conduit.

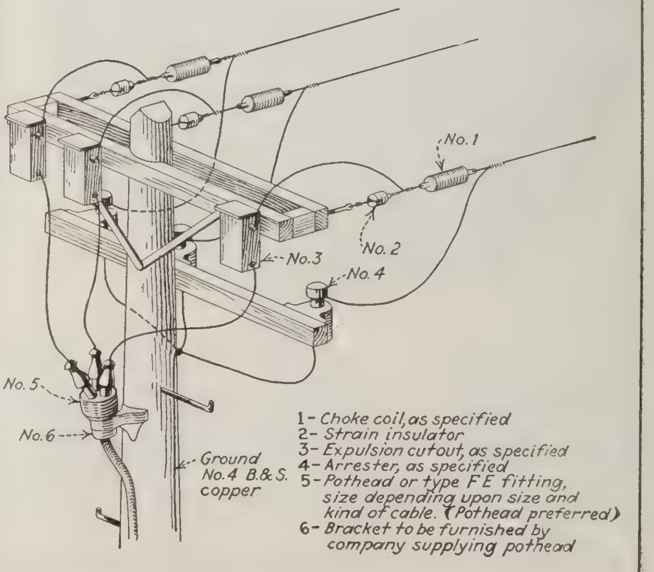
8. In permanently dry mines the lead sheath may be omitted if the cable is provided with a rubber covering around all conductors and enclosed in a metallic armor to protect it against injury by abrasion.

9. Cables in entries or passageways shall be supported by cable rings on messenger wire and shall be electrically bonded thereto at intervals not

FIG. 10

**Protect All Cables**

Wherever 2,200-volt energy must be taken inside the mines each wire should be protected by a fuse and lightning arrester. Provision should also be made to open any or all of the line wires by means of a switch or group of single switches.


No. 1
No. 2
No. 3
No. 4
No. 5
No. 6
Ground No. 4 B. & S. copper
1- Choke coil, as specified
2- Strain insulator
3- Expulsion cutout, as specified
4- Arrester, as specified
5- Pothead or type F E fitting, size depending upon size and kind of cable. (Pothead preferred)
6- Bracket to be furnished by company supplying pothead

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[*] This is the second of a series of articles giving the Code of Standards put into effect by the Union Pacific Coal Co., at its operations in Wyoming. The first article appeared in the Dec. 10 issue and the remainder of the code will be published in future issues in this form that permits of easy filing.

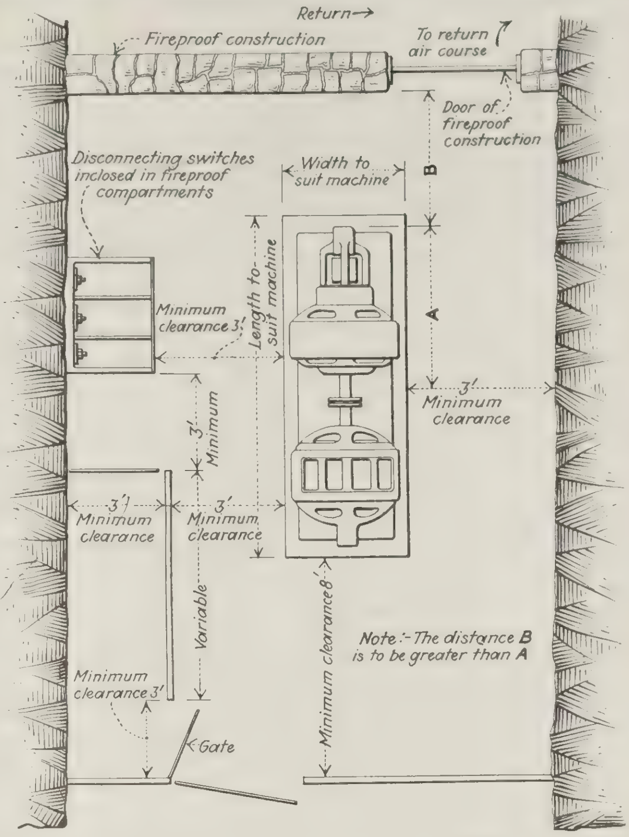

FIG. 11

**Elbow Room Makes Repairs Easier**

To provide adequate space for the operation and repair of substation equipment special consideration must be given to the arrangement of the machinery. The sketch shows the minimum clearances around the machine and circuit equipment also the design of the station with relation to air courses.

exceeding 500 ft. The supporting messenger shall be well grounded.

10. In future development all 2,200-volt cables shall be carried to a central distributing point and branch lines be provided with automatic oil circuit breakers.

11. Cast-iron tee boxes shall inclose connections where short lengths of 2,200-volt cables attach to main supply cables. These boxes shall be electrically bounded into the cable sheath circuit so that this circuit shall be electrically continuous between cables.

### Signal and Phone Lines

1. Telephone lines shall not be installed on the same side of an entry as power lines.

2. Every precaution shall be taken to prevent contact of telephone wires with power lines.

3. Telephone and signal lines between the mine openings and buildings shall be in underground conduit wherever there is possibility of their coming in contact with high-voltage lines through accident to either the high-voltage line or to the signal or phone line.

4. Telephone and signal lines must be kept apart from power lines.

5. Mine telephones to be of Western Electric Co.'s Type 1336J or its equivalent.

6. At points where wires enter the mine they shall be protected by a Western Electric Co.'s Type 58 A.P. protector installed in an iron box which must be effectively grounded.

7. Telephone wires shall be iron, No. 12 Birmingham wire gage, rubber covered and shall be supported in the same manner as low-voltage power lines.

8. All slope signal wires shall be No. 8 Birmingham W. G. or its equivalent, and shall carry not more than 30 volts.

9. Supports for slope signal wires shall not be more than 25 ft. apart and the space between wires shall be 6 in. All wires must be drawn taut and extend the full length of the slope.

10. On main slopes over 1,000 ft. in length duplicate signal wires shall be installed.

### Rules for Wiring Underground Stations

The following rules include such places as in hoist, pump and motor-generator set stations, stables, repair rooms, mine foremen's cabins, toolrooms, etc.

1. Wiring for lights shall be installed in metal conduit.

2. Each room shall be provided with a safety type of entrance switch.

3. Wire shall not be smaller than No. 12 B. & S. gage, and shall be rubber covered.

4. Ceiling lights shall be in fixed positions.

5. Receptacles shall be installed on opposite sides of the room for attaching semi-portable lamps where necessary.

6. Not more than six lights shall be installed on any one circuit.

7. All conduit shall be grounded.

8. Rooms containing motor-generator sets, pumps or hoists shall be ventilated with intake air at all times, and shall be located between intake and return air courses in order that fumes or smoke given off at times of burnouts may be diverted to the return air course.

9. Cables leading to motors and particularly those remotely situated from other points of disconnection shall be provided with expulsion type cutouts (General Electric Catalog No. 106,918 or its equivalent.)

10. No wiring for lights shall be carried within 5 ft. of any temporary powder storage room.

### Hoists

1. Permanent hoist rooms are to be fireproofed, in a manner determined by the general superintendent. (Temporary locations are those wherein the machine will be in service in one position less than 6 months.)

2. Hoist motor, controller, control equipment, oil switches, cable sheaths, current, potential, power and lighting transformers, switchboard frames, resistance boxes, and supporting frames, shall be grounded as heretofore provided.

3. Resistors shall be mounted on concrete bases or supported on pipe frameworks so that the bottom of the resistor will be at least one foot from the floor and shall be 24 in. removed from the coal rib so as not to present a fire hazard.

4. Resistors shall be protected with a suitable inclosure.

5. Control wiring, unless installed in metal conduit, shall have slow-burning insulation. All conductors composing such wiring shall be so laid that they may be readily traced and identified.

6. Wires connecting resistors and controllers or controller panels shall have slow-burning insulation. Wiring between motors and liquid controllers shall have rubber insulation.

7. Plans shall be developed for each district so that each hoist together with its complement of conduits, wires, cables, guards, floorplates, etc., may be removed in their entirety to new locations.

8. Primary contactor panels carrying 2,200 volts shall have all live parts completely inclosed in a box of transite or asbestos board.

### Motor-Generator Set Rooms

1. For general arrangement of motor-generator set rooms see Fig. 11.

2. Special attention shall be paid to location relative to load center in order that power may be distributed in two or more directions.

3. Ample space shall be provided around the apparatus to permit easy handling in case of dismantling for repairs.

### Switchboards

1. All switchboard frames are to be made of pipe or other metal supports with panels of incombustible material possessing insulating qualities suitable for the voltage carried.

2. Switchboards shall be given a 3-ft. clearance at the front, back and ends. Panel boards shall have a clearance of 2 ft. from the floor.

3. When the potential behind the switchboards exceeds 275 volts, the rear of the board shall be protected by gates and marked by appropriate signs.

4. All switchboard mountings, instruments, transformers and instrument casings shall be grounded.

5. Conductors shall not cross the passageways back of switchboards except below the floor or at a height of at least 6½ ft. above the floor.

# Book Review

## What Can Be Done to Give Steady Employment?

Unemployment and the methods by which employers are endeavoring to eliminate irregularities of operation is covered briefly, yet compendiously in "The Regulation of Employment, A Study in the Prevention of Unemployment," by H. Feldman, assistant professor, industrial relations, Amos Tuck School of Administration and Finance. The researches into the seasonality of the coal business are bearing fruit in an examination of other industries which had hitherto escaped investigation mainly because their inequalities of operation had not been made the basis of a persistent campaign by union leaders or the subject of a study by a compiler as sedulous as the U. S. Geological Survey. The evidence of the need for a "regularization" of industry is strongly set forth in this volume by Mr. Feldman, and any one who reads it will be convinced that the coal industry is not the sole and, possibly, not the most grievous offender. The book contains 437 pp., is 5½x8½ in. in size and is published by Harper Bros., New York City. The price is $3.50.

### MANY INDUSTRIES HAVE "OFF" SEASONS

"In a recent study of printing," says the author, "one plant is cited which employs 2,700 persons in rush seasons and drops off to 1,500 in dull; another which lays off 1,100 employees for periods of three months twice a year, therefore having a fluctuating payroll varying from 1,800 employees to 700 employees. Census figures for the United States sugar industry in 1919 show 4,661 persons employed in March and 27,064 in November." And again, "One plant situated in a great fruit and vegetable packing state and working on a seasonal basis, usually began work with a full force of 1,200 men, women and children, working sixty hours per week for several months. At the end of August or perhaps at the end of September, the force was suddenly reduced to as few as 100 employees." And yet, again, "A manufacturer of household specialties made 1,500 articles, which though staples, showed surprising seasonal variations in demand. The total sales of the firm for the four quarters of the year were approximately 20,000 lb., 8,000 lb., 10,000 lb. and 30,000 lb. respectively."

Coal gets its appropriate space in this volume and is well treated, though we would question if it is safe to say that, "Fortunately it is now known that coal can be stored safely and economically," even though the writer adds "types known to be particularly liable to spontaneous combustion should not be selected." He declares that "communities should aid the smaller consumers by providing municipal storage facilities." This seems to be a matter for private enterprise. It must, however, add greatly to the cost of the coal either by reason of high land rents if stored conveniently, or by reason of high truckage costs if stored where land is cheap.

"One trouble of this [bituminous] trade," says Mr. Feldman, "is the failure of bituminous operators to get together on their industrial problems." He overlooks the obvious fact that the law forbids such getting together and not wholly without reason.

# Viewpoints of Our Readers

## Water Gage or Anemometer to Show Entry Falls?

In the issue of *Coal Age* dated Oct. 8, covering the meeting of the Southern Mining Co.'s engineers at Williamsburg, Ky., a brief paragraph, referring to a paper which I read before them, states that "He [C. H. Trik] explained the fallacy of depending on the water-gage reading at the fan to indicate the condition of the airways. The anemometer is the only instrument which tells the true story."

This is only half of what I said, and it makes it appear that I recommended the disregarding of water-gage readings in favor of the use of the anemometer as an index of the condition of the mine. This was not my intention, for, indeed, the water gage is the most important instrument the mine ventilation engineer has in his determination of all ventilation characteristics of a mine.

### EXPLAINS FULL MEANING

What I hoped to make clear was that it was useless to depend on a water-gage reading taken at the fan to tell whether there had been a fall of top in the air courses during the night. I explained that a modern fan running at a constant speed produces a constant depression and, therefore, providing the ventilating unit was not working above its normal capacity, any change in the aircourse such as a fall in top, would not be indicated on a water gage. It was at this point that I said the proper instrument to use to obtain such information would be the anemometer rather than the water gage.

The mine foreman is usually well conversant with the volumes flowing through his mine and any falls in the aircourses would, of course, tend to reduce the sectional area, and naturally, with the fan running at a constant speed, reduce the volume being handled. For this determination the anemometer is the instrument to use.

C. H. TRIK,
Ventilation Department
Jeffrey Manufacturing Co.,
Columbus, Ohio.

## Washington Has Deeper Mine

On page 531 of the October issue of *Coal Age*, I note a statement to the effect that the Auchincloss No. 1 shaft of the Glen Alden Coal Co. near Nanticoke, Luzerne County, Pa., is the deepest coal mine in America.

I believe the record for the deepest coal mine in the United States goes to the famous Black Diamond Mine at Black Diamond, Wash., 30 miles southeast of Seattle. This mine has a depth below the surface of 2,049.34 ft. and below sea level 1,491.34 ft. You can see from these figures that it is under a cover 351.94 ft. greater and is 538.34 ft. deeper below sea level than the anthracite mine to which you refer.

GEO. WATKIN EVANS,
Consulting Engineer.
Seattle, Wash.

# News Of the Industry

## Hard-Coal Peace Plans Plentiful; Union Leaders Refuse to Consider Anything but Pinchot's Proposals

Prospects of an early resumption of mining in the hard coal region appeared nearly as remote as ever at the opening of Christmas week. The only thread of hope, and that admittedly a slender one, was the campaign undertaken by mayors and burgesses of the anthracite communities to bring the operators and miners together again to resume negotiations. This campaign was started after the civic officials, summoned to Harrisburg on Dec. 16, had declined to be bound by the Pinchot "peace" plan in their efforts to persuade the scale committees to reopen discussion. The Harrisburg conference went on record in favor of any plan that would break the deadlock in the following resolution:

"That it is the sense of this meeting of the executives of the anthracite region that the operators and miners be invited to meet together in conference at the City Hall of Scranton one week from today or at such other time and place as may be more convenient, there to take up the negotiations at the point where they were broken off last August and with the understanding that either side shall be at liberty to bring up for discussion its own plan or plans, the Governor's plan or any other plan that may be offered."

The operators, meeting at Wilkes-Barre on Sunday, announced their acceptance of the invitation to meet the miners under the terms of that resolution, which, they pointed out, "indicates that no one plan is to be the subject of conferences, but that any plan may be presented for consideration. With this understanding we accept your invitation.

"If the miners likewise accept your invitation under the conditions stated in your resolution, then we are ready to meet at the call of the chairman, Alvan Markle, as provided in the resolution of the negotiating committees adopted at the time of adjournment at Atlantic City. This is the regular course of procedure in such cases. If the published report of Mr. Lewis' reply to your communication is correct that the Pinchot plan alone will be considered by the miners, it would, of course, preclude a conference."

At the time the operators' position was made public, no formal statement of the miners' stand had been made. It was strongly intimated, however, that Mr. Lewis and his associates would insist that the Pinchot plan alone be the basis of negotiations.

The war of words over the causes for the failure to end the authracite suspension grew increasingly violent during the past week. A five-point program to end the strike, suggested by seven Luzerne County members of the Pennsylvania House of Representatives and promptly indorsed by the operators, moved John L. Lewis, president of the United Mine Workers, to a fresh outburst of belligerency. He denounced the proposals as "simply the operators' plan wrapped up in a new package," charged the producers with a conspiracy to smash the union and declared that "the United Mine Workers is now organizing the defense of the anthracite mine workers in expectation of a continuance of the present struggle to the fall of 1926 or the spring of 1927."

W. W. Inglis, chairman of the operators' negotiating committee, retorted with an attack upon the figures used by Mr. Lewis in building up the "conspiracy" charge. Between 1902 and the time Mr. Lewis assumed control of the union, said Major Inglis, differences between the operators and the men had been settled by collective bargaining. "Since Mr. Lewis has been in charge, nothing has been accomplished by that process and we have had three strikes in less than four years.

### Bituminous Leading Influence

"Mr. Lewis glibly talks about continuing the present struggle to the fall of 1926 or the spring of 1927. Once more he furnishes evidence of the interest of his organization in the bituminous field. The anthracite strike had its beginning in Mr. Lewis' effort to regain lost ground in the bituminous field. When he talks of continuing it to the expiration of the Jacksonville agreement, it is apparent that the dominating influence in the present controversy is still bituminous and not anthracite."

Governor Pinchot's activities came in for a scoring from two sources. The board of directors of the Chamber of Commerce of the United States, meeting in Washington, adopted a resolution stating that "examination of his proposal shows that it did not propose that all controversial issues should be arbitrated. On the other hand, the operators offered arbitration of all issues involved in the controversy. While it is not the purpose of the board to define any plan of arbitration, it is its judgment that any plan to be of lasting benefit to the industry and in the public interest should consider the merits of the controversy in all of its aspects."

### *Why Worry About Strike? Heat Homes with Mine Gas*

Capturing escaping mine gas and piping it into their homes in Kirby Park, Wilkes-Barre, Pa., Tom Phillips, supervisor of the parks in that city, and William Law, foreman at Kirby Park, have solved the fuel problem as far as they are concerned. The supply of gas has been led into the fireboxes of hot air furnaces, where crushed bricks were placed and the gas ignited. The burning gas heats the broken brick to a white heat and the radiation is more than sufficient to heat the homes comfortably. There appears to be sufficient gas from this one source to heat fifty homes, and other householders in the vicinity of the park are talking of adopting the same plan. It sounds like a fairly tale, but the two park officials say "let those who doubt come and see." It is admitted that the supply is uncertain, however, inasmuch as mine gas frequently disappears rather suddenly.

The second attack upon the Pinchot program came from the operators in a lengthy statement made public on Dec. 18. Instead of taking the middle ground alleged, said the statement, the Governor's proposal "resolved every question in the miners' favor without investigation. The Governor criticizes the operators because they have refused 'to yield one jot or tittle of their orginal position.' The truth is that the operators have made certain assertions of fact which they believe to be true. If the assertions of the operators are untrue and do not afford the basis for a sound and fair settlement, that would be brought out in the kind of impartial arbitration for which the operators have been contending from the start.

"Neither the Governor's plan nor the calling of an extra session, nor condemnation of the course taken by the operators produces any coal. The operators have had a single aim throughout the entire controversy. That was to bring about production, avoid suspen-

# *Real Earnings of Contract Miners In Anthracite Fields—II*

(Lehigh Coal & Navigation Co.)

Are contract miners in the anthracite fields underpaid?

John L. Lewis, international president of the United Mine Workers, insists that they are. He has repeatedly drawn upon the reports of the Coal Commission, with their misleading figures basing earnings upon the number of starts made, to support his assertion. In a statement published in the Sept. 15 issue of the *United Mine Workers' Journal*, Mr. Lewis declared that the average was $1,700 per year, from which "there must be deducted over $200" for supplies.

Check of actual payrolls, however, tells a far different story.

For example, in 1924, six breakers of the Lehigh Coal & Navigation Co. averaged 271 starts per breaker and employed 1,638 contract miners. But only 1,136 men, or 69.4 per cent, of the total worked regularly enough to appear on each of the 24 semi-monthly payrolls. There were 152 men who earned over $3,500 *net* for their work. This group, averaging $3,809.78, made 274.8 starts, or an average of 3.8 days more than the average starts per breaker. The next highest compensated group averaged 268.4 starts, as compared with 271 for the breakers, and made $3,448.53.

The average earnings by $100 groups for the 1,136 contract miners were as follows:

| Miners | Average Annual Earnings | Miners | Average Annual Earnings |
|---|---|---|---|
| 152 | $3,809 | 80 | $2,451 |
| 39 | 3,448 | 70 | 2,353 |
| 46 | 3,347 | 57 | 2,246 |
| 40 | 3,241 | 53 | 2,152 |
| 38 | 3,150 | 33 | 2,056 |
| 68 | 3,051 | 22 | 1,953 |
| 80 | 2,949 | 17 | 1,849 |
| 90 | 2,850 | 9 | 1,749 |
| 82 | 2,748 | 1 | 1,630 |
| 82 | 2,650 | 3 | 1,562 |
| 74 | 2,547 | .. | .... |

The average per man for the entire group was $2,830.54. Nearly 70 per cent (69.63) of the group averaged in excess of $2,500 per annum. Less than 5 per cent received under $2,000. The three men in the lowest rated group ($1,562 per annum) worked only 225 days.

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sions in the future, and, if possible, reduce prices to the consumer. Any plan that does not accomplish permanent peace is valueless.

"The only practical effect of the Governor's course is to prolong the strike, increase the public's inconvenience and add to the distress suffered by the mine workers and to the losses of the industry and to the whole anthracite region."

The Luzerne County legislators' plan so hotly dismissed as unworthy of attention by the miners provided:

(1) An immediate resumption of work under the terms of the expired contract for the period until Sept. 1, 1926.

(2) A negotiating committee to be composed of three representatives of the operators and three representatives of the mine workers to resume negotiations two months after the resumption of work, to consider any modifications of the expired contract that may be urged by either party.

(3) In the event that any matters in dispute are not disposed of by the negotiating committee within thirty days after the resumption of negotiations, such matters shall be referred to a board of settlement, to be composed of the members of the negotiating committee, who shall sit with the board of settlement but without vote, and five voting members to be appointed to represent the public interest either by, first, the President of the United States, or, as an alternative, by, second, the Chief Justice of the Supreme Court of Pennsylvania and the presiding Judge of the U. S. Circuit Court of Appeals of the Third Circuit. This board of settlement to have authority to start immediately an investigation of the economic and technical facts by which all questions of working conditions, wages, etc., may be settled. The board to be selected and organized within thirty days after any questions are referred to it, and to render its decision within three months.

(4) A new contract embodying the above principles, for a period of at least five years and preferably for ten years, to be formulated and signed to be made effective from September, 1925.

(5) Either party to have the right, not oftener than every twelve months, to call a conference of the negotiating committee to reconsider any element of the contract. Matters not disposed of within sixty days at such conference to be referred to the board of settlement for final decision, such decision to be rendered within sixty days of such reference.

The Chamber of Commerce resolution was not the only Washington expression on the strike situation. On Dec. 17 Senator Copeland of New York asked the Senate to forego its holiday recess until something was done to relieve "suffering of the poor forced to go out each morning for a bucket of coal just as they do for a bottle of milk or a loaf of bread." On Dec. 19 Representative Black of New York attacked President Coolidge for failure to intervene. The President's policy was defended by Representative Treadway of Massachusetts, who urged consideration of coal regulatory bills he has introduced. One of these bills authorizes the President to operate the mines in emergencies and another measure would put the Coal Commission's recommendations on the statute books.

On Sunday night the American Federation of Labor made an appeal to union workers in other industries to come to the financial support of the striking miners. The strikers were pictured as victims in a struggle against "arrogant" operators for the rights of union labor. The burden of meeting the necessities of unemployed members and their families in both anthracite and bituminous fields, said the appeal, "is too great for one organization and the cry reaches beyond the United Mine Workers of America. Organized labor in America must hear that cry, and, hearing it, must respond to the needs of the men, women and children in the anthracite region who are suffering from hunger and who need our help."

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## Sue Arkansas Union on Basis Of Coronado Case

The Greenwood Coal Co., Mammoth Vein Colliery Co., Backbone Coal Co., Semi-Anthracite Coal Co. and Blue Hills Coal Co. filed suit in the U. S. Court at Fort Smith, Ark., Dec. 11, against District 21, United Mine Workers; its officers, executive board, individual members and locals in western Arkansas counties, alleging conspiracy to restrain commerce in coal and praying judgment for $1,080,000 as triple damages under the Sherman Anti-Trust law.

The suit is based on the same contentions made in the suit of the Coronado Coal Co., now on trial for the third time in U. S. District Court.

Miners now on strike are charged with having caused employees of the companies to quit work by threatening them and by other methods and with advocating violence during union meetings in violation of an injunction order issued by the Sebastian County Chancery Court and with responsibility for the burning of the tipple of one mine.

The alleged combination also is charged with maintaining agents and representatives charged with the duty of preventing, if possible, the transportation of coal in interstate trade and commerce.

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## Free Reconsignment Allowed By Grand Trunk at Detroit

The following provision in Grand Trunk R.R. I.C.C. 2272, Suplement 2, became effective Dec. 2, 1925:

"No charge will be made for a single diversion or reconsignment of anthracite coal when reconsigned or diverted at Detroit, Milwaukee Junction or West Detroit, Mich., for deliveries within the Detroit switching district or when destined to points beyond the Detroit, Milwaukee Junction and West Detroit switching district when through rates from points of origin or rate basing point to final destination apply via Detroit, Mich.

"No charge will be made for a single diversion or reconsignment of anthracite coal when reconsigned or diverted at Port Huron, Mich., for deliveries within the Port Huron (Mich.) switching district, or when destined to points beyond the Port Huron switching district when through rates from points of origin or rate basing point to final destination apply via Port Huron."

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## *Orient No. 2 Produces 12,823 Tons in Day*

Orient No. 2, the Chicago, Wilmington & Franklin Coal Co.'s big mine at West Frankfort, Ill., established a new world's record on Dec. 17 by producing 12,823 tons of coal. This was the third time within three months that this operation broke the world's record for a single day's production.

This immense output required 248 railroad cars. The mine's previous record was 11,325 tons. Eleven hundred miners are employed.

# Coolidge Luck Seen in Diversion Of Anthracite Strike to Intrastate Issue by Pinchot Call to Legislature

**By Paul Wooton**

Washington Correspondent of *Coal Age*

Whether or not the Governor of Pennsylvania will succeed in curbing his pet obsession, the "anthracite monopoly," at the special session of the Legislature which he has called, remains to be seen, but he has done one thing: he has created a diversion which removes the anthracite situation from national politics. It now has become an intrastate issue. So long as the executive of a sovereign state which includes all of the anthracite mines is acting the federal administration will have less reason than ever to intervene.

Governor Pinchot has the police power and all of the mines are in his bailiwick. He has drawn to himself the spotlight of public attention and has furnished the President with a second and a better reason than the presence of Congress for declining to interfere. Some see in this another manifestation of Coolidge luck.

Even Congress is less likely to act until at least the Pennsylvania Legislature shall have had an opportunity to meet the situation. As far as constitutional powers to control either miners or operators are concerned, the state Legislature has two trumps for each one held by Congress. Speculation in Washington turns on what the Governor can accomplish through the medium of the Legislature.

### See Tough Job for Pinchot

Pennsylvania politics is little understood in Washington, so the comment does not get much beyond questions. Doubt is expressed as to the ability of the Governor to force the Legislature to take any action against the anthracite operators. Pennsylvania is a conservative state. Its legislators have a better grasp on sound business principles than is the case in many other states. In the national Congress the anthracite industry might have few champions, but in the Pennsylvania Legislature there is no dearth of capable members who will see that the position of the producers is presented effectively.

Doubt is expressed, however, of the willingness of the Legislature to punish the miners. The often repeated suggestion that the contract miners' certificate law be repealed seems to lose sight of the fact that this law was passed in the days of Boss Quay, before the union entered the anthracite region. Enough is known in Washington of the situation in Pennsylvania to realize that the chance of erasing that law from the statute books is small.

Whatever the Legislature may do the feeling in Washington is that Governor Pinchot and John L. Lewis, between them, have so muddied the waters as to confuse the public further. The call of the Legislature tends to strengthen the impression that the miners already have spread abroad that there is a desire to avoid the issue rather than take action calculated to terminate the strike promptly.

The Board of Directors of the Chamber of Commerce of the United States was prompted by the action of the Pennsylvania Governor to adopt a formal resolution in the following language:

"Arbitration as a means of adjusting the present strike in the anthracite field has taken on added importance because of the proposal of Governor Pinchot.

"An examination of his proposal shows that it did not propose that all controversial issues should be arbitrated. On the other hand, the operators offered arbitration of all issues involved in the controversy.

"While it is not the purpose of the Board to define any plan of arbitration, it is its judgment that any plan, to be of lasting benefit to the industry and in the public interest, should consider the merits of the controversy in all of its aspects."

None will be surprised if there is administration support for fact-finding legislation. This support will be predicated on a belief that the coal industry could be made more helpful with a complete statistical service. It is thoroughly recognized that the industry will oppose such legislation. The feeling is, however, that only government figures would be accepted by the public. Even were the industry itself to furnish the figures that would be thoroughly satisfactory to the government, the opinion is expressed that the public would not have confidence in the statistical returns from that source.

### Adequate Statistics Needed

In that connection the opinion is expressed by those holding these views that had the government been furnishing an adequate statistical service on coal, regulation of the industry could have been withstood more successfully at this session. Even now the feeling in these quarters is that a real coal statistical service by the government would constitute great protection to the industry from more savage forms of legislation.

Despite the inherent tendency of Anglo-Saxon peoples to oppose monopoly, the opinion is expressed that public sentiment would not be averse to the reduction of producing units in the coal industry from eight or nine thousand to five or six hundred. The feeling is that with this latter number of units, ample competition would be insured and the industry would be stabilized greatly.

## *Strike Effects Stressed in President's Message*

Referring to strikes, President Coolidge in his message to Congress, on Dec. 8, said:

"A strike in modern industry has many of the aspects of war in the modern world. It injures labor and it injures capital. If the industry involved is a basic one, it reduces the necessary economic surplus and, increasing the cost of living, it injures the economic welfare and general comfort of the whole people. It also involves a deeper cost. It tends to embitter and divide the community into warring classes and thus weakens the unity and power of our national life. Labor can make no permanent gains at the cost of the general welfare."

# C. Bascom Slemp Heads New $9,750,000 Merger Of 14 Coal Companies

Richmond, Va., Dec. 19.—A charter was granted today to the Wakenva Coal Co., which represents a consolidation of fourteen coal mining companies. The production of the fourteen mines of these companies, located in West Virginia, Kentucky and Virginia (from the names of which states it will be observed that the name of the new company is derived), is 1,500,000 tons annually. It is expected that the output will be increased to 2,500,000 tons, which will make the company one of the most important operating units in the Southern fields. The total capitalization is $9,750,000. The financing was arranged through Robert Garrett & Sons, Baltimore.

C. Bascom Slemp, who, upon his retirement as secretary to President Coolidge, resumed the practice of law with offices in Washington, D. C., is the Chairman of the Board of Directors of the new company; S. R. Jennings, Johnson City, Tenn., who headed a number of the constituent companies, is president of the new organization, and A. S. Higginbotham, Tazewell, Va., vice-president. The directors include C. B. Slemp, S. R. Jennings, Jas. W. Gerow, A. K. Morison, E. R. Boyd, A. S. Higginbotham, Ferdinand Powell and other prominent business men.

The markets will be in the South, along the Atlantic Seaboard and in the Northwest. It is stated that the company will sell high-grade domestic and steam coals.

The companies included in the merger are the Beaver Creek Coal Co., Camp Branch Coal Corp., Floyd-Elkhorn Consolidated Collieries, Graden Coal Co., Hazard-Blue Grass Coal Corp., Hill Creek Coal Co., Kennedy Coal Corp., Kroll-Litz Coal Co., Lewis Creek-Banner Co., Nora Coal Corp., Sandy Ridge Coal Co., Upper Banner Coal Corp., Virginia-Banner Coal Corp. and Walkers Branch Mining Co.

## Labor Now Minor Factor In W. Va. Strike Zone; Selling Problem Presses

The labor situation does not seem to be an important factor in northern West Virginia at present as far as coal production goes. The non-union mines seem to be getting out all the coal they want and a great deal more than the present flabby market will absorb. There were rumors afloat in the region this week to the effect that the non-union operators will make another reduction in wages after Jan. 1. As no intimation of such a move has been made public thus far, it is thought to be union propaganda.

Some operators believe that an effort should be made to effect a number of group mergers, which would take away the stigma of monopolistic features and at the same time pave the way toward stabilization. Central sales agencies also are suggested as a means of solving many of the unwholesome business problems of the industry. While the operators unquestionably have won the laurels from the United Mine Workers in their labor struggle it has been a costly fight and with the present ragged market and no hopes of curtailing production they are beginning to find that not a great deal has been gained in dollars and cents. Many companies have borrowed heavily on their properties, and officials say they have little to show for their struggle. If the present unsettled market continues some of the companies may be forced into bankruptcy.

With the approach of the Christmas season production in the region is easing up; a number of mines in the field, it is said, will close down over the holiday season.

### B. & O. Embargo Placed

Due to the heavy bituminous coal shipments in the East the B. & O. placed an embargo on consignments to Reading, Pa., at the request of the Reading Ry. The mines had a full run of coal cars last week, after car shortage was experienced on the Monongah Division, B. & O., during the last three days of the previous week. Pennsylvania equipment on the Monongahela was getting scarcer toward the end of the week.

Two hundred and twenty-four non-union coal mines are operating daily in the 12½ counties of northern West Virginia, while the average number of union mines at work in the region is 14. After a lull of some time the first union mine on the Monongah Division, B. & O., resumed operation last week. This is the Annabelle Mine of the Four State Coal Co., near Worthington.

In the first half of last week the mines of the 12½ counties loaded 5,688 cars of coal, compared to 6,051 cars in the corresponding period of the previous week. Union mines loaded 784 cars of coal in the first four days of last week compared to 862 cars in a similar period of the previous week.

The Mine Workers continue their mass meetings in the field, although they are not as numerous as some weeks ago, when the weather was milder. Officials say 600 people attended a meeting at Bear Mountain Dec. 13 and that meetings addressed by Bittner in Philippi and Rosemont Dec. 15 were well attended, as was a meeting in Flemington Dec. 16. A large mass meeting was held in Scott's Run Dec. 13, also. Group meetings of local unions were held last week in Monongah and Farmington and the regular session of the policy committee was held in Monongah.

Robert Bostic, a union miner, was shot at Bingamon, a mining town of the Bingamon Gas Coal Co., Dec. 13, by Marion B. Shobe, a mine guard, it is alleged, and Bostic is a patient in St. Mary's Hospital in Clarksburg suffering from two wounds in the back.

**Major Clarence T. Starr**

He is coal specialist for the Chamber of Commerce of the United States and has been elected chairman of the Washington section of the American Institute of Mining & Metallurgical Engineers. M. Van Siclen, assistant chief mining engineer for the Bureau of Mines, was elected vice-chairman. H. I. Smith, chief of Minerals Leasing Division of the U. S. Geological Survey, was chosen for the combined office of secretary and treasurer. J. D. Nevius, of the Mines Valuation section of the Bureau of Internal Revenue, and W. H. Wagner, a consulting mining engineer, were elected to form, with the foregoing, an executive committee.

## *Modify Union Wage Scale In Cambridge Field*

After a conference of several weeks between leading operators in the Cambridge (Ohio) field and representatives of the United Mine Workers, an agreement was reached last week to modify local conditions in the Jacksonville scale in such a way as to reduce production costs. The miners waived their claim for payment for removing slate, and changes were made in the rules governing the width of entries to be driven. All the operators signed the new agreement except the National Coal Co. and the Cambridge Collieries Co., the two largest operators in the field. It is believed that some of the mines will resume work on the modified scale.

## Dering Mine Reopens; Will Comply with Indiana Law

Work was resumed Dec. 10 at the Dering mine No. 6, in the Clinton field, Indiana, following dissolution of an injunction granted by Judge Howard Maxwell of the Parke County Circuit Court, restraining the state mine inspector from interference with the single-entry system of mining practiced in the mine. Points of controversy in the case, which attracted wide attention in Indiana mining circles because of the principles involved, were settled by an arbitration board. Miners refused to return to work, however, until the injunction was dissolved. This was accomplished through application to the court by attorneys representing the J. K. Dering Coal Co., owners of the mine, and the miners.

Previous to issuance of the injunction the company had used machines in working single entries, obtaining ventilation through an auxiliary fan that forced air to the working face through a canvas tube. No "breakthroughs," as provided for in the state mining law, were employed. Following protests by the miners, an inspection was made by the state mine inspector. The Dering company countered this move by obtaining the injunction. The miners walked out.

With the reopening of the mine a double-entry system with "breakthroughs" for ventilation will be used.

## High-Volatile Supplemental Rate Order Extended

Through the activities of A. A. R. Yarborough, traffic manager of the Kanawha Operators Association, the original supplemental order of the Interstate Commerce Commission granting joint through rates on high-volatile prepared coal from southern West Virginia has been amended to include mines along the New York Central (Kanawha & Michigan) on the north side of the Kanawha River. The order now extends to all mines on the Winifrede R.R., Kanawha Central R.R. and all mines in the Kanawha district at points on the New York Central lines, from Plymouth to Gauley bridge, including points on the Smithers Creek branch, and all rates on the prescribed basis will be maintained as follows: New York Central lines to all destinations embraced in routes 1 to 41 as prescribed in original supplemental order. The rates upon the basis prescribed in the supplemental order issued are to become effective on or before Jan. 4, 1926, upon not less than five days' notice and in every other respect shall accord with orders laid down in supplemental orders affecting other bases in the Kanawha field.

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Coal operators received word in Fairmont, W. Va., Dec. 16 that the Interstate Commerce Commission has granted permission to the Baltimore & Ohio R.R., to change the tariff so as to eliminate the $2.70 charge on "order-notify" shipments, which was protested by the Monongahela Valley Association at its meeting in Fairmont Dec. 15.

## Machinery Set in Motion To Block Intrusion of Government in Business

Steps to curtail the intrusion by government in private business were taken at a two-day conference of about two hundred representatives of business, trade and other organizations concerned in the growing tendency of municipal, county, state and federal governments to engage in business activities held to be the proper province of the citizen, which concluded its sessions at Washington on Dec. 11.

It was the definite expression of the conference that no new organization was necessary, but that it was advisable to create a conference committee to aid the activities of the associations interested in this particular subject.

The declared purpose of the conference was:

"(A) To disseminate among the people correct information as to the extent, cost and results of government enterprises.

"(B) To urge that in all government operations there be established a recognized and adequate system of cost accounting; and that all existing prohibitions against rewarding labor on merit and efficiency be abandoned.

"(C) To inform the people that government in business means the establishment of a socialistic state, and the ultimate destruction of all individual opportunity.

"(D) To oppose every existing or proposed intrusion by government into the proper field of private enterprise."

### Hoover Foresees Difficulty

Getting the government out of business is more difficult than it appears on the surface, Secretary Hoover pointed out in an address at the conference.

"It seems to me that you will have a good deal of difficulty establishing any very precise lines of principles on the question of the government in business," he said. "And one side light on it is that the demands that the government shall get into business to large degree come from the business world itself. The desire to regulate the other fellow seems inherent in the human heart. Therefore an education of the business world will be useful as a start on the question.

"Nor is it possible to dismiss the question with just the summary slogan of 'Get the Government out of Business.'

"To start with, it is obviously the proper function of all government to prevent fraud and unfair practice in business. The ten commandments need some supplement to meet new inventions. The steady growth of business standards and business ethics has been a solid contribution of progress in this direction.

"Furthermore, uncontrolled monopolies have been anathema to the sense of the race ever since Cromwell, and we all look to the government to take care of the question. Some years ago we strengthened the anti-monopoly laws by the Sherman Act, under which it was proposed to maintain competition in all directions. The people gradually came to realize that the public utilities were a national monopoly in the local sense and that maintained competition among them would entail enormous duplication of capital and service and consequent cost to the consumer. With good sense they have set up monopoly but subject to regulation. So we have the government in the business of regulating the profits of the natural monopolies and the government in the business of and insisting upon competition among the other industries and trades. It may not be done perfectly, but in any event, it is not going to be abolished. It ought to be made better.

"Again there are numbers of public-works, river and harbor road and other improvements which by common consent must be built on at government expense.

### Unnecessary Duplication Costly

"There are a vast amount of welfare services such as educational and statistical services, informational services, promotion work which have been established in the government by common consent, all of which mean much government in business. In all this governmental machinery we need much reorganization not only that it shall work more efficiently and economically but that its unnecessary duplications shall be taken off of the back of the people.

"But what I feel that most people refer to when they talk of the government in business is that they do not wish the federal government to engage itself in the buying of commodities, or services for resale, and they do want the government to procure services and commodities for its own use by competitive bidding from the business world.

"I believe there are some points where the federal government could reduce its business activities. I am sure the whole federal government and Congress would welcome a sane study of the whole problem. Government officials are overburdened with labor and they welcome the co-operation and development ideas and methods, and eternal vigilance is the price of liberty in these matters."

## *Not Liable for Injury to Child Hired "on Quiet"*

The Kentucky Court of Appeals on Dec. 11 rendered a decision holding that under the Kentucky child labor law an employer cannot be held liable for damages when a child is injured who has been employed without the knowledge or consent of the employer. In this case a 13-year old boy who had been killed in a fall from a company truck had not been employed by the company but by the company's truck driver, who was getting the boy to help him. Counsel for the defense successfully maintained that contributory negligence of the boy's parents in permitting his employment was a proper defense to the action against the company.

## Act to Set in Motion Hoover Anti-Waste Plan In Marketing Methods

Acting in accordance with a suggestion from Secretary of Commerce Hoover, the National Distribution Conference, meeting at Washington under the auspices of the United States Chamber of Commerce, on Dec. 16, took steps toward setting up machinery by which business may co-operate for the purpose of self-government and the tracing and elimination of wastes in marketing. The conference began Dec. 15 and lasted two days.

In the early sessions of the day committee reports were submitted describing marketing conditions as they now exist. The reports placed the blame for marketing wastes with the producer and the consumer, as well as with the distributor. The conference subsequently decided that "present methods of distribution have been developed by economic forces and fundamentally are sound."

The conference recommended as a first step toward the elimination of trade abuses and destructive trade practices that the Chamber of Commerce designate a joint trade relations committee, representing manufacturers, wholesalers, retailers and the public, to act as a clearing house for complaints.

Further steps also were proposed for the joint collection of statistics and business figures and the conduct of economic research in the interest of business and the public at large.

Secretary Hoover in a brief address called upon the conference to establish an organization of business men to co-operate with the Department of Commerce in its campaign for the elimination of waste.

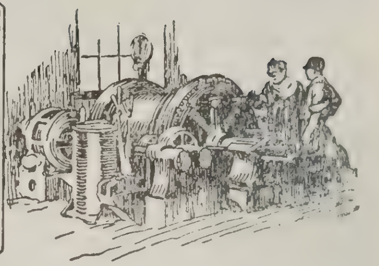
"We would be grateful," he said, "if there would come out of this conference some kind of an organization for the promotion and the better co-ordination of research; that some sort of definite, organized expression and impulse might be given to the building up of the statistical and research activities throughout the country. And I make that general expression because I believe that research, through the business world itself, and statistics so far as they may be competently collected, are in the hands of better agencies than the government."

Felix H. Levy, of New York, and other trade association representatives urged that the conference demand the amendment of the Sherman Act to enable business concerns to co-operate in the achievement of economic reforms and that the Senate Interstate Commerce Committee be requested to grant a hearing for the discussion of the question.

Other members of the conference asserted that the anti-trust laws were hampering business but that it would be inopportune at this time to urge their amendment or repeal.

"No little part of the wastes resulting in inflation of present prices the conference held to be attributable to unreasonable demands by consumers for unnecessary distribution services."

# Practical Pointers For Electrical And Mechanical Men



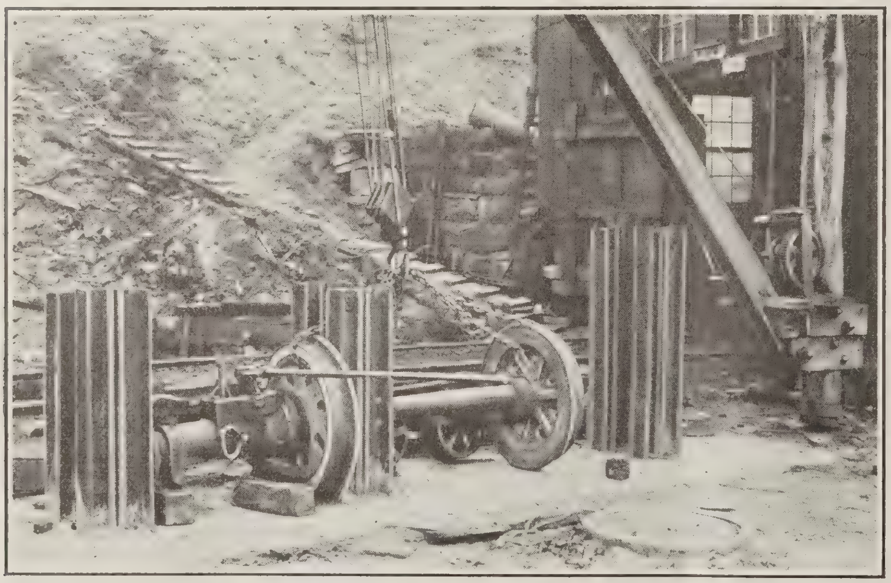
## Substitute Wheel Press Serves Purpose And Saves Expensive Investment

If a mine repair shop were equipped with every type of machine which occasion demands it would appear that the company was in the repair business instead of engaged in coal mining. The point to which it is economical to equip a repair shop depends upon the volume of work to be done and upon the proximity of a fully-equipped general shop rather than upon a sole consideration of the varieties and volume of the work it is called upon to perform.

A wheel press is one machine which if installed in many shops would be used only at infrequent intervals. This being the case at the shop of the Blue Diamond Coal Co., of Blue Diamond, Ky., Harry Kivett, chief electrician, was reluctant in advocating that the company invest in an expensive wheel press. Nevertheless, instances arose when a press would be of great advantage, so as a compromise he built the device illustrated in the accompanying photograph which admirably serves the purpose for which it was intended and does the work it is called upon to perform, although more slowly than would a regular press built specially for this work.

This consists of a number of pieces of 80-lb. rail set in a large block of concrete. A 75-ton geared jack of the portable type does the pressing and the rails act as backstops. A jib crane conveniently located facilitates the handling of heavy material to and from this improvised press.

The twelve pieces of rail are set in groups of four, with a 6-in. space between pairs. This space provides for free movement of the shaft or axle being pressed. The block of concrete is 5 ft. thick and the rails extend 3 ft. above the top. So far all pressing jobs which have come up at the Blue Diamond shop have been handled successfully by means of the 75-ton jack and this backstop arrangement.



**Using a 75-Ton Jack for Pressing Off a Wheel**

Each of the backstops consists of four 80-lb. rails set 5-ft. deep in a block of concrete. A crane facilitates the placing of material in the proper position for pressing. The arrangement, while admittedly not as good as a wheel press, does well for a shop where the volume of work hardly justifies the purchase of a standard machine.

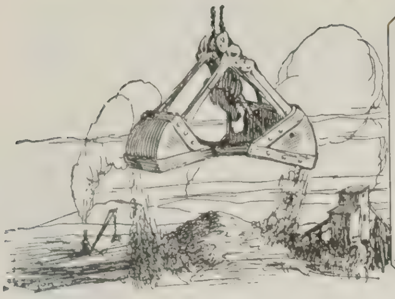
## Cone-Shaped Mandrel Assists Mine Blacksmith

"Shrink a band around it," is often the prescription handed to the mine blacksmith when some mechanical part is brought to him for repair. The shaping of the necessary band to a true circle is not an easy matter unless an old shaft, a piece of pipe or the like of right size can be found for use as a mandrel.

**Handy for the Blacksmith**

This cast-iron mandrel, 50 in. high, 5½ in. in diameter at the top, and 25 in. across at the bottom, is used for shaping rings, bands, and other curved forgings. Its size permits a great variety of work to be formed by its aid.

An old device, but one which nowadays is found in comparatively few mine blacksmith shops, is that recently added to the shop equipment of the Fordson Coal Co., at Stone, Ky. This is the cone-shaped mandrel shown in the accompanying illustration. It is made of cast iron 50 in. high, 5½ in. in diameter at the top, and 25 in. in diameter at the bottom. The top is solid but the bottom is cored out cone-shaped in order to reduce the weight. The range of sizes of bands or rings accommodated by this mandrel includes all of those for which there is a common call in mine repair work.



# Production And the Market

## Seasonal Lull Marks Bituminous Coal Market; Coke Takes Turn for Better

Year-end readjustment in the bituminous coal market is responsible to a great extent for conditions that have caused the trade to be in a frame of mind that is not exactly exultant. That is an old story, of course, in a business that has its full share of hard-boiled factors. This is not to say that it lacks optimists, for as a matter of fact it is the latter class who allow their cheerful expectations to blind their judgment, and when their hopes and predictions fail of realization—as many have since the hard-coal controversy first appeared on the horizon—due in large measure to overplaying hunches and the reappearance of the evils that no business can escape, they are grieved to hear aspersions cast at the industry.

It is gratifying to note that during the present difficulty the coal business has been freer than usual from practices of a questionable character. Like the cut-up who rocks the boat, the producer who is willing to "take a chance" and ship on consignment always is with us, and he eventually meets the usual fate, but there always is another to take his place. The better element in the trade—those with its best interests at heart—are sticking to ethical methods, realizing that such fundamentals as the survival of the fittest are still doing business at the old stand.

### Business Up to Seasonal Average

All things considered, the trade may be said to be pursuing a normal course. If business is not up to expectations—and it never is, in the estimation of some—that perhaps is because too much was expected. There is good reason to believe, however, that the outlook is better, for with the completion of inventories and the passing of the engrossing interests of holiday time there is bound to be a let-up in the marking-time policy now more or less prevalent, consumption continues apace and the end of the anthracite strike is not yet in sight. Curtailment of production by observance of the holidays at the mines also will tend toward a healthier condition in the market.

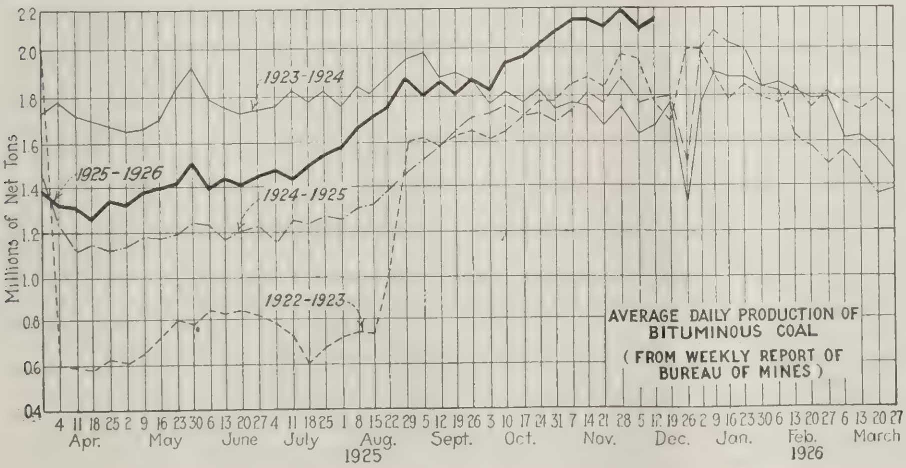
Governor Pinchot's efforts at peace in the hard-coal field having led nowhere in particular—save, possibly, deeper into hot water—resumption of mining seems to be as far off as ever. The special session of the Legislature called for Jan. 13 is likely to be productive of prolonged and acrimonious debate before accomplishing much in the way of results. Perhaps for that reason the demand for anthracite substitutes has improved, especially for coke, the price of which has taken a turn for the better.

### Production Nears 13,000,000 Tons

Bituminous coal production during the week ended Dec. 12 is estimated by the Bureau of Mines at 12,898,000 net tons, an increase of 31,000 tons over the revised figures for the preceding week and a mark exceeded only four times, but not within the last five years. Anthracite output in the week ended Dec. 12 totaled 64,000 net tons, compared with 62,000 tons in the previous week. Total hard-coal output during the calendar year to Dec. 12 is 62,009,000 tons, or 27.8 per cent less than during the corresponding period of 1924.

*Coal Age* Index of spot prices of bituminous coal stood on Dec. 21 at 179, the corresponding price being $2.17, compared with 182 and $2.20 on Dec. 14.

Dumpings of coal at Hampton Roads during the week ended Dec. 17 totaled 457,157 net tons, as against 337,558 tons in the preceding week.



### Estimates of Production

(Net Tons)

| | 1924 | 1925 |
|---|---|---|
| **BITUMINOUS** | | |
| Nov. 28 | 9,885,000 | 11,599,000 |
| Dec. 5 (*a*) | 10,831,000 | 12,867,000 |
| Dec. 12 (*b*) | 10,873,000 | 12,898,000 |
| Daily average | 1,812,000 | 2,150,000 |
| Cal. yr. to date | (*c*) 454,854,000 | 493,676,000 |
| Daily av. to date | 1,561,000 | 1,689,000 |
| **ANTHRACITE** | | |
| Nov. 28 | 1,611,000 | 36,000 |
| Dec. 5 | 1,814,000 | 62,000 |
| Dec. 12 | 1,772,000 | 64,000 |
| Cal. yr. to date | (*c*) 85,944,000 | 62,009,000 |
| **BEEHIVE COKE** | | |
| Dec. 5(*a*) | 174,000 | 298,000 |
| Dec. 12 (*b*) | 192,000 | 291,000 |
| Cal. yr. to date | (*c*) 9,057,000 | 9,946,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

## Midwest Trade Slumps Further

Lacking the aid of cold weather the Midwest market is in a disorganized condition, with coals offered at almost any price. Illinois and Indiana operators, when compared with producers in southeastern Kentucky, western Kentucky and West Virginia, however, have maintained their quotations unusually well. The main cause for the demoralization as usual, is too much coal produced and not enough demand.

Retail dealers will soon be in the market again, but it is obvious that as a rule they are not in the market now, being desirous of reducing stocks for inventory. They are quite willing to take a chance on coal being just as cheap around the first of the year as it is now, irrespective of labor and weather conditions.

Producers of high grade southern Illinois coal from Franklin, Saline and Williamson counties are sticking to their circular prices, although a few weak sisters have had to make sharp reductions to the big wholesalers in order to clear their tracks sufficiently to enable them to keep up production for steam contracts. Coal from non-union fields in the East and in western Kentucky continues to fleed the market, a good many hundred cars coming into Chicago on consignment now. Pocahontas lump coal of fairly good quality has been sold in distress in Chicago as low as $2.75. Pocahontas and other coal of recognized quality can be bought at $3.

The available market supply of steam coals continues to dwindle day by day, but apparently enough of it is coming in to take care of industrial demands, as purchasing agents show no interest in acquiring additional supplies.

The weather is not exactly seasonable and coal is not moving as it should in southern Illinois. Lump is moving rapidly, but there is a slowing up in egg and the other sizes. Domestic dealers report their yards pretty well loaded up and such coal as is moving is under pressure. Shaft mines are easing up in steam this week whereas last week there was brisk buying. A falling off in railroad tonnage also is reported. The strip mines continue to make good working time and apparently find a ready market. There have been no changes in prices and working time ranges from three to five days a week. There is no car shortage and the railroads show faster movement.

In the Duquoin and Jackson County field there is little change. The mines are getting four and five days a week and are having trouble moving all sizes. In the Mt. Olive field conditions are slow; railroad tonnage has eased off and domestic is fairly good, while steam seems to be holding its own. In the Standard field there has been an easing up and coal is selling at just about cost, with "no bills" at all mines and hard work to move all sizes. Railroad tonnage is slow. The mines are getting from two to four days a week. Prices are unchanged.

At St. Louis the weather is not the kind that calls for

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| **Low-Volatile, Eastern** | Market Quoted | Dec.22, 1924 | Dec.7, 1925 | Dec.14, 1925 | Dec. 21 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.85 | $5.25 | $4.25 | *$3.25@$3.75* |
| Smokeless mine run | Columbus | 1.90 | 3.10 | 2.85 | *2.65@ 2.90* |
| Smokeless screenings | Columbus | 1.10 | 2.60 | 2.60 | 2.50@ 2.75 |
| Smokeless lump | Chicago | 3.75 | 4.50 | 3.60 | *2.75@ 3.50* |
| Smokeless mine run | Chicago | 1.85 | 2.35 | 2.35 | *2.00@ 2.35* |
| Smokeless lump | Cincinnati | 3.75 | 5.10 | 4.25 | *3.00@ 4.25* |
| Smokeless mine run | Cincinnati | 1.85 | 2.35 | 2.35 | 2.25@ 2.50 |
| Smokeless screenings | Cincinnati | 1.20 | 1.90 | 1.85 | 1.75@ 2.00 |
| *Smokeless mine run | Boston | 4.10 | 5.30 | 5.00 | **4.90@ 5.15** |
| Clearfield mine run | Boston | 2.00 | 1.85 | 1.90 | **1.75@ 2.25** |
| Cambria mine run | Boston | 2.35 | 2.15 | 2.20 | **2.00@ 2.65** |
| Somerset mine run | Boston | 2.15 | 2.00 | 2.05 | **1.85@ 2.40** |
| Pool 1 (Navy Standard) | New York | 2.80 | 2.95 | 2.95 | 2.75@ 3.15 |
| Pool 1 (Navy Standard) | Philadelphia | 2.70 | 2.95 | 2.95 | 2.80@ 3.10 |
| Pool 1 (Navy Standard) | Baltimore | 2.30 | 2.20 | 2.20 | 2.20@ 2.25 |
| Pool 9 (Super. Low Vol.) | New York | 2.05 | 2.30 | 2.30 | 2.15@ 2.50 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.30 | 2.30 | 2.20@ 2.45 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.70 | 2.00 | 2.00 | 2.00@ 2.05 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.80 | 2.05 | 2.05 | 1.95@ 2.25 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.55 | 1.90 | 1.90 | 1.90@ 1.95 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.75 | 1.75 | 1.65@ 1.90 |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.90 | 1.90 | 1.85@ 2.00 |
| Pool 11 (Low Vol.) | Baltimore | 1.45 | 1.65 | 1.65 | 1.60@ 1.70 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.55 | 1.60 | 1.50@ 1.70 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.60 | 1.60 | 1.55@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.65 | 1.65 | 1.65@ 1.70 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.85 | 2.85 | *2.60@ 2.75* |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.35 | 2.35 | *2.00@ 2.25* |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 2.05 | 2.05 | 2.00@ 2.10 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.30 | 1.55 | 1.55 | 1.50@ 1.60 |
| Kanawha lump | Columbus | 2.30 | 2.85 | 2.60 | *2.00@ 2.50* |
| Kanawha mine run | Columbus | 1.55 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings | Columbus | .95 | 1.20 | 1.20 | 1.15@ 1.25 |
| W. Va. lump | Cincinnati | 2.15 | 2.60 | 2.75 | 2.50@ 3.00 |
| W. Va. gas mine run | Cincinnati | 1.50 | 1.65 | 1.55 | **1.60@ 1.75** |
| W. Va. steam mine run | Cincinnati | 1.40 | 1.50 | 1.50 | **1.50@ 1.65** |
| W. Va. screenings | Cincinnati | .95 | 1.15 | 1.10 | **1.10@ 1.25** |
| Hocking lump | Columbus | 2.50 | 2.85 | 2.60 | *2.25@ 2.50* |
| Hocking mine run | Columbus | 1.60 | 1.80 | 1.80 | **1.75@ 2.00** |
| Hocking screenings | Columbus | 1.10 | 1.35 | 1.25 | 1.20@ 1.30 |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.35 | 2.35 | 1.95@ 2.75 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.85 | 1.85 | 1.80@ 1.90 |
| Pitts. No. 8 screenings | Cleveland | 1.50 | 1.55 | 1.45 | 1.40@ 1.50 |

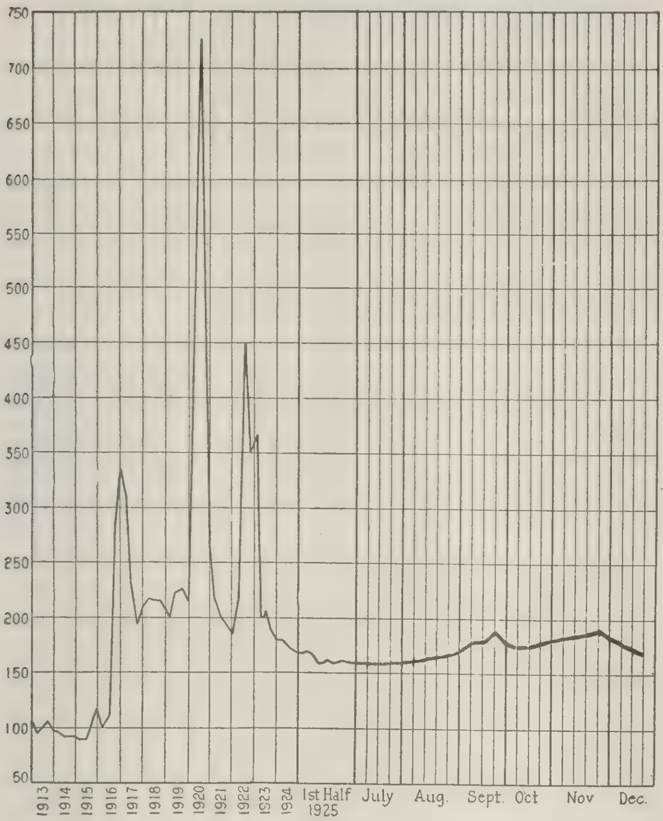
| **Midwest** | Market Quoted | Dec.22, 1924 | Dec.7, 1925 | Dec.14, 1925 | Dec. 21, 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $3.25 | $3.50 | $3.50 | *$3.25@$3.50* |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.50 | 2.50 | 2.35@ 2.65 |
| Franklin, Ill. screenings | Chicago | 1.75 | 1.85 | 1.85 | 1.75@ 2.00 |
| Central, Ill. lump | Chicago | 2.85 | 3.00 | 3.00 | *2.75@ 3.00* |
| Central, Ill. mine run | Chicago | 2.20 | 2.30 | 2.30 | 2.25@ 2.35 |
| Central, Ill. screenings | Chicago | 1.75 | 1.40 | 1.40 | 1.35@ 1.50 |
| Ind. 4th Vein lump | Chicago | 3.10 | 3.10 | 3.10 | *2.75@ 3.25* |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.35 | *2.25@ 2.35* |
| Ind. 4th Vein screenings | Chicago | 1.70 | 1.85 | 1.85 | 1.75@ 2.00 |
| Ind. 5th Vein lump | Chicago | 2.75 | 2.50 | 2.50 | 2.35@ 2.65 |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ 2.10 |
| Ind. 5th Vein screenings | Chicago | 1.55 | 1.40 | 1.40 | 1.35@ 1.50 |
| Mt. Olive lump | St. Louis | 3.00 | 2.85 | 2.85 | 2.75@ 3.00 |
| Mt. Olive mine run | St. Louis | 2.35 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.10 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.75 | 2.40 | 2.40 | 2.35@ 2.50 |
| Standard mine run | St. Louis | 1.95 | 1.80 | 1.80 | 1.75@ 1.90 |
| Standard screenings | St. Louis | 1.05 | .85 | .85 | .75@ 1.00 |
| West Ky. block | Louisville | 2.20 | 2.10 | 2.10 | *1.85@ 2.15* |
| West Ky. mine run | Louisville | 1.55 | 1.35 | 1.35 | 1.25@ 1.50 |
| West Ky. screenings | Louisville | 1.05 | .85 | .95 | .80@ 1.10 |
| West Ky. block | Chicago | 2.35 | 2.05 | 2.05 | *1.75@ 2.25* |
| West Ky. mine run | Chicago | 1.50 | 1.25 | 1.25 | 1.15@ 1.35 |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 2.85 | 2.75 | 2.75 | 2.50@ 3.00 |
| Big Seam mine run | Birmingham | 1.70 | 2.10 | 2.10 | 2.00@ 2.25 |
| Big Seam (washed) | Birmingham | 1.85 | 2.30 | 2.30 | 2.10@ 2.50 |
| S. E. Ky. block | Chicago | 2.50 | 3.25 | 3.25 | *2.75@ 3.50* |
| S. E. Ky. mine run | Chicago | 1.45 | 2.15 | 2.15 | 2.00@ 2.35 |
| S. E. Ky. block | Louisville | 2.60 | 3.25 | 3.25 | *2.75@ 3.25* |
| S. E. Ky. mine run | Louisville | 1.40 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Louisville | .95 | 1.35 | 1.25 | *1.00@ 1.25* |
| S. E. Ky. block | Cincinnati | 2.35 | 3.25 | 2.85 | 2.75@ 3.00 |
| S. E. Ky. mine run | Cincinnati | 1.45 | 1.60 | 1.60 | **1.50@ 1.75** |
| S. E. Ky. screenings | Cincinnati | .90 | 1.20 | 1.10 | **1.00@ 1.35** |
| Kansas lump | Kansas City | 4.75 | 5.00 | 5.00 | 5.00 |
| Kansas mine run | Kansas City | 3.00 | 3.25 | 3.10 | 3.00@ 3.25 |
| Kansas screenings | Kansas City | 2.30 | 2.30 | 2.30 | 2.25@ 2.35 |

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Dec. 22, 1924 | | Dec. 14, 1925 | | Dec. 21, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | | $8.00@ $9.25 | | | | |
| Broken | Philadelphia | 2.39 | | 9.15 | | | | |
| Egg | New York | 2.34 | $8.25@$8.75 | 8.75@ 9.25 | | | | |
| Egg | Philadelphia | 2.39 | 9.45@ 9.75 | 8.80@ 9.25 | | | | |
| Egg | Chicago* | 5.06 | 8.17@ 8.40 | 8.08 | $9.50@$10.00 | $8.03@$8.25 | $9.50@10.00 | $8.03@$8.25 |
| Stove | New York | 2.34 | 9.50@10.25 | 9.00@ 9.50 | | | | |
| Stove | Philadelphia | 2.39 | 10.10@10.75 | 9.15@ 9.50 | | | | |
| Stove | Chicago* | 5.06 | 8.80@ 9.00 | 8.53@ 8.65 | 10.00@11.00 | 8.48@ 8.80 | 10.00@11.00 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 9.75@10.25 | 8.75@ 9.40 | | | | |
| Chestnut | Philadelphia | 2.39 | 10.00@10.75 | 9.25@ 9.40 | | | | |
| Chestnut | Chicago* | 5.06 | 8.61@ 9.00 | 8.40@ 8.41 | 10.00@11.00 | 8.50@ 8.75 | 10.00@11.00 | 8.50@ 8.75 |
| Pea | New York | 2.22 | 4.50@ 5.50 | 5.50@ 6.00 | | | | |
| Pea | Philadelphia | 2.14 | 5.75@ 6.00 | 6.00 | | | | |
| Pea | Chicago* | 4.79 | 5.36@ 5.75 | 5.36@ 5.95 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 |
| Buckwheat No. 1 | New York | 2.22 | 2.00@ 2.25 | 3.00@ 3.15 | | | | |
| Buckwheat No. 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | | 2.50@ 3.00 | | 2.50@ 3.00 |
| Rice | New York | 2.22 | 1.85@ 2.00 | 2.00@ 2.25 | | | | |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | | | | |
| Barley | New York | 2.22 | 1.25@ 1.50 | 1.50 | | | | |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | | | | |
| Birdseye | New York | 2.22 | 1.40@ 1.60 | 1.60 | | | | |

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Dec. 21 | Dec. 14 | Dec. 7 | Dec. 22 |
| Index ................... | 179 | 182 | 184 | 170 |
| Weighted average price.. | $2.17 | $2.20 | $2.22 | $2.06 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1924, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

any unexpected movement of coal and some retailers are just fairly busy moving small orders—of middle grades chiefly, although there has been a fairly good demand in the past week for high grade from both southern Illinois and western Kentucky. There has been a light call for smokeless, but anthracite is slow and coke is about holding its own. Country domestic has been quiet, dealers reporting large supplies on hand. Local wagonload steam shows improvement, carload is just about normal and country steam is slow. No change in prices.

### Heavy Output Causes Weakness in Kentucky

Demand for coal in Kentucky continues fair, but production is so heavy and offerings so large that prices have weakened somewhat. The eastern Kentucky market is generally lower due in part to West Virginia mines quoting lower prices and moving large tonnage. In western Kentucky everything is weaker except screenings, which are being well maintained, at firmer prices, the market being kept cleaned up on pea and slack. Mine-run shows very little change in either field, prices being fairly firm, but a few lots are being offered at under the market.

General industrial demand is very good and the railroads are using a lot of engine, shop and general coal. Consumption is abnormally high for the season on steam coal, but mild weather and fair stocks in retailers' hands are making for just a little dullness in prepared, which probably would not appear dull except for the very heavy offerings.

Mines in eastern Kentucky which haven't operated in a long time have been running on the fall market, and car supply continues very good as a whole. Current loadings are very good. Western Kentucky is getting all the cars she needs to load, but needs orders worse than coal.

Prices for eastern Kentucky block are $2.75@$3.25, with some specialty coals priced higher; lump, $2.50@$3; egg, $2.25@$2.50; nut, $2@$2.25; mine-run, $1.50@$1.75; screenings, $1@$1.25. West Kentucky block is $1.85@$2.15; lump, $1.75@$1.90; egg, $1.60@$1.85; nut, $1.35@$1.50; mine-run, $1.25@$1.50; screenings, 80c.@$1.10.

### Northwest Trade Fairly Active

Coal-dock operators at Duluth and Superior have found business good during the last ten days, though no special rush was noted in any direction. Industrial demand has not been so active lately, but iron mining companies on the Minnesota ranges are coming into the market for fair tonnages, mainly of Youghiogheny dock-run and screenings. Retailers also have been filling out stocks that had become run down and utilities and the railroads have been taking fair tonnages.

The number of cars loaded at the docks during December is expected to compare favorably with November, and, thanks to good service by the railroads, the trade has been handled without difficulty.

Fifteen cargoes of bituminous coal were unloaded at the docks during the last week of lake navigation, which wound up Dec. 15. Stocks of bituminous coal on commercial docks at Duluth and Superior totaled 5,136,000 tons on Dec. 1; anthracite, 156,000 tons. Demand for Pocahontas and other smokeless coals as substitutes for anthracite continues to be the market feature. Briquets also are beginning to sell more freely as hard-coal stocks approach the exhaustion stage, which will be about the middle of next month.

Apart from an easier situation in prepared sizes of Pocahontas, which are now offered at $8.50, or 50c. off, the market is practically unchanged in either anthracite or bituminous coals.

Fuel conditions in Milwaukee have not changed in the last week. Demand fluctuates with temperature, but on the whole business is seasonable and satisfactory. In the absence of anthracite, consumers are using gas coke, process coke and low-volatile bituminous coals. Prices are steady.

### Cold Snap Livens Southwest

Colder weather has brought a resumption of activity in the Southwestern field. Mines in Kansas continued to work through the long period of mild weather, but a slight surplus of lump had begun to accumulate when freezing temperature livened the market and operators foresaw an early return to conditions of three weeks ago, when they were two weeks behind with deliveries. The change in temperature, however, had little effect on conditions in Arkansas, where mines have been working only part time for several weeks. Buyers of Arkansas semi-anthracite stocked their bins early in the fall, and these will not begin to run low until after the first of the year.

In Colorado the prevailing warm weather has had the effect of curtailing orders and depressing output. The mines are operating approximately 86 per cent running time. While there has been no cancellation of orders, the trade is withholding future orders anticipating a change in the weather. All the mines have caught up with orders that came with the heavy demand in October and early November. There seems to be an oversupply of labor now due to the sugar beet campaign having ended. Transportation conditions are excellent. Prices show no appreciable change.

The Utah trade still hopes for seasonable weather to stimulate the movement of coal for heating purposes. Demand for steam coal is at least normal for the time of year. Railroads have been consuming more than usual on account of heavy crops, and other industries using steam coal are enjoying prosperity. The coal business is going to be better in the country districts this winter on account of the prosperity of the farmers. No grade of coal is regarded as a drug on the market now. Two months ago there was a surplus of slack, but now the supply is scarcely sufficient to meet the demand. Domestic lump and straight lump are still leading grades in the consumers' market, but more slack and pea coal is being used for heating purposes than heretofore, as a result of the installation of smoke consumers. Oil burners are getting a foothold, but their progress is by no means sensational. The news that oil has been struck in Utah is expected to hurt the coal business more or less. Prices are steady and the labor situation good.

### Squeeze Continues at Cincinnati

Toploftiness in price, which has been a feature of the smokeless market at Cincinnati for three months or so, was pretty well dispelled during the past week. Distress lump has been hammered so hard by buyers and those who thought it to their advantage to "get out from in under" that sales are reported of odd lots at around $3 and even a shade less. Egg appears to have been a little better off, the lowest it went being $3.75. Contract holders say that they are still shipping the two at $5@$5.25, but there have been compromises in order to keep things rolling. The disposition is to hold mine-run as firm as possible. Screenings are weaker though the range has not been changed.

High volatile seems to have fared a little better. The raid on this price line-up has abated a little, even though the demand is not brisk. Hazard prices, taken as a criterion for southeastern Kentucky, hold at $3 for block; only over-anxious sellers go below that. West Virginia shippers, with an immense tonnage to keep moving, whittle here and there with the prices down to $2.50. Quality lump, however, has little bother in commanding $2.75@$3. Egg prices maintain their level of $2@$2.50 because of demand from Michigan points and Canada in the main. There is no change in the even tone which has marked mine-run for months. Screenings also have recovered their poise, this due more to seasonal uncertainty at the holiday period.

Only a spell of colder weather, it is believed, is needed to wipe out accumulations and the buying orders of the first of the month will tone up the market so that it should go forth with a bang.

Retail business is unchanged. River business is good, with the stage right and ports from Portsmouth to Louisville in grand shape to handle offerings over their elevators.

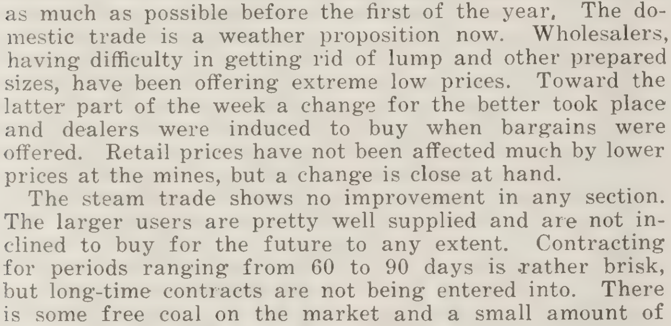
### Columbus Dealers Go Bargain Hunting

Weakness in domestic sizes has marked the Columbus coal trade during the past week. Warm weather and the approach of the holiday season have been contributing causes. Dealers have heavy stocks and desire to clean up as much as possible before the first of the year. The domestic trade is a weather proposition now. Wholesalers, having difficulty in getting rid of lump and other prepared sizes, have been offering extreme low prices. Toward the latter part of the week a change for the better took place and dealers were induced to buy when bargains were offered. Retail prices have not been affected much by lower prices at the mines, but a change is close at hand.

The steam trade shows no improvement in any section. The larger users are pretty well supplied and are not inclined to buy for the future to any extent. Contracting for periods ranging from 60 to 90 days is rather brisk, but long-time contracts are not being entered into. There is some free coal on the market and a small amount of distress coal, which sells at low figures.

Under the influence of reduced demand, output in southern Ohio has declined to between 25 and 30 per cent of capacity. Pomeroy Bend, which is operating on the 1917 scale basis, has been pretty busy.

In eastern Ohio demand is unusually dull and retailers are loaded up. Spot prices are unchanged since last week. Production is declining, eastern Ohio output in the week ended Dec. 12 totaling 309,000 tons, or 44 per cent of capacity. This was a decrease from the preceding week of 30,000 tons but an increase over the corresponding week of last year of 36,000 tons. Some distress coal is in evidence and the price tendency is soft.



### Industries Heavy Consumers at Pittsburgh

Demand in the open market for coal at Pittsburgh seems to be a trifle better this week, though the falling off in buying weeks ago is exerting a downward influence and the appearance of the market is weaker. Youghiogheny gas coal, which for several weeks it was quoted at $2.75@$3, has shown a trading range in the last few days of $2.60@$2.75; Westmoreland County gas is $2.50, being sometimes shaded. Gas mine-run is quotable at $2@$2.25, depending on the urgency of the seller. Steam coal runs the same as formerly, $1.40@$1.50 for slack, $2@$2.10 for mine-run, and $2.25@$2.50 for ¾-in. Industrial consumption of coal is quite heavy, as the industries are running very well.

The straight bituminous trade in Buffalo is quite as slow as ever, with prices very unsteady. Slack is scarce and gas coal is not plentiful, but the consumer is indifferent, having, it is said, more coal in stock than almost ever before. The smokeless trade has not done much yet, the price having advanced only from $6 to $6.75, while coke has gone up $3 and probably will soon go still higher. Quotations: $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run, $1.25@$1.40 for slack; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, $1.30@$1.60 for slack; $1.75@$2 for Allegheny Valley mine-run.

### New England Trade Unseasonably Dull

The market for steam coal in New England, considering the season, is extremely dull. Apparently the domestic consumer who was relied upon to absorb a heavy tonnage has not risen to trade expectations. The fact is that bituminous output had already been built up to large proportions when the slump came, and there was a limit to what retail dealers would take on in advance of actual demand from the public. There are many now who say it was a mistake to encourage the use of prepared bituminous in this market. This is a territory that has been served by rail and water—a route economically cheaper—with low volatile run-of-mine, and the publicists who recommended lump, egg and nut from the smokeless districts failed to take into account both the expensive routing all-rail and the buoyancy of price that immediately results from insistent demand on the producer. Except in sparing quantities the industries, too, are not buying; most of the mills and utilities accumulated reserve stocks months and weeks ago, and are not likely to be interested in anything but deliveries on contract for a while.

At Hampton Roads the spot market is almost soft, and new low levels in price are anticipated. Owing to the pressure of increasing volume on the rails No. 1 navy standard Pocahontas and New River coals are being offered at less than $5 per gross ton f.o.b. vessel, with intimations that lower figures would be acceptable for prompt loading. A few cargoes of splint coal are coming forward as a substitute for anthracite at an average price of $3.50 per net ton at the mines. There would probably be a better opening by water than by rail for coal of this character, although much would depend upon how well it stands rehandling.

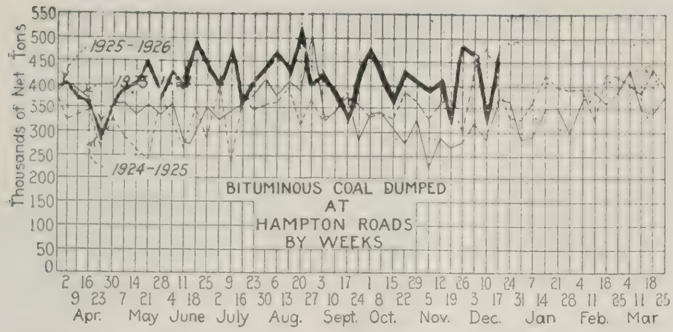
Cargoes of foreign coal continue to arrive in reasonably large volume. Less fancy Welsh anthracite is included than was the case a month ago; the desirable kinds and sizes were bid up to prices beyond the reach of ordinary retail distributors. The importation of Scotch and German coke, especially metallurgical coke, doubtless will be abandoned. Results have been unsatisfactory and there are dealers who have it on their hands and are unable to find sale for it. Patent fuel, such as ovoids, however, seem to be going fairly well and are offered at retail at around $16 per net ton. Boston retail dealers still have Pennsylvania anthracite they sell for $18 per net ton delivered.

On cars Boston and Providence the prices of smokeless coals range $6.10@$6.50 per gross on for inland delivery. Inquiry is very light.

### Buying Is Fair in New York

Industrial consumers of bituminous coal in New York are taking in fair-sized tonnages of mine-run grades, both by rail and over the tidewater piers. Considerable tonnages are used in office buildings and other structures as a substitute for the smaller hard coals. Screened coals are in fair demand but are not up to expectations.

Quotations for low-volatile lump from central Pennsylvania range $3.50@$4.50; Broad Top coals, $5.75@$6.25. New River and Pocahontas prepared grades are priced



around $4.50@$5 at the mines. There is a fair demand for these coals in this market.

The Philadelphia market remains somewhat quiet, although there is some expectation of better business because of colder weather and failure to clear up the anthracite situation. Regular users of bituminous coal continue to take fuel in good volume, but even the threat of winter storms has brought no disposition to add to commitments.

Producers of screened coals, particularly low volatile, report better inquiries and shipments. Concerns producing high-volatile grades are getting more orders, but are far from having anything like the business they had hoped for.

Everything remains quiet at tidewater in the way of export orders, and few inquiries have been received of late. Bunkering is easily cared for. Prices remain fairly stable.

Little change is to be noted in the bituminous situation at Baltimore. Industrial call has been moderate, the amount of fuel on hand is liberal, to say the least, and competition in selling is so keen that at times it approaches the point of trading without profits. Even in prepared sizes, used as substitutes for anthracite, there is not the activity expected; these are quoted at $2.15@$2.25 f.o.b. mine. One of the things that troubles coal men now is the falling off in the export and bunker trade.

Steam coal is very active in Birmingham and there is no surplus of any grade. Coking coals and washed product suitable for the bunker trade are exceedingly scarce and the demand strong. Current consumption in the industrial field and among the utilities and railroads is heavier than at any other time during the past year, several of the rail lines having been in the open market trying to buy fuel to supplement their contract deliveries, on which they are taking the maximum tonnage. A certain amount of this coal is being stocked for the holidays, but the movement is much heavier than at this season for several years past. Bunker fuel is being bought in larger quantities than usual and some trouble is experienced in keeping the required tonnage moving to the ports. Some mines in the district had to decline some of this business altogether during the past week. Quotations on washed Cahaba and Black Creek now range $2.75@$3, mines. There has been no change in the range of other steam quotations during the past week.

Inquiry for domestic sizes is not as strong or insistent as it had been, but there is ample business in hand at the mines to take care of production for several weeks yet, and a fairly good number of orders are being taken on to supplement such bookings. The weather has been unseasonably warm for several weeks, which has militated against the active buying of household fuel. Quotations on domestic coals are unchanged.

An output of 435,000 net tons was reported for the week of Dec. 5, which is the highest for a similar period since 1918. Car supply has been sufficient to keep the mines going without delay for the past several weeks, but should production be increased very much a shortage no doubt would materialize.

## Demand for Hard-Coal Substitutes Spurts

Improvement in demand for the various anthracite substitutes in New York last week resulted from lower temperature. Buying by retailers and consumers was on a larger scale. Coke appeared to take the lead, although there was a heavy demand on retailers having some anthracite. Anthracite domestic coals are quoted as high as $23.50 by dealers able to make deliveries.

Consumers are not as optimistic of the ending of the strike as they were last week and are more willing to lay in more fuel.

There is some No. 1 buckwheat still afloat in the New York harbor. Good grades are quoted at $8.75 to $9.25, while mixed buckwheat, containing, it is claimed, about 50 per cent undersized coal, is quoted at $8 to $8.25, alongside. One day last week it was said there was one cargo of pea coal available in the harbor, which was held at about $17 alongside.

Coke has taken an upward turn. Quotations are up about 50c. Egg size is quoted at $5.50@$6; nut and stove sizes at $6@$6.50. Coke in boats in the harbor is quoted at about $10 alongside.

At Philadelphia an increased demand for fuel of all kinds has sprung up since Governor Pinchot's first peace efforts went up in smoke. Shippers of byproduct coke are again sold up weeks in advance, with beehive coke following closely on its heels. Prices have advanced, most of the sized beehive selling at $6@$7 at the ovens while byproduct brings about $10@$11 delivered.

Most all anthracite coal is now out of the retail yards, although a few dealers have small quantities of pea and buckwheat. The one company that had been shipping some pea and buckwheat here for the last several weeks now announces that its storage yards are empty.

At Baltimore the hard-coal situation is confined to some isolated instances of selling out of the usual run, as the larger dealers no longer have anthracite to offer of any size. A number of small fly-by-night traders have arisen, and are disposing of peck and bushel lots of soft coal, or hard coal where they could get a little at any reasonable price. These small dealers in many cases were not content with the profits they made from stiff prices for pecks and bushels, but used short-weight measures.

Buffalo's anthracite supply is coming to an end, having lasted much longer than expected. Coke is active and is getting scarce. Byproduct coke makers are withdrawing price quotations or putting them up. There is a good demand for buckwheat anthracite, but the schedule companies are all about out of it; there is still a fair supply of it in the hands of independent dealers, however.

## Connellsville Coke Market Stiffens

The Connellsville coke market, after softening on first-quarter contract coke for blast furnaces, letting most of the uncovered furnaces in, has stiffened sharply in the last few days in prepared coke, resulting in higher prices for run-of-oven furnace coke.

In blast-furnace contracting, when offers at $4.50 and then at $4.25 did not interest furnaces, some operators became perturbed, and, anxious to book backlogs, closed a number of contracts at $3.75@$4—about an even dollar above the average of the contracts about to expire, made last summer. It appeared then that operators who had not sold any backlogs would also name these prices, but with the stiffening in the spot market this may not prove to be the case.

The turn in spot and prompt coke was due to various dealers, both in Pittsburgh and in the East, discovering that other dealers also were short, rushing to cover. Yard crushed coke had sold in a few cases at down to $4.25, but it is up to $6 now. It turns out also that operators sold pretty heavily recently at low prices and some are if anything oversold. Further advances are a decided possibility.

While the rush to buy is chiefly in broken, yard crushed, egg, regular crushed, etc., there is a strong influence on run-of-oven coke, which may now be quoted at $4, against $3.50@$3.75 a week ago. Some furnaces already have paid up to $4, it is said. Some have been buying extra lots, as is often done just before the holidays, to tide over a possible dip in contract shipments.

Spot foundry coke remains quotable at $4.75@$5.25, but is likely to advance. Contracts over the half year are quotable at the same range.

## Car Loadings, Surplusages and Shortages

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Dec. 5, 1925 | 1,020,873 | 191,821 |
| Previous week | 923,213 | 172,279 |
| Week ended Dec. 6, 1924 | 969,485 | 193,763 |

| | Surplus Cars | | Car Shortage | |
|---|---|---|---|---|
| | All Cars | Coal Cars | | |
| Dec. 7, 1925 | 159,897 | 54,277 | ........ | ........ |
| Nov. 30, 1925 | 136,796 | 43,658 | ........ | ........ |
| Dec. 7, 1924 | 208,451 | 95,961 | ........ | ........ |

# Foreign Market And Export News

## British Market Reflects Steady All-Round Gain; Output Still Climbing

A steady business continues in the British market for steam coals. Collieries are engaged busily on inland orders, which have perceptibly improved. Export inquiries flow at a fair pace, though much French business is reported in abeyance pending improvement in the position of the franc. The improving tendency in Italian demand remains in evidence, and a fair average business passes with the depots in South America, Spain and Portugal. Intimation has been received locally of possible heavy demands on Wales. A little more interest has been, and is, manifest in contract business, though buyers and sellers are at variance over prices and selling is mainly up to next April. Small coals are a strong section, this being due to larger bunker business, which includes increased proportions of smalls. Best Admiralty large is moving well for early loading. Monmouthshires are meeting with a better demand after prolonged inactivity, though supplies are momentarily adequate, apart from smalls. Patent fuel also is enjoying better business at easier prices.

Bad weather in Newcastle has delayed tonnage supplies again, and the prompt business in the coal market is very erratic in consequence, buyers with guaranteed tonnage being well placed for obtaining discounts. The forward outlook, however, is fairly straight, and the sellers of both coal and coke are making no concessions on recent quotations. Just how far the coal subvention is assisting matters it is difficult to determine, but it is thought that the present selling prices will enable producers to keep on selling coals, but the prices themselves are not possible without the subsidy. Therefore, the anxious time is between now and the end of the subsidy period. The coke market continues to improve. There is a fairly healthy export demand for this class of fuel.

Production by British coal mines during the week ended Dec. 5, according to a special cable to *Coal Age*, totaled 5,210,000 gross tons, compared with an output of 5,185,000 tons in the preceding week.

## Trade in French Market Takes Favorable Turn

The situation in the French coal market is generally favorable. Available supplies have increased somewhat during the last few days and this has made it possible to meet a slightly larger demand from the industry.

The depreciation of the French franc affects especially industrial grades, as there cannot be any question of curtailing imports of domestic coals. Wintry weather has increased the demand for house fuels, but Paris dealers note that consumers are ordering only small quantities at a time.

Imports of British coals are again decreasing, but still the news that the prices of Welsh anthracites have ceased rising was greeted with pleasure.

Notwithstanding their strong representations, Paris coal merchants have had to agree to pay for Belgian coal on the basis of the Belgian franc.

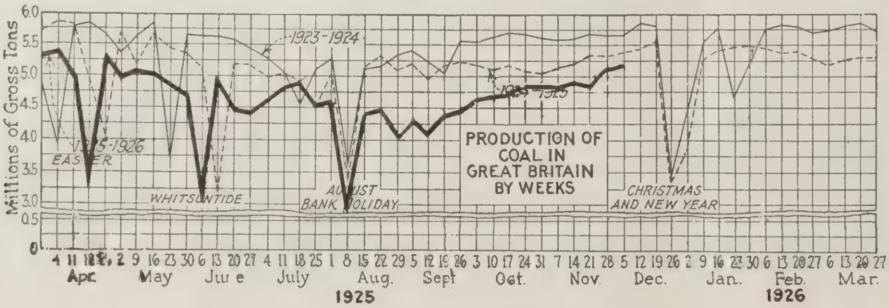
Indemnity fuel deliveries from the Ruhr during the first twenty-one days of November included 330,700 tons of coal, 149,300 tons of coke and 20,400 tons of lignite briquets. During the entire month of November, the O. R. C. A. received from the Ruhr 208,210 tons of coke, a daily average of 6,940 tons.

The prices of reparation fuels delivered via Rotterdam, Antwerp or Ghent, which were raised on Nov. 16, were again advanced from 3 to 7 fr. on Dec. 1 owing to the depreciation of the franc.

## Business Dull, Prices Weak At Hampton Roads

Business at Hampton Roads last week was very dull, with prices weakening perceptibly, in the face of slackening demand. Prices at the mines were reported as having dropped materially, Pocahontas nut and egg having dropped from $8 per net ton mines to $4.50.

New England business was slower than normal for the season and foreign business was scarcely holding its own. The bunker trade was showing only fair activity.



## Weak Tone in Belgian Market

The tendency in the Belgian coal market remains weak except for house coals. On the whole demand is still meager and, notwithstanding the restriction of output, pithead stocks are not decreasing. Competition of French coals is very active, as is also that of Dutch and British coals.

The situation is particularly bad in the Borinage district. In the other fields indications point to a slight improvement.

Operators declared that the present circumstances make it impossible to maintain the 5 per cent increase in wages agreed to for November. Conditions in the trade remain unfavorable and the measures taken by the government for remedying them have so far been of no avail.

## Export Clearances, Week Ended Dec. 19, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For Cuba: | |
| Br. Str. Mabay, for Havana | 2,743 |
| Nor. Str. Gro, for Havana | 6,561 |
| For Argentina: | |
| Dutch Str. Ameland, for Puerto La Plata | 4,520 |
| Br. Str. Seethope, for Rosario | 3,761 |
| For Brazil: | |
| Br. Str. Queen Olga, for Rio de Janeiro | 5,880 |
| For Bermuda: | |
| Swed. Str. Mongolia, for St. Georges | 2,833 |
| For Italy: | |
| Ital. Str. Fiume, for Porto Ferrajo | 3,767 |
| Ital. Str. Valcerusa, for Bagnoli | 7,170 |
| For Canal Zone: | |
| Amer. Str. Achilles, for Cristobal | 12,036 |

FROM PHILADELPHIA

| | |
|---|---|
| For Cuba: | |
| Br. Str. Wellpark, for Antilla | —— |

## Hampton Roads Coal Dumpings*

(In Gross Tons)

| | Dec. 10 | Dec. 17 |
|---|---|---|
| N. & W. Piers, Lamberts Pt.: | | |
| Tons dumped for week | 137,574 | 140,533 |
| Virginian Piers, Sewalls Pt.: | | |
| Tons dumped for week | 56,321 | 113,545 |
| C. & O. Piers, Newport News: | | |
| Tons dumped for week | 107,496 | 154,098 |

*Data on cars on hand, tonnage on hand and tonnage waiting withheld due to shippers' protest.

## Pier and Bunker Prices, Gross Tons

PIERS

| | Dec. 12 | Dec. 19† |
|---|---|---|
| Pool 1, New York | $5.75@$6.00 | $5.75@$6.00 |
| Pool 9, New York | 5.10@ 5.30 | 5.10@ 5.30 |
| Pool 10, New York | 4.80@ 5.15 | 4.80@ 5.15 |
| Pool 11, New York | 4.55@ 4.75 | 4.55@ 4.75 |
| Pool 9, Philadelphia | 5.05@ 5.30 | 5.05@ 5.30 |
| Pool 10, Philadelphia | 4.80@ 5.10 | 4.80@ 5.10 |
| Pool 11, Philadelphia | 4.50@ 4.75 | 4.50@ 4.75 |
| Pool 1, Hamp. Roads | 5.00@ 5.25 | *4.85@ 4.95* |
| Pool 2, Hamp. Roads | 4.75@ 4.90 | *4.75@ 4.80* |
| Pools 5-6-7, Hamp. Rds. | 4.50 | **4.50@ 4.55** |

BUNKERS

| | Dec. 12 | Dec. 19† |
|---|---|---|
| Pool 1, New York | $6.00@$6.25 | $6.00@$6.25 |
| Pool 9, New York | 5.35@ 5.55 | 5.35@ 5.55 |
| Pool 10, New York | 5.05@ 5.40 | 5.05@ 5.40 |
| Pool 11, New York | 4.80@ 5.00 | 4.80@ 5.00 |
| Pool 9, Philadelphia | 5.30@ 5.55 | 5.30@ 5.55 |
| Pool 10, Philadelphia | 5.10@ 5.35 | 5.10@ 5.35 |
| Pool 11, Philadelphia | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 1, Hamp. Roads | 5.00@ 5.25 | *4.95* |
| Pool 2, Hamp. Roads | 4.75@ 4.90 | *4.80* |
| Pools 5-6-7, Hamp. Rds. | 4.60 | *4.55* |

## Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Dec. 12 | Dec. 19† |
|---|---|---|
| Admiralty, large | 21s.@22s.6d. | **23s.@23s.6d.** |
| Steam smalls | 13s.6d. | 13s.6d. |
| Newcastle: | | |
| Best steams | 17s.6d.@18s. | *15s.3d.* |
| Best gas | 16s.3d. | **16s.6d.** |
| Best bunkers | 15s. | **16s.6d.** |

† Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

George Gordon Crawford, president of the Tennessee Coal, Iron & Railroad Co., has announced that $10,000,000 will be spent for additions and new construction at the Fairfield division of the corporation. A battery of seventy-seven 16-ton byproduct ovens will be added to the present plant composed of 434 ovens and a belt conveyor will be installed to carry coke from the ovens to the furnaces.

## COLORADO

A new coal company has been organized under the name of Barbour Coal Co., which will start to develop a coal mine in Huerfano County on the Rio Grande R.R., between the Alamo mine and Kebler No. 2 mine. The principal owners of the new company now control the Alamo Coal Co. and the Oakdale Coal Co. About a million dollars, it is said, will be spent in developing the mine.

The citizens of Frederick have sued the Evans Fuel Co. et al for $22,000 damages, alleging that improper coal mining methods are causing the plaster to fall and walls to crack in their homes, while holes are forming in the main street.

## ILLINOIS

Sale of 12,500 shares of the 15,000 shares of the stock of the defunct Southern Gem Coal Corp. was approved by Judge English in the U. S. District Court in East St. Louis, Dec. 11. The sale was to have taken place Dec. 8, but objections of a technical nature were filed by certain of the original stockholders. According to the terms of the sale the receivers of the defunct company received $100,000 in cash for the property, and the purchaser, the Brewerton Coal Co. of Lincoln, assumes mortgages and obligations totaling $1,633,000. It is expected that a portion of the mines will be opened this winter.

The Illinois State Miners' Examining Board has announced its January schedule as follows: Belleville, 11th; Harrisburg, 12th; Herrin, 13th; Marion, 14th; Benton, 15th; Duquoin, 16th; Litchfield, 18th; Springfield, 19th; Pana, 20th; Danville, 21st; Farmington, 22d.

Dr. Edmund H. Stinnes, owner and operator of large coal properties in Germany, was a visitor to the southern Illinois coal field last week. Dr. Stinnes spent some time in several of the larger mining centers in southern Illinois, with West Frankfort as his headquarters. He was shown the bottom and top works of several mines, including No. 9 of the Old Ben Coal Corporation. In his tour of the United States Dr. Stinnes' general purpose is to study economic conditions in industrial centers. While in the local mining fields he declared that conditions were much more favorable in this country for coal mining than in his own country.

According to information available now, the prospects of the proposed merger of mines in the Standard and Mt. Olive fields seems to be at an end. Recent conferences, according to reports, show that the financial features of the proposition are almost too big for the people that are now handling it.

## IOWA

The Dallas coal mine, one of the largest in Polk County, located northwest of Granger, has been purchased by the newly organized Dallas Products Co., of which Russell E. Carlson, H. M. Havner and Hugh Shuler are the principal stockholders. The company is capitalized at $250,000. Arrangements have been made to operate the mine at once. The output of the Dallas mine runs between 400 and 500 tons daily. The Dallas Coal Co., former owner, has been in receivership since April 10.

## KANSAS

An attempt to blow up and burn the fan house and tipple of the Moore Coal Co. mine in the southeastern Kansas field, early in the morning of Dec. 11, was frustrated when a man living near the mine discovered smoke issuing from the tipple and summoned aid to extinguish the fire. A keg of power was exploded under the belt wheel of the air fan in the fanhouse setting fire to the building but no serious damage resulted. A pile of oily waste had been ignited in the tipple. The total damage was estimated at not more than $50. No clues were found. The mine employs forty union miners.

Coal operators of Kansas are on the warpath against so-called "compensation leaches," who they say enter fraudulent claims for compensation. Insurance adjusters are insisting, they say, that action be taken to reduce the number of alleged unjust compensation claims, under a veiled threat of withdrawal. Formation of a central body, or "compensation clearing house," has been suggested, and it is understood a strong lobby is to be formed by Kansas coal operators at the January, 1927, session of the state legislature to urge changes in the state compensation laws.

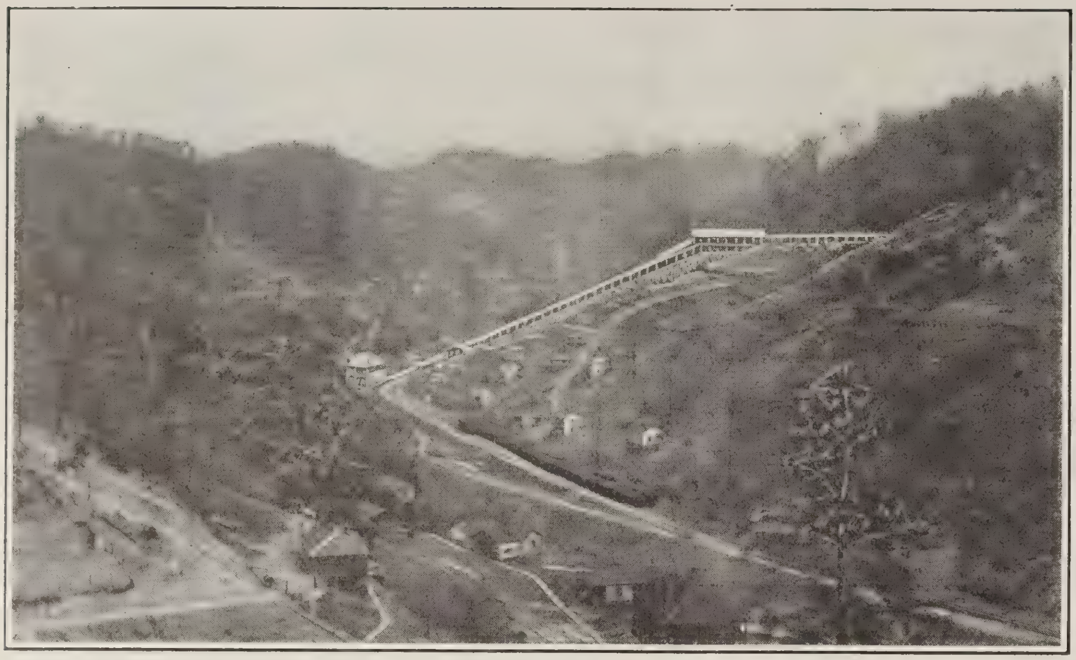
Jesse S. Rogers was appointed Dec. 1 to the position of state mine-rescue superintendent at the Arma state station, to succeed William ("Whitey") Hislop, who was transferred permanently to the central station at Pittsburg, succeeding William Morrison, who resigned Oct. 1. John L. Young, deputy state mine inspector, appointed Oct. 1, resigned effective Dec. 1 to take a position as inspector for the Associated Insurance Companies.

James Sherwood, state mine inspector, has ordered the discharge of two employees of the Wilbert-Schreeb Coal Co. who were caught tamping shots with coal drillings, which is against the law. An explosion in this mine caused a property loss of $1,000 and nearly cost the life of a shotfirer.

Prosperity of Kansas miners during the past few months is reflected in their vote to dispense with a 4-per cent special assessment levied early last summer for the benefit of striking and unemployed coal miners. The special levy was lifted Dec. 1. A proposal to vote a 2-per cent assessment for aid purposes was voted down by a big majority.

A referendum vote on whether district headquarters of the Kansas miners will be retained at Pittsburg or removed to Frontenac or Arma, in the same county, will be taken by the miners on Dec. 29, and returns will be in the hands of the secretary not later than Jan. 10. Headquarters offices are now maintained in rented quarters in a Pittsburg office building. Miners and business men of Arma have agreed to donate $10,000 toward erection of a building there to cost $28,000. Frontenac miners have agreed to give their local union building, known as Miners' Hall, to the district. A majority vote for either project will be necessary to carry.

Miners of Kansas will vote Dec. 22 in a run-off election to select one of two candidates for district auditor. Votes will be counted Dec. 29 and the newly elected auditor will take his position Jan. 1. At the primary election there was a field of thirteen candidates. Jack Toschi of Ringo polled high with 1,137 and Arthur Eagleton was second was 690. They will be on the ticket in the run-off election.



**Up First Creek Valley**

Looking up the valley of First Creek from Blue Diamond, Ky., one can see located on the hill at the right the mine of the Sapphire Coal Co. now under the management of the Blue Diamond organization.

## KENTUCKY

Flames which swept the Kentucky Coal Co. mine two miles west of Sturgis, Dec. 11, destroyed 30 wooden railroad cars of the gondola type, burned track and other inside equipment and finally forced sealing of the mine. Exact extent of the damage will not be known until the shaft can be unsealed. Several fire fighters were overcome while battling the flames more than 100 ft. below the surface, but no one was seriously hurt. A short-circuit in the automatic charging panel is believed to have started the blaze. The mine was the scene of a disaster last June, when 17 men were killed in a gas explosion.

The Cornett-Lewis Coal Co., of Louellen, Harlan County, has contracted with the Morrow Mfg. Co., of Wellston, Ohio, to construct a modern steel tipple with a capacity of 3,000 tons per day. The coal, which at this point is 85 ft. below the level of the railroad, will be dumped at the bottom and conveyed up a slope to the tipple by means of a rubber belt conveyor.

George O. Boomer, treasurer of the Pittsburgh Fuel Co., Louisville, is one of eighteen men named, from which nine directors will be elected by the Louisville Board of Trade in the annual election, to serve with nine holdover members.

The Consolidation Coal Co., at Jenkins, recently obtained J. H. Childress, deputy sheriff of Pike County, to be in charge of the private policing of the company at the Burdine plant.

A. T. Siler, wealthy coal operator and president of the Bank of Williamsburg, married Miss Minnie Murphy, of Williamsburg, a member of the State Republican Executive Committee, at Louisville, Dec. 12. A number of friends from Williamsburg, including D. B. Cornett and Joe B. Mahan, were present. Mr. Siler was State Railroad Commissioner from 1904 to 1912 and very active in state politics.

George T. Cross, City Buyer of Louisville has been reappointed to that office for a period of four years under the new mayor, A. A. Will. Mr. Cross was a manufacturer before becoming city buyer.

## MINNESOTA

The North Western Fuel Co.'s dock No. 1, at Superior, and the Inland Coal & Dock Co.'s dock at Duluth were credited with receiving the last cargoes of coal for the season, steamers locking at their plants on Dec. 16. With the completion of the addition now under construction at the inland dock it will have a length of 3,000 ft.

Coal receipts at the head of the lakes for the season just closed totaled 9,455,864 tons, as against 8,716,158 tons in the 1924 season. Stocks on hand Nov. 30 were 5,648,134 tons, of which only 171,120 tons was hard coal.

The former Superior dock at Duluth now operated by the Henry Ford interests received 499,999 tons of coal during the 1925 season of navigation, according to the report of James Patten, its superintendent. The coal was delivered by the two Ford steamers, Henry Ford II and Benson Ford, and it was supplied from the Ford Kentucky mines. Supplies of that coal are being carried on the dock and it will be distributed at Minneapolis and nearby territory during the winter. The East End Coal & Ice Co. is handling Ford coal on the Duluth market.

## MISSOURI

Plans are being made for coal development near Nevada, Mo. Two brothers are behind the proposal, one of them from Chicago, where he is a member of the faculty of Chicago University. About 1,000 acres of land has been leased between Greene Springs and Dederick and sufficient prospecting has been done to prove that it is underlaid with 31 in. of good coal with a good roof. The M. K. & T. Ry. has already agreed to put in a spur to the mine.

## NEW YORK

The Acme Gas Coal Co., of Buffalo, with mines at Greenburgh, Pa., of which J. J. Eagan, of Buffalo is vice-president, has changed its name to the Acme Coal Mines Co.

Of the 23 reducing furnaces in the six plants of the Buffalo district 13 are running. The Bethlehem Steel Co., which lately blew in a new one, is operating five of these.

## OHIO

The Hisylvania Coal Co., of Columbus, which for years has been operating Mine No. 23, at Glouster, stopped operations Dec. 11 and abandoned the property, as it has been worked out. The mine was one of the best known in the Hocking field and produced a large tonnage. The equipment, consisting of machines tipple and tracks, is being moved to the West Virginia property of the company, acquired a year ago at Swiss, in Nicholas County, on the K. & M. R.R.

The offices of the Lorain Coal & Dock Co. were moved, effective Dec. 14, from the Huntington Bank to the First National Bank Building, Columbus.

The Columbus Board of Purchase will receive bids Jan. 23 for 15,000 tons of nut, pea and slack for the municipal lighting plant; 8,500 tons for the Scioto River pumping station, and 3,000 tons for the garbage disposal plant. These purchases are designed to supply these departments until April 1, 1926.

A. & R. Brenholts, wholesaler, 165½ North High St., Columbus, has taken over the output of the May Coal Co., at Alphretta, Ky. The output, which is about 500 tons daily, being sold from the Columbus office.

On the evening of Dec. 16 the Cincinnati Coal Exchange held a dinner dance and Christmas party at the Hotel Alms with Judge Joe Tuohy, president of the Coal Service Co., in the role of Santa Claus. Later he broadcast over WKRC the simple story of coal for the benefit of the radio bugs. Julius Ratterman, Elmer Wierkake, John Glaser, Bob Dickson and Fred Legg were in charge of the affair. About 160 persons were present.

Fred Gorc, general manager in charge of sales of the Blue Diamond Coal Sales Co., of Cincinnati, is a patient in Dr. Mayo's hospital at Rochester, Minn. Lung trouble which forced him to take a rest for months was found to be caused by the lodgement of a small bone that a simple operation would remove. Another patient there is Burke Keeny, president of the Middle West Coal Co. and the Cincinnati Coal Exchange.

V. G. Miller, in charge of the Columbus branch office of the Dickinson Fuel Co., of Charleston, W. Va., reports that the seven mines of the company situated in the Cabin Creek and the Pond Creek fields are in operation. Much of the product is moving through the Columbus office.

Workers are cleaning up the mine of the Black Diamond Coal Co., located near Glouster, preparatory to resuming operations after an idleness of months. It is announced that about 200 men will be given employment.

Disregarding a custom which has been in vogue for many years, the Belmont County district of the United Mine Workers will not hold its annual convention at Bellaire in January. It is announced that there is no reason for the meeting as the Jacksonville scale does not expire until April 1, 1927.

According to James B. Dugan, secretary to the Ohio Utilities Commission, the coal production in Ohio for 1925 will fall considerably short of the output in the previous year. The total for the state up to Nov. 1 is roughly estimated at 19,180,850 tons, as compared with 21,178, 650 tons during the corresponding period in 1924. The southern Ohio field has yielded 4,220,000 tons as against 4,734,000 tons for the same period in 1924.

## OKLAHOMA

Through efforts of district officials of the miners in Kansas, Missouri, Oklahoma and Arkansas, comprising the Southwest district, International President John L. Lewis of the miners' union has authorized appointment of a commission representing the international organization to investigate charges of the miners that operators in non-combatant states are "aiding and assisting" Oklahoma operators in the conduct of a battle against the miners to reduce that state to the 1917 wage scale.

The Major Brothers, of McAlester, have leased a coal mine seven miles southwest of Haileyville and expect to begin operations at once.

Officials of district No. 21, United Mine Workers, deny that Dewar miners' local has disregarded union mandates by returning to work in the Cameo Coal Co.'s No. 6 mine. The records of the Kansas, Oklahoma & Gulf R.R., however, show that the mine has shipped 14 cars of coal since Dec. 7, when 35 union men were reported to have gone back to work under the 1917 scale rather than accept 70c. a week strike benefits while walking delegates received $14 a day. The mine had been closed several months.

## PENNSYLVANIA

The Pittsburgh Coal Co. on Dec. 12 distributed a payroll of $60,043.37 to miners employed in the operations in the Pittsburgh district. Midland mine led with $17,594.27; Banning No. 1 had $15,680.55; Banning No. 2, $15,571.38; Montour No. 10, at Library, $11,197.17. These are all on the 1917 scale and the number of men who participated were 231 at Midland, 145 at Montour, 247 at Banning No. 2 and 229 at Banning No. 1. The miners in the five operations of the company dug more coal during the week ended Dec. 12 than at any time since operations have been resumed. The total tonnage was 20,942. Banning No. 2 led with 7,192 tons, Midland produced 4,780 tons, Montour No. 10, 3,698 tons, Banning No. 1, 4,632 tons, and Mansfield, 640 tons.

The Davidson mine of the H. C. Frick Coke Co., which has been idle for more than a year, will resume about the first of the year. The Hostetter-Connellsville Coke Co., a subsidiary of the Frick company, also has started up more than 200 ovens at the Whitney plant. The coal from the Davidson mine will be shipped to byproduct plants and the string of ovens will remain cold. In one quarter it was declared that it was unlikely that these ovens would be operated again.

The Bethlehem Mines Corp., subsidiary of the Bethlehem Steel Corp., and which is the only coal company in the Pittsburgh district, working on the 1917 scale with the exception of the Pittsburgh Coal Co., plans to put a second mine in operation before the end of the year. This mine is the Acme property, near Bentleyville, not far from the other unit working, known as the Marianna mine. On Dec. 15 a mysterious fire destroyed an untenanted company house at the Acme mine, causing $2,500 damage. Union sympathizers are blamed.

Nearly 4,000,000 tons of coal was mined in the city of Scranton in the eight-month period from Jan. 1 to Sept. 1, according to the report of the City Mine Cave Engineers, Frank B. Davenport and Frank Gaffney, which was issued last week. The Glen Alden Coal Co. led in production with 933.58 foot acres, or a total—at 1,500 tons per foot acre—of 1,400,250 tons; the Scranton Coal Co. was second with 535 foot acres; the South Penn Collieries, third, with 337 foot acres, and the Pennsylvania Coal Co. next, with 296 foot acres. With the 2,464 foot acres mined

**Modern Tipple at Wolf Run, Ohio**

This up-to-date preparation and loading plant of the Warner Collieries Co.'s Wolf Run mine is located at Wolf Run, Jefferson County, Ohio. Modern equipment which includes shaker screens picking tables and shaker loading booms, prepares lump, egg and nut and also loads mine run and slack for shipment over the Alliance Division of the New York Central R.R. which serves the Wolf Run Mine.

this year, the coal land assessable in 1926 is 46,566.16 foot acres, which has a valuation on the $320 figure of $14,901,120. If the new $800 valuation should be upheld by the court the coal land subject to taxation would be assessed at $37,252,800.

The Snowdon Coke Co., of Brownsville, has placed an order with the Fairmont Mining Machinery Co. for a large steel tipple, a structural steel trestle as an approach to a steel bin to store slack coal, and shaker screens, loading booms and other equipment. The work will be completed during the latter part of March.

Congressman Charles Esterly, of Reading, has prepared a bill for presentation in the House asking for a federal appropriation to dredge the Schuylkill River, thereby making it possible to reclaim thousands of tons of anthracite from the bed of the stream. It is understood that already in the Reading section arrangements have been made to turn this culm from the river into briquets.

## UTAH

The Denver & Rio Grande Western R.R. has set aside $100,000 to be used for continuing work on the Salina Canyon road to the coal mines above the town of Salina. It is expecting the road will be in operation next year.

## VIRGINIA

The City of Norfolk is contemplating replacing much of its coal-burning equipment with oil burners because of difficulties with the grade of coal it has been buying. The City Manager has announced that he finds it extremely difficult to get the proper quality in coal, and already several pieces of coal-burning equipment have been slated for replacement with oil burners. Some of its steam apparatus will be removed and electrical equipment installed, the city to buy its power from private concerns.

## WEST VIRGINIA

Work of rock-dusting Mine No. 42 of the Bethlehem Mines Corp. at Dakota, Marion County, was started Dec. 15. The work of rock-dusting mine No. 41, at Barrackville, where an explosion occurred last spring, recently was completed. Three coats of rock-dust were applied to all parts of this mine, according to N. A. Emslie, the division superintendent.

Chester C. Shinn, who has been in the employ of the Consolidation Coal Co. for more than 25 years, was named manager of the Fairmont sales office, which was opened in the Watson Building in Fairmont Dec. 16. Mr. Shinn will have charge of coal shipments in northern West Virginia, eastern Ohio and western Maryland. The Fairmont office also will handle the local coal trade for Fairmont and vicinity from the New England mine of the company, at Watson.

A spark from a welding machine being used by miners at the tipple of the No. 114 mine of the Kanawha & Hocking Coal Coke Co., at Longacre, caused a $40,000 loss by fire on Dec. 14. There had been a breakdown in the dump and the men were welding an angle iron. The flames destroyed the head house, pit mouth and the conveyor system. In order to save the tipple it was necessary to dynamite the conveyor system about one-third of the distance from the head house. The fire did not interfere with production, as the coal was shipped out from the other side of the hill, from the opening known as the No. 111 Carbondale.

A hard surface road between Clarksburg and Bridgeport, in the coal fields of northern West Virginia, was opened to the public Dec. 20.

Seals at Federal mine No. 3 of the New England Fuel & Transportation Co., where a mine fire occurred Feb. 3, 1924, were removed Dec. 15. Approximately 13 acres of Pittsburgh coal land were sealed. It is reported that the company will start producing coal soon in that portion of the mine.

Mines in the 12½ counties of northern West Virginia paid the miners for the last half of November in the week ended Dec. 12, when it is estimated that from $1,150,000 to $1,170,000 was paid out. Reports state that 1,301,800 net tons of coal were mined during that period.

Four buildings of the Crab Orchard Improvement Co., operating six mines at Eccles, near Beckley, were destroyed by fire on the morning of Dec. 12, at an estimated loss of $100,000. Operation of the mines was not stopped by the fire, although destruction of buildings and machinery has interferred with repairs. The machine shop, electric shop and blacksmith shop with their contents and the hoisting apparatus at the No. 3 opening and the building housing it were destroyed. The belief is expressed that the wiring in the machine shop was responsible.

In selecting a state commission to make an exhaustive study of the tax system of West Virginia and to report its findings and recommendations to the next session of the Legislature, Governor Howard M. Gore named as a member of the body Col. James Elwood Jones, of Switchback, vice-president and general manager of the Pocahontas Fuel Co. and one of the best known coal men in the state. Another member, Republican National Committeeman V. L. Highland, although nominally engaged in the banking business, is extensively interested in coal-mining properties. E. H. Arnold, of Elkins, another member of the new body, is an attorney at Elkins, but also has been engaged as an operator as head of the Randolph Colliery Co.

The Marion Division of the Bethlehem Mines Corp. in December will load the largest monthly tonnage since it began to work on a non-union basis, according to N. A. Emslie, division superintendent, who says that about 80,000 tons will be mined. Output, he predicted, would reach 100,000 tons in January. The Preston division, which embraces mines along the M. & K. R.R., broke all records last month, and it is predicted that a higher mark will be set this month.

The Davis Colliery Co., of Elkins, of which John T. Davis is president and T. B. Gross is secretary, is building a new tipple at its mine at Gilmer, in the Gilmer county field, and is equipping the mine with a shaker screen outfit and loading boom and also is enlarging its boiler capacity. The company expects to have the new tipple in commission soon after the first of the year. Four sizes of coal will be prepared—lump, egg, nut and slack, in addition to mine-run. In order to load several sizes simultaneously, track changes are being made under the tipple.

## CANADA

Six Drumheller (Alta.) miners recently convicted of unlawful assembly during the strike of last summer and five others found guilty of besetting the A. B. C. mine, who were given varying terms of imprisonment have been granted new trials by the Alberta Appeal Court.

Coal loadings on Canadian railways for the week ending Dec. 5, according to the Dominion Bureau of Statistics, showed a decrease of 2,488 cars, loading in the Western division being lighter by 1,375 cars and in the Eastern division by 1,063 cars.

## Traffic

A new regulation of the Erie R.R. provides that the company will absorb the Pennsylvania R.R. switching charge of 38c. per gross ton on anthracite when delivery is made to consignees having private sidings on the Pennsylvania R.R. at Elmira, N. Y.; effective Jan. 7, 1926.

## Obituary

**H. C. Clevenger**, coal traffic manager at Pittsburgh, for the Pennsylvania R.R., died of heart disease, Dec. 17, in his office at Pittsburgh. He was born in Philadelphia, Oct. 17, 1873 ,and spent much of his railroad career of thirty-four years in that city. In 1911 he became coal freight agent of the Pennsylvania R.R., with headquarters at Philadelphia. On the return of the railroads to corporate management in March, 1920, Mr. Clevenger became coal freight agent at Pittsburgh. He was promoted to coal traffic manager a few weeks ago.

**Gust. Johnson**, president of the Western Fuel Co., Osage City, Kan., and the oldest original director of the Osage County Bank, died there Dec. 4. He is survived by his wife, two sons and three daughters.

**Hiram P. Crouse**, 63, for over five years Cincinnati correspondent for *Saward's Journal*, and well known to the trade and operators in the south eastern Kentucky and southern West Virginia fields, died Dec. 15 after an illness of five weeks. He was former publisher of the Findlay *Republican* and the Toledo *Times*, was chairman of the Ohio Republican central committee in 1896 during the McKinley campaign, assistant telegraph editor of the *Commercial Tribune*, Cincinnati, and later held a responsible position with the Union Central Life Insurance Co.

## Coming Meetings

**Chicago Wholesale Coal Shippers' Association.** Annual meeting, Great Northern Hotel, Chicago, Ill., Jan. 6, 1926. Secretary, G. H. Merryweather, Temple Bldg., Chicago, Ill.

**American Wood Preservers' Association.** Annual meeting, Jan. 26-28, 1926, at Cleveland, Ohio. Secretary, E. J. Stocking, Chicago, Ill.

**Coal Club of Philadelphia.** Annual meeting, Jan. 28, 1926, at the Bellevue-Stratford Hotel, Philadelphia, Pa. Secretary, C. K. Scull, Philadelphia, Pa.

**Northeast Kentucky Coal Association.** Annual meeting, Jan. 28, 1926, at Ventura Hotel, Ashland, Ky. Secretary, C. J. Neekamp, Ashland, Ky.

**American Institute of Electrical Engineers.** Annual convention, Feb. 8-12, 1926, at Engineering Societies Bldg., New York City. Secretary, F. L. Hutchinson, 29 West 39th St., New York City.

**American Institute of Mining and Metallurgical Engineers.** Annual meeting, Feb. 15-17, 1926, at Engineering Societies' Building, New York City. Secretary, Dr. H. Foster Bain, 29 West 39th St., New York.

**The Rocky Mountain Mining Institute.** Winter meeting, Feb. 23-25, 1926, at Albany Hotel, Denver, Colo. Secretary, Benedict Shubart, Boston Building, Denver, Colo.

## New Companies

**The C. W. Wells Coal Co.,** Whitesville, Ky., capital $25,000, has been chartered by C. W. Wells, W. Minter and John M. Wells.

**Sunbeam Coal Co., Ltd.,** of Calgary, Alta., Can., has been incorporated to develop and operate coal and other mines with a capital of $100,000 by John L. Milligan, Gladys L. Milligan, Wm. J. Cameron and others.

**The Madeleine Smokeless Coal Co.,** capital $100,000, has been organized to operate in the southern portion of Raleigh County. Incorporators of the new company are Ashton File, W. W. Goldsmith, L. L. Scherer, C. B. Helmintoler and Helen L. Coleburn, all of Beckley.

**Welsh Coal & Transportation, Ltd.,** of Montreal, Que., has been incorporated to produce, manufacture and deal in coal, fuel and byproducts, with a capital of $50,000. The incorporators are Joseph A. Marion, Rosario Richer Roger Pillard and others.

## Publications Received

The name of the **"Mining Catalog, Coal Edition"** has been changed to **"Keystone Catalog, Coal Edition,"** with its 1925 edition, which was issued recently.

**Silicosis Among Miners,** by R. R. Sayers, Bureau of Mines, Washington, D. C. Technical paper 372. Pp. 24, 6 x 9 in.; illustrated. Price, 15c.

**Kansas Coal.** Part I, **Occurrence and Production,** by C. M. Young, and Part II, **The Chemistry of Kansas Coal,** by H. C. Allen. Engineering Bulletin No. 13 and Chemical Research Division Bulletin No. 4. University Engineering Experiment Station, Lawrence, Kan. Pp. 202; 6 x 9 in.; illustrated.

**The Mineral Resources of Manitoba,** by R. C. Wallace. Industrial Development Board of Manitoba, Winnipeg, Man., Can. Pp. 48; 6 x 9 in.; illustrated.

**The Smith Seam of the Lancashire Coal Field.** Physical and Chemical Survey of the National Coal Resources No. 5 of the Fuel Research Board, Department of Scientific and Industrial Research, Westminster, London, England. Pp. 32; 6 x 9½ in.; illustrated. Price, 1s. 6d. net.

**Power-Plant Lubrication,** by W. F. Osborne. McGraw-Hill Book Co., 370 Seventh Ave., New York City. Pp. 275; 5½ x 8 in.; illustrated. Price, $3. A practical book for the power-plant engineer, explaining the physical and chemical properties of lubricants, their action under changing influences of heat, pressure, etc., and the methods of determining their relative value.

# New Equipment

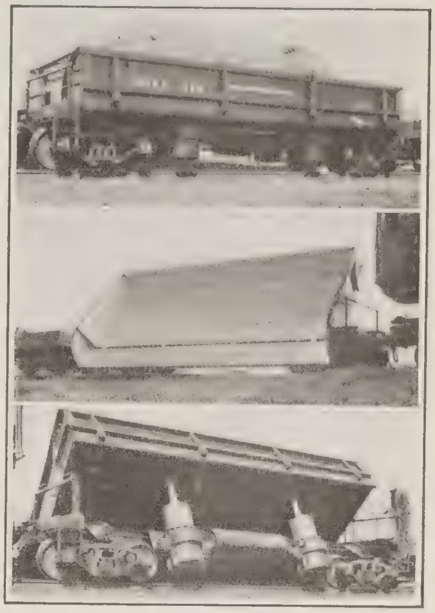
## Air Operated Dump Car Throws Load Away From Track

Of special interest to those engaged in stripping operations, the reclamation of culm banks or other similar operations requiring the handling of large volumes of material over comparatively short distances is the new air-dump car manufactured by the Differential Steel Car Co., of Findlay, Ohio. This is constructed in two standard sizes, namely, 24 and 30 cu.yd. It is of all-steel construction and the center of gravity is low, giving great stability in transit. The total height of this car is only 7 ft. 4 in. above the rail. Side boards are 2 ft. 6 in. high making the height from rail to car floor 4 ft. 10 in.

In this car the box rides on four points of support above the bolsters. When dumping, therefore, the car box does not tilt about a central point but about one or the other line of trunnions upon either side. The side boards are hinged at the bottom and fold down to the plane of the floor during the dumping operation. The action of the dumping cylinders is cushioned at its completion so that no stress is imposed upon either car, track or supporting trestle and the material discharged is thrown well in the clear. No locking mechanism to hold the car box in an upright position is necessary.

Advantages claimed for this car by the makers include the following: Its low height affords stability and easy loading. The design is simple, affording ruggedness of construction. Inasmuch as the body rests on four supports directly over the bolster side bearings, great stability is attained and all locking devices rendered unnecessary. Any size of material that can be handled by a steam shovel can be dumped to either side merely by the proper throw of a lever. A whole trip can be discharged simultaneously to either side or any portion of it to one side and the balance to the other side from any car of the trip. The load is dumped clear of the track; the sector plate on the end of the side board prevents spillage and fouling of the track ballast. The flat, smooth bottom of the car allows clean discharge of even quite sticky material such as clay. The movement of the body during discharge imparts a definite throw to the material without shock. Shoveling of the material discharged is eliminated and in most cases the use of a spreader is unnecessary.

Numerous transverse sills support the bottom of this car. As a result the box is admirably adapted to the handling of large pieces of material and the rough treatment to which dump cars are invariably subjected. Cars of this type have been used for some time on the Mesabi iron range where they have given excellent satisfaction. They will be particularly useful in the coal industry in strip pits where the spoil must be hauled to bank. They will prove useful also in those pits where the spoil is overcast, and the coal is loaded by shovel but passed through a preparator before being shipped to market.



**No Shovel or Spreading Necessary**

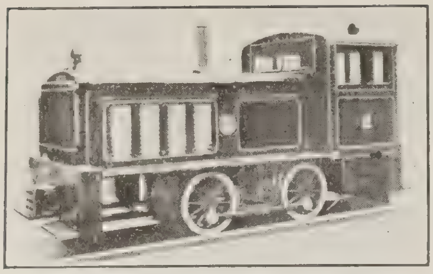
In the upper view the loaded car may be seen ready to discharge its load. In the second the load has been dumped, sliding clear of the ballast so that no shoveling or spreading is necessary. The lower illustration is a rear view of the car in its dumping position. Note the numerous cross sills supporting and strengthening the floor plate.

## New Gasoline Locomotive Has Spring Draft Rigging

In the accompanying illustration may be seen the new 12-ton gasoline locomotive recently placed on the market by the Vulcan Iron Works, of Wilkes-Barre, Pa. This machine is known as the Class EW-12 and is similar in general design and construction to the other worm drive machines developed by the same builder during recent years. All of these locomotives embody cast-steel frames, steel tired wheels, worm drive on the rear axle with side rod connection to the front drivers and a constant mesh transmission gear.

The 12-ton model here illustrated is equipped with a 100-hp. Waukesha motor fitted with Ricardo head. It has four speeds forward and an equal number in reverse. The actual speed along the track ranges from 2$\frac{3}{10}$ m.p.h. in low gear up to 12 m.p.h. in high. The drawbar pull in high gear is 2,275 lb. with a starting pull in low gear of 7,200 lb.

This locomotive may be built in any ordinary track gage up to standard and can be adapted to any haulage service. On account of its great power and



**Sturdily-Built Car Switching Unit**

This machine which weighs 12 tons is fitted with a 100-hp. motor. When equipped with spring draft rigging and M.C.B. couplers it is especially adapted to switching railroad cars. The spring draft rig protects the motor and other parts from the shocks of bumping and pulling and assures a long life.

sturdiness, however, this machine is particularly suitable to standard-gage switching work. For this gage the standard model is fitted with a spring draft rig and M.C.B. couplers. This rig is so designed as to take up in the bumper all the shocks of coupling, together with the stresses of pulling and pushing railroad or other heavy cars. The motor and other working parts are protected by the spring draft rig and a long life is assured.

## Electric Speedometer Can Be Installed Anywhere

Tachometers are well-known instruments about the mine. In a broad sense, they range all the way from the simple hoist indicator or the speedometer used on the company automobile or truck, to the device that indicates the r.p.m. of the big turbine in the power plant. Heretofore in practically every instance it has been necessary that the indicating dial or scale of the instrument be located comparatively close to the machine whose speed it measures. That is, within reach of a chain, a belt or a shaft. The Electric Tachometer Corp., of Philadelphia, Pa., recently has developed a device of this kind that is subject to no such limitations and may be placed anywhere within hundreds or even thousands of feet of the machine whose speed it indicates.

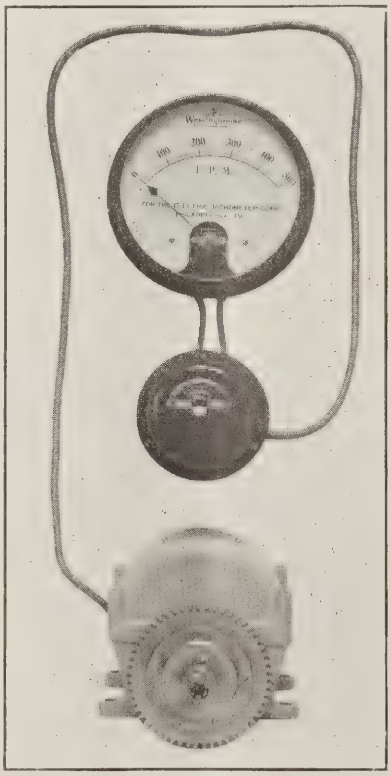
This tachometer consists of a magneto-generator driven positively from the shaft of the machine, the speed of which is to be measured. This generator has the property of producing a voltage exactly proportional to the speed of the driving shaft. It is, therefore, a simple matter to calibrate a voltmeter in either revolutions or feet per minute corresponding to the speed of the shaft or the travel of a hoisting cable. This voltmeter which has either a 7½- or 9-in. dial can be furnished with any scale desired. Thus far the maximum rope speed of hoist for which these tachometers have been calibrated, has been 1,500 ft. per minute. The usual practice is to furnish indicators with a central zero point, so that hoist speeds can be read in either direction.

One of the chief advantages of tachometers of this kind is that the indicating instrument can be removed from the source of energy by almost any distance whatsoever. Thus the indicator may be connected to the magneto by several hundred feet of cable. This makes it possible to place the indicating instrument where it is most desired and where its usefulness will be a maximum, as well as where it will be thoroughly protected from all outside interference.

With this indicator and magneto is provided a rheostat by means of which the reading of the instrument may be corrected in case it becomes inaccurate, or in case the drive ratios for the magneto are changed.

This tachometer lends itself to a variety of purposes, but in many cases such as where the instrument is attached to a motor shaft, turbine, stoker or other machine, it is advantageous that the scale shall read in revolutions per minute. On the other hand, belt speeds, conveyor travel and the like may well be indicated in feet per minute, while the speed of locomotives may be read directly in miles per hour. On the other hand, if attached to an electric generator the instrument may be calibrated to read in cycles per second.

Heretofore, where instruments of this general type, that is, those intended for indicating the speed of various machines, have been employed, it has been necessary to mount the instrument either on the machine itself or close at hand. With this new electric tachometer, it becomes perfectly possible to attach the magneto to the hoist drum shaft, place the rheostat upon the wall of the hoist house and the indicator in the superintendent's office several hundred or possibly thousands of feet away.



**Voltage Is Proportional to Speed**

By connecting the magneto positively to the machine the speed of which is to be indicated and making its voltage proportional to its speed the voltmeter which acts as the real indicator may be placed at any point desired. Hundreds or even thousands of feet may thus separate these two instruments.

## Industrial Notes

At a recent reorganization, the Joy Machine Co., was taken over by the **Joy Manufacturing Co.**, of Franklin, Pa., which will continue the manufacture and sale of mechanical coal loaders. All rights to coal-loading and allied machines heretofore invented by Joseph F. Joy, of Pittsburgh, Pa., and to all subsisting patents covering such machines in the United States, Belgium, France, Great Britain, Austria, Australia, Canada and Germany, together with all pending applications in said countries and the patents to be issued thereon, have become the sole property of the Joy Manufacturing Co.

**The Erie Electrical Equipment Co.**, Johnstown, Pa., announces the appointment of the **Universal Electric Sales Corporation** with offices at 30 Church Street, New York; 11 Beacon Street, Boston, and 332 Healy Building, Atlanta, Ga., as representative in the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, eastern Pennsylvania, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, Tennessee and Alabama.

**Charles M. Schloss** has been admitted to partnership in Lindrooth, Shubart & Co., manufacturers' representatives in Denver, Colo.

**The Babcock & Wilcox Co.** announces that it has purchased the **Fuller-Lehigh Co.** and its subsidiaries, manufacturers of pulverized-fuel and cement-mill equipment as well as the **Bailey Meter Co.**, manufacturers of meters and recorders, combustion-control equipment, pulverized-fuel feeders and water-cooled furnace walls. The Fuller-Lehigh Co. and the Bailey Meter Co. will be operated with the same organizations as heretofore, with the exception that Col. J. W. Fuller will become chairman of the board of the Fuller-Lehigh Co., E. G. Bailey will become president, and A. E. Douglass, of Fuller-Lehigh Co., will become vice-president in charge of sales. Mr. Bailey will continue to act as president of the Bailey Meter Co. and R. S. Coffin will continue as vice-president and general manager. By the acquisition of these companies the Babcock & Wilcox Co. will be able to offer boilers, superheaters, economizers, air heaters, chain-grate stokers, oil burners, pulverized fuel equipment, water-cooled furnace walls, meters, and combustion control equipment; all in any combination that may be required to supply complete steam generating units.

**The Oxweld Acetylene Co.**, 30 East 42nd St., New York City, announces the appointment of J. N. Walker as general sales manager. L. D. Burnett has been appointed Eastern department sales manager to succeed Mr. Walker, and Z. T. Davis, Jr., is now filling Mr. Burnett's former assignment as assistant sales manager, Eastern department.

## Trade Literature

Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., has issued a 41-page book on its **Engineering Achievements for the Year 1925.** The book is well illustrated and covers a diversity of subjects.

**Type D-54 Mechanical Drive Turbine** is the title of the four-page bulletin GEA-197, recently issued by the General Electric Co., Schenectady, N. Y. Describes the operation of this turbine, which is intended for the driving of centrifugal pumps, blowers and other classes of mechanical drive.

## Recent Patent

**Process of Treating Coal**; 1,555,590. John F. Lahart, Minneapolis, Minn. Sept. 29, 1925. Filed Sept. 11, 1924; serial No.

COAL AGE

McGRAW-HILL COMPANY, INC.
JAMES H. McGRAW, *President*
E. J. MEHREN, *Vice-President*

Devoted to the Operating, Technical and Business
Problems of the Coal-Mining Industry

R. DAWSON HALL
*Engineering Editor*

Volume 28 NEW YORK, DECEMBER 31, 1925 Number 27

## Peace or War?

AFTER NEARLY FIVE MONTHS of long-distance sharpshooting, anthracite operators and union spokesmen for the miners again face one another across the conference table. The issues to be decided are the same as when John L. Lewis, president of the United Mine Workers, abruptly terminated the joint conferences at Atlantic City on Aug. 4. Neither side has publicly receded from its interpretation of the factual questions involved in the union's demands. Both sides still challenge their opponents' interpretation of those facts.

In the weary weeks of alternating hope and despair which have intervened, however, there has been time for reflection, time to test the temper of the contestants. There has been time, too, to study the drift of public opinion and to weigh the strategy so far pursued in the cold light of actual results achieved. The idle miners already have lost in wages more than three times the annual increases written into their demands. The spirit of holiday adventure in which they laid down their tools has vanished. An empty Christmas, depleted savings and increasing actual want—that is the price they have paid for following leaders who elected to wage war where honorable peace was offered.

No more successful leader than John L. Lewis ever has guided the destinies of the United Mine Workers. He has wrung victory from situations in which less bold captains would have acknowledged defeat. But his strategy in the anthracite strike has everywhere met with disaster. His attempts to scare the public into a belief that the householder would freeze to death if the anthracite mines were closed left the public apathetic—or hostile. His attempts to stampede the federal government into intervention with the threat of a general bituminous strike resulted only in government action opening up eastern states to the non-union coals of West Virginia. The public, to be sure, has been inconvenienced, but it is his own followers in the anthracite region who have been the real victims of Mr. Lewis' campaign.

If he so wills, Mr. Lewis can perhaps continue the struggle much longer. It is in his power to inflict further heavy financial losses upon the operators. But in the exercise of that power, he must bleed white the workers who have placed loyalty to the union organization above cost and above sacrifice. Conceivably such a course might be justified if the alternative were abject surrender. No such alternative, however, confronts the union. The peace proposals of the operators are not, as some people would like to believe, one-sided. In offering arbitration in place of a war of exhaustion, operators risk as much as the miners. They risk a decision which might award the union the check-off against which the operators have railed as bitterly as have the union leaders against arbitration. They risk, too, the possibility of a decision which would increase wages.

Obviously, if miners and operators cannot agree among themselves as to the facts involved and their bearing upon the demands made, the sensible thing to do is to submit the case to a third party for decision. This is the rule of enlightened civilization. Of course, it means arbitration; and arbitration, once a constitutional aim of the United Mine Workers, is anathema to the union leaders. Mr. Lewis has had his fling at war. He will show real leadership if he now inclines to honorable peace.

## Our Rail Problem

SOME OF OUR many operators—the successful ones—are taking a serious view of the transportation problems of the mine, and subjecting mine-haulage questions to the light gained from a study of railroad operation. What railroad company delivers cars without thought of whether they can be used, or lets the engineer feel his way along the road without signals or direction, or permits the making up of trains without regard to definite standards determined for the haulage equipment supplied? And what coal mine with a large tonnage can afford to neglect the precautions that every railroad takes?

In a metal-mine, perhaps, where there is discipline and men invariably come to work unless sickness supervenes or prior notice has been given—where also, as the men are not dependent on each other but do their work without a division of labor into cutting, scraping, shooting and loading, and are never ruled out of their places because of the presence of methane, it might be possible to route mine cars to any given section of a mine without ascertaining how many men are out and how many cars are necessary; but in coal mining that is not so. Especially is this true in the evening, when the motormen run around unexpectantly looking for enough cars to justify their having started on another trip. Thus they waste time when they should be laid off, because all the men whose behests they serve have gone home long before.

With a dispatching system the dispatcher knows where cars are needed and when. The trips are switched where they are wanted, often before word arrives at the office that the men in 10th left are at a picnic, a christening or a sheriff's sale, or that the cutters in that heading had a burnout and failed to cut several places in the preceding night, or again that the fireboss marked for danger several of the rooms in that heading.

With such a system motormen do not stop and waste time trying to ascertain if the road is clear. The dispatcher has a definite knowledge of just where the trips are, and moves the cars in accord with that information. He is able to tell just where the coal is coming from and accordingly can detail to the foreman where he would do well to proceed to correct any lag in tonnage. As a rule all cars look alike to the weighman. Without a tedious analysis, an examination of the weigh sheet gives no information as to the section that is failing to measure up to the tonnage requirements. A dispatcher's record of cars supplies that defect and gives to the foreman a quantitative story of the status of each section.

With mines producing up to about 13,000 tons daily, with hauls up to five miles, and with small cars rarely exceeding five tons capacity per car, the mines have a big railroad problem. It will be solved according to approved transportation standards, and not in the haphazard manner that marked the era of the mule skinner.

## An Outside Summary and Viewpoint

IN A QUESTION so complex as that of the industrial factors underlying the coal industry, even those who are closest do not agree as to the ills and the remedies. Those who are entirely outside the industry, but to whom the coal question is one of interest, as touching their private affairs at many points, are less well informed and less able to judge; nevertheless, they do the best they can, and of such public opinion, the most potent, perhaps, of modern influence is formed. As an example of such trends of opinion is an article by Arthur E. Suffern in the December issue of *Atlantic Monthly*, an article which endeavors to be guarded and balanced, and to abstain so far as possible from judgment, after having stated the history of coal troubles and the opposing contentions. We quote from this article without comment or approval: The article states in a preliminary that "the failure of nineteen coal companies and a union representing over 160,000 anthracite miners to come to an agreement upon wages, hours, and working conditions faces millions of people with the prospect of a shortage of fuel, inadequate heating facilities, and high prices." And the writer adds, "In every controversy there are two sides to be heard. Both sides have a story to tell and a cause to defend. The people who want an uninterrupted supply of coal should not be an interested public. One-sided condemnations of either the miners or the operators will not control the conditions that cause strikes." After stating at length the case on both sides the writer observes:

"However, the placing of mere abstract rights in opposition will not solve the problem of equity in wages, profits, and prices to the consumer. Nor will it curb the abuse of power that may be practised by the miners, the operators, or the public. The more the strike is prolonged, the less likely is the prospect that an equitable adjustment will be made, because pressing conditions will probably bring a forced settlement." And in the summary of the case, the author first ventures a personal opinion:

"Whether a settlement is made in joint conference or by a commission, comprehensive data on costs, prices, and profits is a prime need for the coal industry. Otherwise there is no basis of arriving at equity between the miners, the operators, and the consumers. Such data need to be collected from year to year by the Government under conditions that will make the data dependable. They can then be used with authority by the miners and operators in joint conference in arriving at voluntary agreements or by commissions in arbitration proceedings. If the operators and miners desire to settle their affairs without the aid of the Government, they stand in the best position to do so when all the cards are on the table.

"To deal with the present crisis and to establish more constructive industrial relations for the future requires a new order of statesmanship. If the leaders on both sides have the statesmanship to introduce a co-operation between the management and the union, similar to that which is in operation on certain railroads with the railroad shop-crafts, the first requisite for that end will be reliable data from year to year on actual conditions in the coal industry."

## In Praise of Partisanship

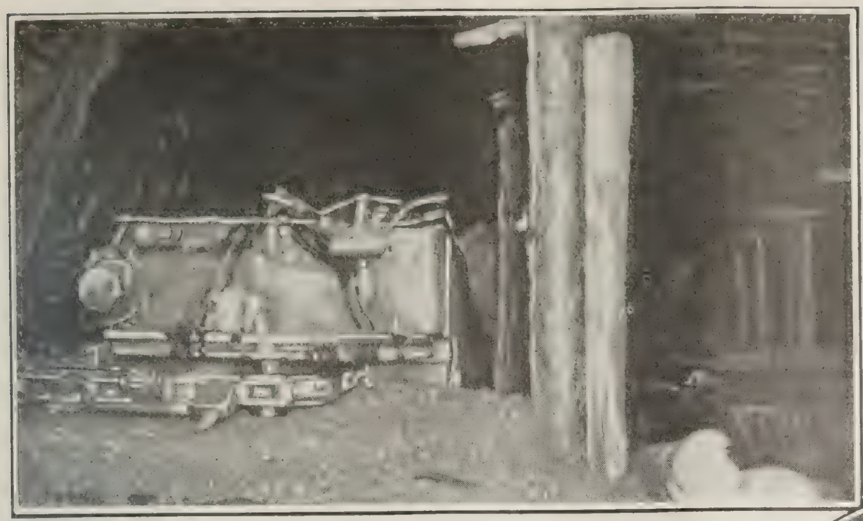
THERE ARE TIMES when nothing is so conducive to justice as a lusty partisanship. The process of balancing one contention against another can be drawn out to such a fine point that labored impartiality becomes more harmful than helpful. In a meticulous desire to omit the presentation of no fact which will support one side or the other in an economic controversy there is always the danger that the public may become so confused by the minutiæ that broad fundamentals are obscured. "A plague o' both your houses" then becomes the public's substitute for a discriminating judgment.

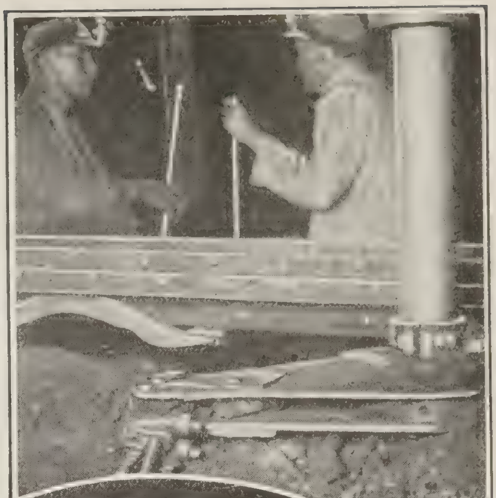
This is the danger that dogs the present anthracite situation. A President rightly condemns "the perennial conflict" in the coal industry, but neglects placing the blame for the existing suspension. A close student of labor relations in the coal fields makes a succinct summary of the hopes and aspirations of employers and employees in the hard coal region and then calls for more "facts" as a basis of settlement. A group of eminent economists and engineers warns the industry that there can be no abiding peace until a joint agency attacks the technical problems of management. All of these unprejudiced critics shrink from asking the public to take sides.

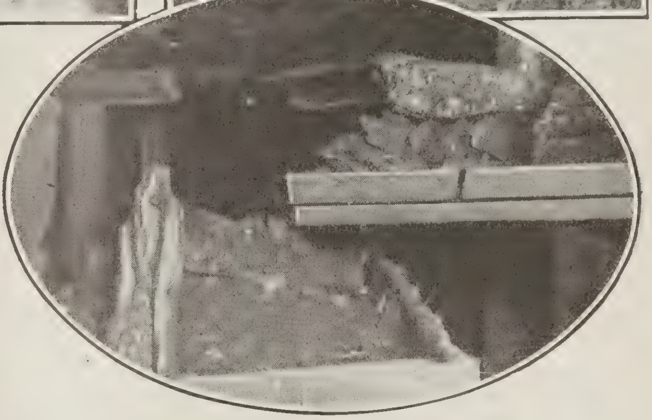
Were there a necessity for the public to pass judgment on the conflicting statistical claims of the contestants, this scrupulous regard for impartiality would be understandable. But no such task is imposed upon the public. The issue is much simpler. All the public is asked to do in its own behalf and for its own protection is to single out the contestant that blocks the approach to a peaceful solution. That question determined, it becomes an easy matter for the public to register its disapproval of such an attitude. This decision cannot be reached, however, through any indiscriminate damnation of the industry as a whole. Operators and miners must be considered separately, and the blame assessed where it belongs.

If that discrimination is exercised, there will be no difficulty in making the assessment. From the start of the negotiations the operators have offered unrestricted arbitration of all issues upon which they cannot agree with their employees. Their position is unchanged. From the start the union leaders of the miners have rejected that offer. Insisting upon the justice of their demands for higher wages and changes in working conditions, they have repeatedly refused to submit their cause to arbitration. The public, of course, can draw its own conclusions.

"A strike in modern industry," said Calvin Coolidge recently, "has many of the aspects of war in the modern world." Those who love industrial peace, whose comfort and whose pocket-books are hit by industrial war, however, do not help the cause of peace when they condemn both the aggressor and the aggrieved with equal vehemence or even when they withhold judgment. We need not alone lip service to the principle of arbitration, but a courageous decision in favor of industrial disputants who stand for that principle.







# Jigging Conveyors Used On Long Walls Make Output Sure

## Alabama Mine Works Five Faces for Two Years with Shaker Chutes—Gob Helps Control Roof Subsidence

**By J. H. Edwards**
Associate Editor, *Coal Age*
Huntington, W. Va.

ALL KINDS OF MINES and mining systems may be found in Alabama—strip pits, drifts, slopes, shafts; in thick beds and in thin beds, at all inclinations from horizontal to steeply pitching; room-and-pillar, long face and longwall, running the entire gamut of mining conditions. But if one were to describe to the average operating man the various interesting mines of this state and then ask him which of them he would rather see with his own eyes, the chances are strong that he would reply: "That Aldrich mine of the Montevallo Coal Mining Co. where they are working five 325-ft. longwalls by means of shaking conveyors."

The fact that so few American mines operate on a true longwall system and that few if any employ face conveyors equaling in length those used at Aldrich, makes this operation stand out as being unique among those of the country at large. And yet, neither the longwall system nor the use of face conveyors are new at Aldrich. The mine was switched from the room-and-pillar system to longwall in 1906 by P. B. Thomas, father of D. A. Thomas who is now president and manager of the company and who, so to speak, has ironed out the kinks and wrinkles and has put the mine on a paying basis. Practically 100 per cent recovery, 67 per cent being lump, and a cost substantially below that of the room-and-pillar method makes it obvious that the "big three" have been cornered at Aldrich.

This mine, about the most southern in Alabama, is located on the edge of the Cahaba field, 45 miles by rail from Birmingham. The coal is that of the Montevallo bed, which, generally speaking, lies on a pitch of 12 to 15 deg. A typical section is shown beside Fig. 2. The working height is roughly 50 in. in which is included from 14 to 18 in. of rash. The coal is a high-grade bituminous used chiefly for domestic purposes.

### WORKED THROUGH SLOPE FOR 21 YEARS

Opened in 1885, the mine was worked through a slope on the room-and-pillar system until 1906. Levels were turned off the slope every 200 to 300 ft. and rooms were driven up the pitch. After the slope had been advanced approximately 2,500 ft., and about the time that longwall operation was well started, it was found that the slope was running into a basin a few hundred feet wide. As Mr. Thomas expressed it, "had operations continued along the lines projected they would soon have met themselves coming back." Accordingly, a change was made and walls advanced to the rise. Since then they have been worked at various angles to the pitch.

As the scrap heap on the surface at this mine will testify, the present conveyor was not the first one tried on the longwall faces. It was preceded by a sectional chain machine of rather heavy and expensive design. The shaking chute now employed was evolved by a series of changes extending over several years made in

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The illustration at the left in the headpiece accompanying this article shows a longwall machine undercutting a face. The bar of this machine is only 4 ft. long, this length having been found to be most advantageous. One such undercutter is used on each face. In the upper illustration to the right may be seen the bellcrank and side of the conveyor as well as the jack holding the the bellcrank in position. The motor-operated shaking engine is stationed some distance to the side of the conveyor, which it drives through the medium of a cable that may be seen at the bottom of the picture. The oval shows the conveyor discharging to a mine car on the heading. This passage is kept well ahead of the advancing face and bottom is lifted on it so as to afford ample room for loading the cars to full capacity.

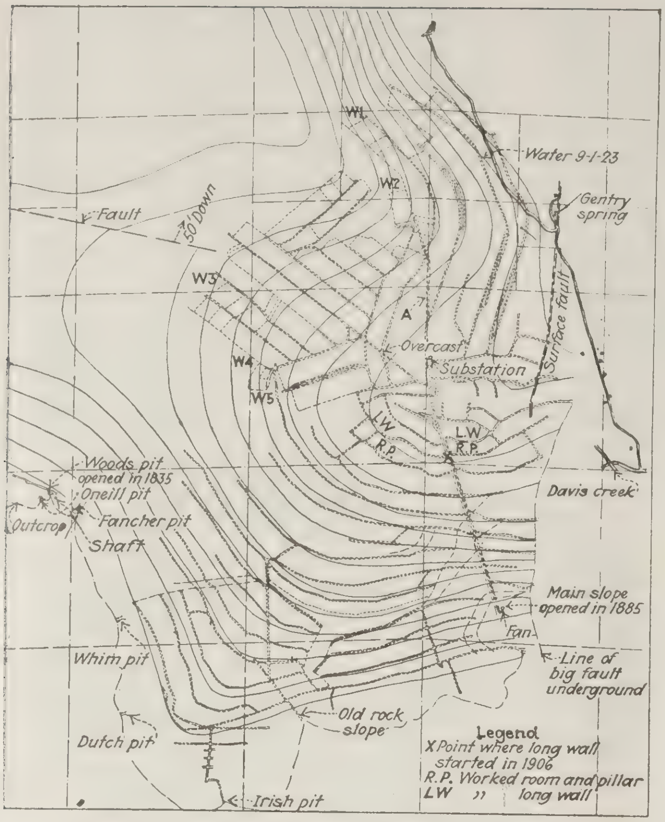

Fig. 1—Map of the Montevallo Coal Mine

This mine originally was laid out for room-and-pillar operation, but when it was found that the main slope was running into a basin of small extent the plan was changed and the longwall system adopted. Faces have since been worked at practically all angles to the pitch. The position of the present faces are indicated by $W_1$, $W_2$, etc.

the design of an original Mavor & Coulson outfit imported from Scotland.

Fig. 3 shows the four principle parts of the conveyor proper. In the foreground is a floor cradle and roller, back of which is a drive section of the trough or pan, and in the background is a common, or plain, section. This latter is one that has just been brought to the shop for repairs. A hole has been worn in the bottom and the sides are bent out of shape. The riveted splice in the center indicates that this section was, sometime before, built in the shop from two parts in fairly good condition cut from worn or damaged sections.

All sections of this conveyor are 9 ft. long. Originally ⅛-in. steel plate was used in their construction, but because these soon failed a change was made to $\frac{3}{16}$-in. plate. Two men can easily pick up and carry a section. The drive pan or segment is somewhat heavier than the others, due partly to its more sturdy construction and partly to the projection or fitting on its under side into the holes of which the connecting rod of a bell crank is fastened. The illustration at the upper right in the headpiece shows a drive section with the bell crank and its anchoring roof jack in place. In the left foreground is the wire rope which extends from the bell crank to the walking beam of the actuating motor-driven shaking engine.

Details of this engine are shown in Fig. 6 while Fig. 7 is an end-view photograph of it. The drive is by means of a 27-hp. direct-current motor. As the conveyor is moved forward after each cut the ⅞-in. drive rope is lengthened by readjusting in the connecting-rod clamp seen in the foreground. By this arrangement the engine is left in one place while the wall is advanced 50 to 100 ft., or more, as conditions may warrant.

The engine location with respect to the conveyor is indicated in Fig. 2. Here the conveyor is shown in a position about 5 ft. from the face, to which location it has been moved preparatory to loading out the cut. On the day before, when loading out the previous cut, it was in the position *A* indicated by the dotted lines.

## Roof Control Presents Problem

Roof conditions in the Aldrich mine, no doubt, are favorable to longwall operation but, nevertheless, it required years of costly experience to find an adequate method of control. Overlying the coal there is from 30 in. to 15 ft. of draw slate, above that 50 to 75 ft. of sandstone, and then perhaps 100 to 125 ft. of conglomerate. The total depth of cover ranges from 435 to 800 ft.

The action of this roof is remarkable. The walls, each 325 ft. in length, are worked advancing. Cutting is done in the bottom rash with a machine having a 4-ft. cutterbar. Machines with bars of greater length up to 6 ft. were tried but it was found that a 4-ft. cut is all that consistently can be cleaned up each shift. The machine used is of the longwall type and is mounted on a sled and adjusted to the proper height to cut the parting. Six to eight sets of bits are required in cutting each wall.

Bugdust, rash, and slate from the bed are shoveled over behind the conveyor into the gob. Most places contain just about enough of this refuse to fill the gob to the roof. Where the quantity is inadequate soft cribs (not filled with rock) are built on top of it and left in place to ease the roof down in its settling process. Breaks occur every 200 to 600 ft. unless a rift in the sandstone is encountered. Such a contingency causes a great deal of trouble and much extra expense for cribbing and timbering.

The loading entry or road at the lower end of each

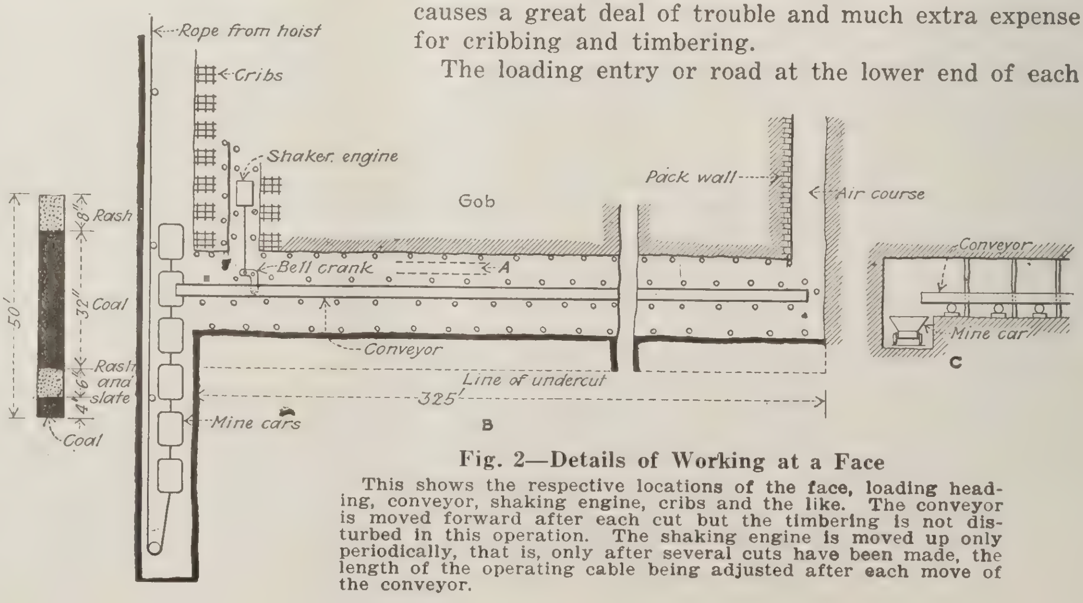

Fig. 2—Details of Working at a Face

This shows the respective locations of the face, loading heading, conveyor, shaking engine, cribs and the like. The conveyor is moved forward after each cut but the timbering is not disturbed in this operation. The shaking engine is moved up only periodically, that is, only after several cuts have been made, the length of the operating cable being adjusted after each move of the conveyor.

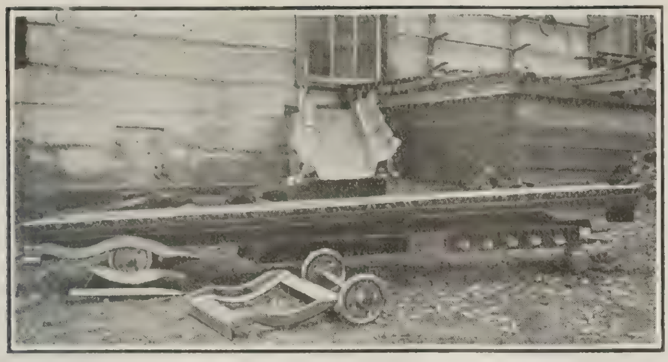

**Fig. 3—Four Main Parts of the Shaking Conveyor**

In the foreground may be seen the curved angle-iron track and a pair of the rollers that support the conveyor pans. Behind these is a drive section that receives reciprocating motion from the bellcrank and transmits it to the balance of the conveyor. In the background is an ordinary pan section. The particular section here shown has been sent to the shop for repair. As may be seen a hole has been worn completely through it at its upper end and it is badly bent and battered.

wall is kept about 100 ft. ahead of the face. Bottom to the extent of 4½ ft. is lifted in order to bring the tops of the cars well below the discharge end of the conveyor. Rock-packed cribs, made of 5- to 6-in. round timbers, as shown in Fig. 4, are built to protect the entry. The air course at the upper end of the wall is kept open by brushing top, the material thus brought down being used to build a pack wall that serves also as a brattice. Because the mine generates some gas, considerable care is taken to keep the ventilation at the faces up to standard. Open lights are used exclusively in this mine.

Fig. 9 shows how, at the point *A* on the map, the roof has subsided during nine years compressing the 50-in. gob to an 18-in. mass packed as hard as the coal itself. The haulageway on which this photograph was taken was driven three years ago through the gob of a longwall face that was worked six years earlier.

### Much Timber Used at the Face

Timbering at the face is done with 5- to 6-in. posts set on 4-ft. centers. None of this material is recovered. Where tender roof is encountered cross timbers or straps are employed. On the wall (marked $W_2$ on the map) where the photographs accompanying this article were made, each new row of timbers is doubled, ahead of the conveyor, after each successive forward move. As the coal is loaded out a row of emergency or temporary props is set against the rib. These timbers are removed one at a time ahead of the mining machine and permanently reset immediately behind it, as the cut progresses. Injuries to men and loss of equipment at the face practically have been eliminated by the liberal use of timber.

Cutting along each wall progresses in one direction one night and in the opposite direction the next, the machine being left where it finishes the cut. Turning the machine around before beginning a cut is accomplished in a short time considering the limited space between timbers. The cutterbar, of course, is swung to the opposite side as the machine is turned. Five machines are used, one at each wall. Another is kept at the underground motor pit as a spare.

The sequence of operations performed by the night crew is as follows: First the daily supply of timbers is unloaded from mine cars and distributed among the 325-ft. face. As the mining machine begins the cut timber men set permanent posts behind it against the face, and double the last row previously set. At the same time a conveyor-moving gang begins work. While one man goes along removing the two ⅞x7-in. bolts that hold each section to the next, two men begin moving the 32 pans or sections, thus disconnected, to their new position.

While this is being done other men are resetting the roof jack, bell crank, and the conveyor drive section. Next the pans are bolted together, lined up and finally the floor cradles and rollers set in correct position. The alignment does not have to be perfect. One of the 325-ft. conveyors has been operated when 3 ft. out of line. Any tendency of the conveyor to buck because of bad alignment or uneven loading, is corrected by setting "rubbing" timbers to confine its movement.

### How the Conveyor Works

Before describing the experiences at Aldrich in operating on various pitches, the mechanical action of the conveyor should be explained. The conveyor is nothing more than a plain sheet-metal trough or chute of a length equal to that of the wall being worked. The entire trough reciprocates with a differential motion, the stroke being 7, 8 or 9 in. long as desired, and the speed being about 65 cycles per minute.

The rope from the driving engine, through the medium of the bell crank, moves the trough quickly, on the backward stroke. Because of the shape of the cradles this movement elevates the trough and its load to a height of an inch or more. From this position it rolls back gently by gravity carrying the coal along with it. About the time that the trough reaches the lowest point of the cradle the rope jerks it backward again and the coal because of its inertia slides forward along the trough. The material conveyod thus shuffles along, a few inches at a time with a sort of wave motion.

With proper alignment and the cradles free of dirt, the conveyor will work on the level, if it is not too long, but with the conditions at Aldrich operation was not practical on ½ per cent grades, so the walls were swung to obtain an inclination of not less than 1.25 per cent in favor of the load. The conveyors have been operated satisfactorily on grades of from 1¼ to 15 deg., the average use being on about 8 deg.

This range of action affords an opportunity to swing the walls so as to advance them at an angle to the pitch. This is indicated on the map by the various directions in which the walls have been advanced, especially in

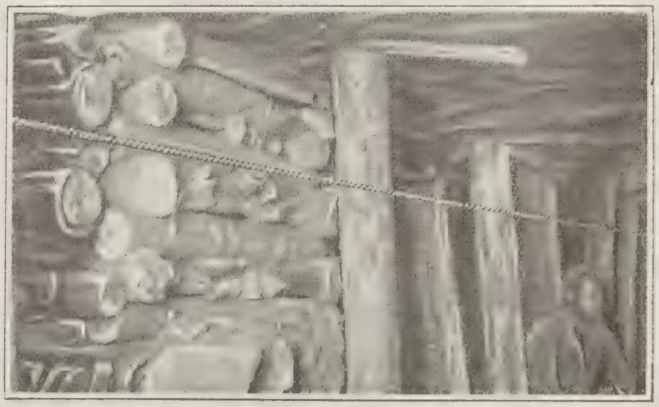

**Fig. 4—Rock-Packed Cribs on the Main Entry**

Naturally, the roof over the entry must be carefully supported. This is done by the use of both cribs and props. In this picture may be seen the cable by means of which the cars are handled on this passage.

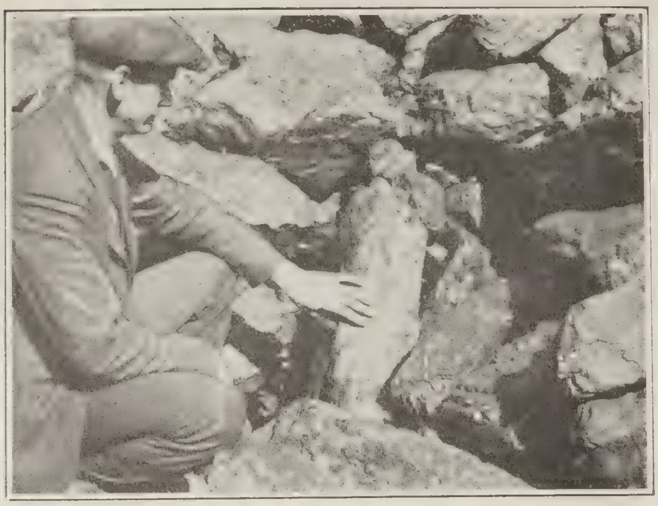

Fig. 5—Lump Coal in the Stockpile

B. C. Moore, master mechanic and outside superintendent, is here seen showing by comparison the size of the lumps in the stockpile. Sixty-five per cent of the coal produced in this mine is of lump size, used for domestic purposes. It can be sold practically always at a profit.

the vicinity of faults. The five 325-ft. walls which are now being worked are indicated by $W_1$, $W_2$, etc., on the map. The general conditions and methods vary but little from wall to wall. The inside photographs accompanying this article, except Fig. 9, were taken at $W_2$.

Experience has demonstrated that adjacent walls should be maintained either within 50 ft. of each other in order to keep the weight equalized, or should be kept over 250 ft. apart so that a fall on the leading wall will not affect the one following.

Haulage from the walls to the basin is handled by twelve single-rope hoists each driven by a 27-hp. direct-current motor. Electric locomotives assemble the trips and distribute empties in the basin at the foot of the main slope. The average weight of coal per car is 2,650 lb., and the production per wall overages about 120 tons per day.

The labor necessary for each wall is as follows: Each day-shift consists of ten loaders, one conveyor man, one timberman, one conveyor operator, two gobbers and one crib man, making a total of sixteen in all. The night shift consists of three timbermen, two conveyor movers, one machine runner, one scraper and one jack setter, making a total of eight men. Coal is shot down only as needed with 4-in. permissible powder, with no specified distance between holes. A wall does not ordinarily consume more than 25 sticks per day, including the extra number necessary for shooting tight corners.

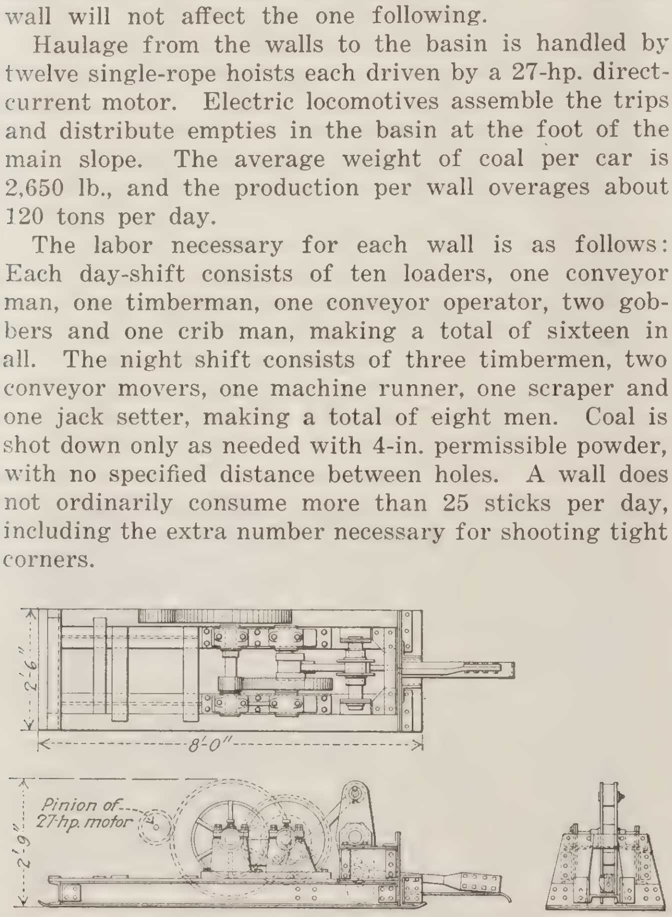

Fig. 6—Details of the Shaker Engine

Although the rotational speed of the crankshaft is uniform, the walking beam has an unequal oscillation. This, aided by the bellcrank and by gravity imparts a jigging or jerking motion to the conveyor chute.

During the last two years a remarkable record has been made at the Aldrich mine. Throughout this entire period, only five times has it proved impossible to make the regular daily advance on each of the five walls worked. These failures to load out, or to cut the face, were due either to falls on the entries or breaks on the walls. And this mine works 310 days per year! All inside labor is supplied and supervised by the state. Convicts operate locomotives, hoists, and cutting machines, as well as doing the timbering and loading at the face.

The fact that prison labor is used, of course simplifies the problem of cleaning up the walls each day. The mining company is obliged, however, to use the men every day of the year and consequently at times is compelled to stock coal at the mine. Transferring coal to the stockpile is done by placing a number of 4-ton, self-dumping boxes on railway cars, loading these at the tipple and then unloading them by means of a semi-portable, stiff-leg derrick. Coal is reloaded from the pile by filling boxes by hand and dumping in the railway cars by means of the same apparatus.

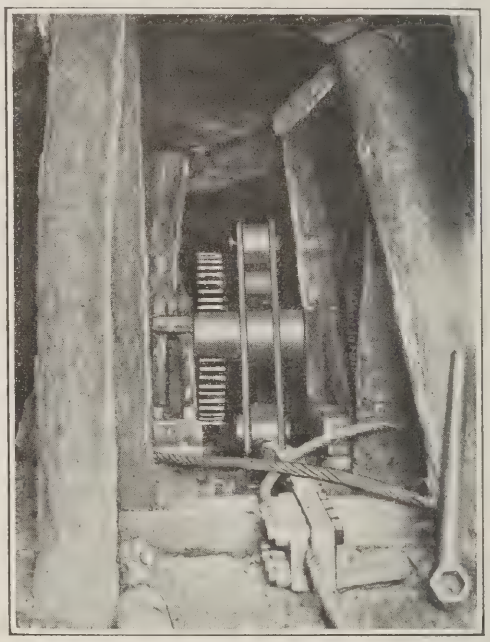

Fig. 7—End View of Shaker Engine

The adjusting clamp, by means of which the length of the cable leading to the bell crank is brought to proper length, may be seen on the end of the connecting rod in the foreground. Loosening a few bolts, lengthening or shortening the cable and tightening the bolts again effects all the adjustment that is necessary.

An interesting bit of history connected with the Aldrich mine was disclosed last year when Mr. Thomas cleaned up an old opening to the left of the present operation. This old mine is designated on the map as the Woods Pit. In it were found well-preserved relics of rather primitive mining methods. Among these were almost miniature wooden cars fitted with wooden wheels which ran on wooden rails provided with wooden frogs. Mr. Thomas states that he is fairly certain that the Woods Pit was opened in 1835. A geological report of about 1850 mentions this mine and explains that it was abandoned because of the dangerous roof. In contrast to this report, however, Mr. Thomas found the opening to have, what he would consider, a rather good roof.

The success of the last few years in operating the Aldrich mine on the longwall and face-conveyor system

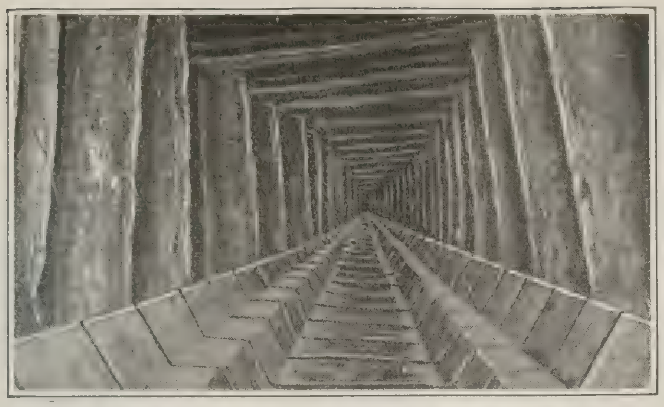

**Fig. 8—Looking Along the Conveyor Pan**

This shows the conveyor empty or ready to receive coal. Timbering along the face is heavy and in some places it is necessary to use straps or beams from prop to prop forming virtually three-piece sets over the conveyor. In case as sometimes happens, the conveyor shows a tendency to buckle sidewise, it becomes necessary to set "rubbing props" to hold it in line.

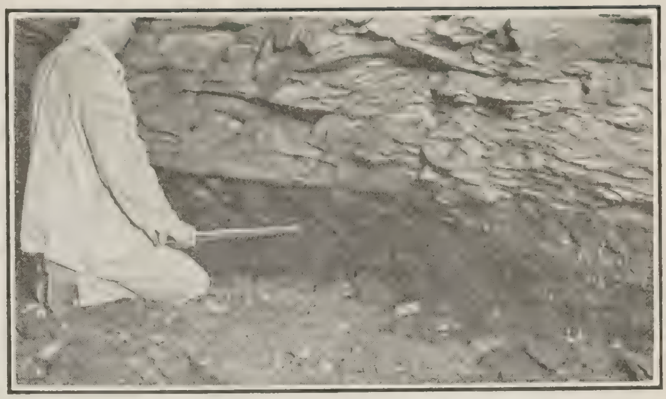

**Fig. 9—Roof Subsidence of Three Feet**

This shows J. L. Dollar, inside superintendent, demonstrating how the gob has packed to a mass as hard as the coal it displaced. At this point the roof has been subsiding for 9 yr. during which time it has settled approximately 3 ft. The haulageway where this photograph was taken was driven 3 yr. ago through a gob area that had been worked out for 6 yr.

has convinced the management that it is "on the right track." A sixth wall is now under development and considerable new equipment is being installed on the outside. Thus the steam hoist is being replaced by an 800-hp. electric machine and other equipment including the washery drives and pumps are being electrified.

NITROSITES AND SILVER DETONATORS—The nitrosites have been patented as initiators of explosion. Little is known of their structure and properties. As amylene nitrosite is stable and representative of the group, it has been chosen by the U. S. Bureau of Mines for a study of its structure and properties. The method of its preparation was studied, its structure determined, and a method developed that gave a yield of about 50 per cent theoretical.

In connection with the general study intended to develop new uses for silver, research work on detonating silver compounds has been undertaken. The silver salts that are considered to have explosive properties have been made and tested. Their sensitiveness to heat and impact and explosive strength were determined. Experimental work has been conducted with silver azide, silver fulminate, the silver salts of some of the nitroaromatic compounds and silver oxalate. Work has been completed on silver acetylide and the silver salt of trinitrohydroxyaminobenzene. Other silver compounds were tested but did not have any of the essential properties of an explosive.

OXYGEN OIL EXPLOSIONS—An investigation intended to determine the conditions under which compressed air or oxygen in contact with hydrocarbon and other oils may be subject to explosion hazards, and to devise means of safeguarding against such hazards, is being conducted at the Pittsburgh, Pa., experiment station of the U. S. Bureau of Mines. Since the publication of previous results, the explosibility temperatures for eleven additional substances have been determined in the 4-cc. test bomb using high-pressure oxygen. A number of experiments was also made using low-pressure oxygen, high-pressure air, and a mixture of oxygen and helium.

**In the Hazard Field**

This school building and mine of the Sapphire Coal Co. are located on First Creek in the Hazard Field of Kentucky. Formerly the First Creek Mining Co. under the management of Jewett, Bigelow & Brook, it is now operated by the Blue Diamond Coal Co. of which W. H. Sienknecht recently was made general manager.

# Labor History of Appalachian Coal Region Records Unionism's Utter Failure

By Sydney A. Hale
Special Contributor, *Coal Age*,
New York City

THERE is a striking parallelism in the history of union activities in the four states discussed in this article. In each case organized labor gained a foothold in its salad days and in some instances it was able to maintain that foothold for several years. But in each case the United Mine Workers was dislodged and, after a period of guerilla tactics, ceased to be a factor. The World War revived the hopes of the labor leaders and made the operators less determined in their resistance to the union program. The United Mine Workers made gains, tremendous gains in those days. But not a single victory was permanent. In these four states, as elsewhere, there has been a challenge to union leadership which has not been met.

THE POSITION the United Mine Workers holds today in the great Appalachian Region is the weakest since organized labor began to exercise a national influence in bituminous coal mining. In northern West Virginia, the last strongholds of the Lewis organization in that state are tottering: the southern fields have been swept completely beyond the control of Indianapolis. The dubious lease of power in the Upper Potomac-Georges Creek area has been broken. The skeleton organization maintained by the United Mine Workers in eastern Kentucky and Tennessee is now only a shadow which frightens nobody with pretensions of authority. Alabama, drawn back into the union ranks during the World War, again proclaims its ability to conduct its affairs without the advice or assistance of the international body of mine workers.

Central Pennsylvania, for years a fertile field for union propaganda, has, with the exception of a few operators, abandoned the labor organization headed by John L. Lewis. Strong union counties in that coal field have followed Somerset into the non-union fold. As was related in an earlier article in this series, the banner of revolt has been raised in southern Ohio and in western Pennsylvania. In the more northerly Butler-Mercer sector of the territory of District No. 5 of the United Mine Workers the union is no longer recognized as supreme. Only in the Broad Top and Blossburg districts has the United Mine Workers been able to retain a tight grip.

### UNION MAKES NO GAINS

To this catalog of losses there are no offsetting gains to be chalked up for the union. Westmoreland County, aggressively non-union for many years, still remains hostile to organized laobr. The Connellsville district, in which Mr. Lewis' organization gave an unexpected demonstration of power in the general strike of 1922, has been restive in recent months as a result of agitation for increased wages by the independent operators, and there have been some labor disturbances, but no general movement to demand union affiliation or recognition. The Windber sector, another quarter in which the union had a brief success three years ago, is quiet. The action of the largest operator in that section in reducing wages several months ago provoked no unpheavals, notwithstanding the fact that this particular producer had normally maintained its rates on levels as high as those prevailing in the union fields. Despite rumors some time ago that the union would make a renewed drive on southern West Virginia, the surface of labor relations there is unruffled.

The measure of disintegration which has taken place can best be understood when it is remembered that at one time or another the power of the United Mine Workers—or one of its predecessors in interest—has been felt in every state and in every district in the Appalachian Region. The process, as succeeding paragraphs will disclose, has not been uniform. Neither has it been constant. In some cases the tide of union power has ebbed and flowed. The union has staged some striking "come-backs" in fields where it was generally believed that its influence had been irretrievably shattered. In certain other sections, influence painfully and gradually built up over a long period of years has vanished almost over night. The most significant development since the close of the World War, however, has been the acceleration in the rate of disintegration.

### DISINTEGRATION SHARPLY ACCELERATED

The rapidity with which the tide has set in against unionism in the great coal belt extending from Pennsylvania through Ohio, Maryland, the Virginias, eastern Kentucky and Tennessee to Alabama threatens to blot out, in the popular mind, recollection of just how powerful the United Mine Workers has been in this region in days gone by.

Vigorous efforts to organize Alabama were made early in the history of the United Mine Workers, but the captive mines of the steel companies proved a stumbling block in the path of the union. Those mines in 1904 upset an arbitration award of the preceding year, claiming the scale fixed too high—and then offered concessions to avoid a strike. These concessions were rejected. A bitter struggle ensued, terminating in the disruption of the joint agreement which had been negotiated between the union and the commercial mines and the collapse of the union organization in that state in September, 1908. From that time until 1917 the right of the Alabama operators to run their mines on an open-shop basis was uncontested. Union membership dwin-

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Sixth of a series of articles describing the changes in the labor status of the different bituminous coal producing districts of the United States in recent years. Preceding articles appeared in *Coal Age*, Sept. 25, Oct. 1, 8, 29 and Nov. 19. Another article will appear in an early issue.

dled from a peak of 10,668 in December, 1902, to a nominal figure.

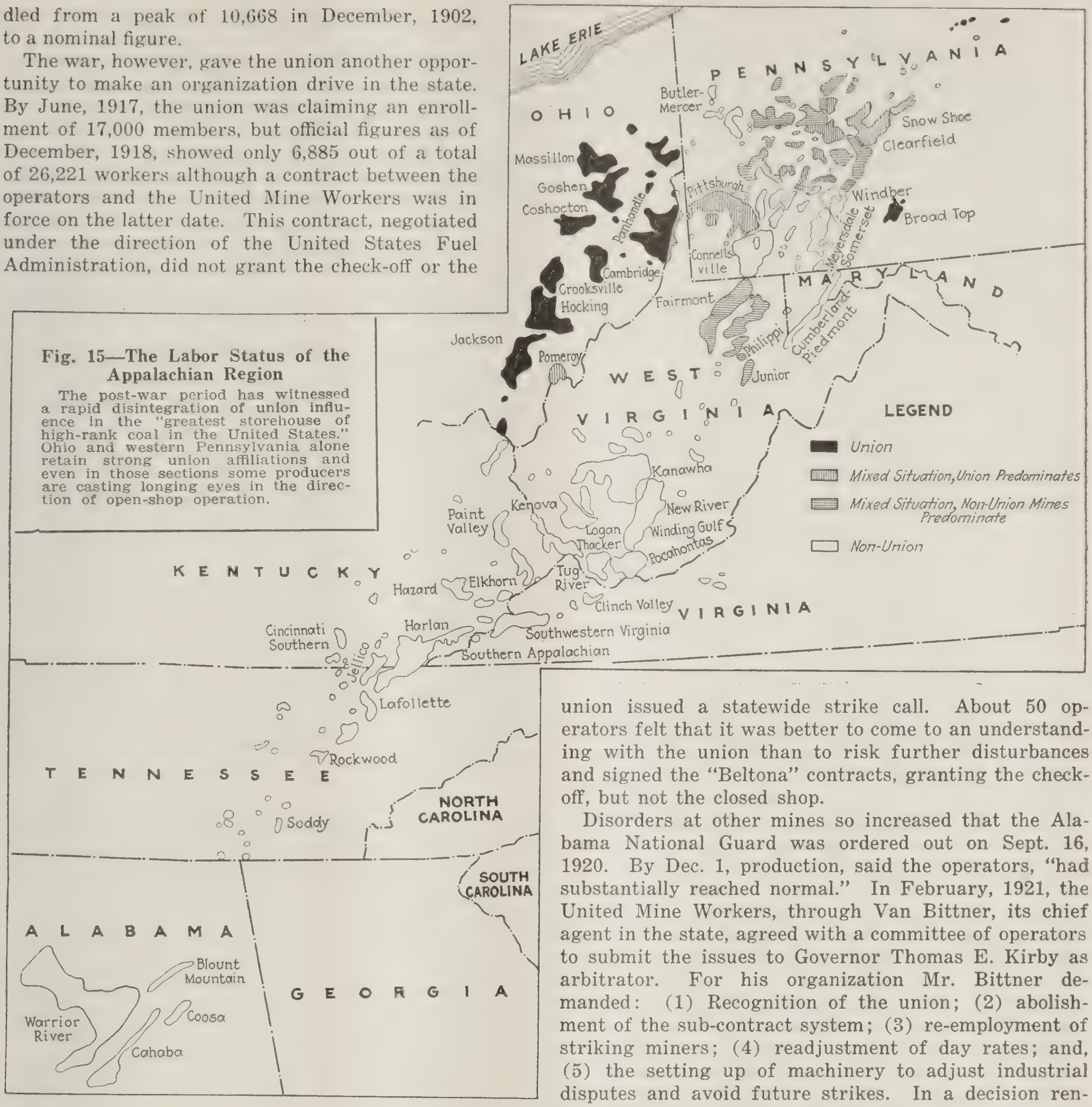

**Fig. 15—The Labor Status of the Appalachian Region**

The post-war period has witnessed a rapid disintegration of union influence in the "greatest storehouse of high-rank coal in the United States." Ohio and western Pennsylvania alone retain strong union affiliations and even in those sections some producers are casting longing eyes in the direction of open-shop operation.

The war, however, gave the union another opportunity to make an organization drive in the state. By June, 1917, the union was claiming an enrollment of 17,000 members, but official figures as of December, 1918, showed only 6,885 out of a total of 26,221 workers although a contract between the operators and the United Mine Workers was in force on the latter date. This contract, negotiated under the direction of the United States Fuel Administration, did not grant the check-off or the closed shop. It "was by its terms to continue until April 1, 1920." Nevertheless, the union called out its Alabama miners in the general strike of 1919.

With the expiration of the "Garfield agreement" in 1920, the United Mine Workers renewed its campaign for greater recognition. Several operators did acquiesce in demands for fuller recognition—but without the check-off—and agreed to the so-called "Blue Book" contracts. A number of other producers agreed to the scale of wages fixed by the award of the United States Bituminous Coal Commission and to an extension of the general provisions of the Garfield agreement. These contracts, signed with the individual employers, whose action had the approval of the union, were known as "White Book" or "Ruby" contracts.

Local strikes in May, 1920, induced about 30 producers who had been operating under Ruby contracts to sign the Blue Book agreements. Unsettled labor relations marked the midsummer and on Sept. 7 the union issued a statewide strike call. About 50 operators felt that it was better to come to an understanding with the union than to risk further disturbances and signed the "Beltona" contracts, granting the check-off, but not the closed shop.

Disorders at other mines so increased that the Alabama National Guard was ordered out on Sept. 16, 1920. By Dec. 1, production, said the operators, "had substantially reached normal." In February, 1921, the United Mine Workers, through Van Bittner, its chief agent in the state, agreed with a committee of operators to submit the issues to Governor Thomas E. Kirby as arbitrator. For his organization Mr. Bittner demanded: (1) Recognition of the union; (2) abolishment of the sub-contract system; (3) re-employment of striking miners; (4) readjustment of day rates; and, (5) the setting up of machinery to adjust industrial disputes and avoid future strikes. In a decision rendered March 19, 1921, in which he found that the miners had no grievances as to living conditions, working hours and wages, the Governor rejected all the Bittner demands. Since that time the union has been without standing in the state. In the general strike of 1922, the Alabama mines worked steadily.

### UNION VS. NON-UNION TONNAGE RATES

Base pick-mining rates in the Central Competitive Field increased 47c. per ton between April 1, 1912, and Jan. 1, 1923. During the same period base rates in Alabama increased 20 to 37c. per ton. The Alabama record in detail is shown in Table VIII.

The union has had a checkered career in eastern Kentucky and Tennessee. The first organization drive in the last named state was made about the same time that the union launched its membership campaign in Alabama. The first test of strength was made in 1904-5 when the furnace operators of the state, like the captive mines in Alabama, refused to be bound to the union. Notwithstanding this defection, a large majority of the operators in Tennessee and adjacent Kentucky fields continued to work under union agreements and granted the check-off. This relationship was not seriously disturbed until March 31, 1910, when the leading commercial producers declared that wildcat strikes and other conditions winked at or imposed by the United Mine Workers had grown so intolerable that they could no longer recognize the union. In this position they were supported by all but a few small companies.

### War Revives Union Drive

In 1917 union organizers again became active and succeeded in enrolling the majority of the workers as members of the United Mine Workers. A strike to compel recognition followed. The United States Fuel Administrator intervened, demanded an immediate resumption of operations and the consummation of an agreement. This agreement, known as the Washington agreement, denied the closed shop and set up an arbitration board with a permanent referee to pass on disputes arising under the contract. According to the operators, however, the same conditions which had led to the breach of 1910 developed, culminating in the general strike of 1919. In spite of the inclusion of District No. 19 in that strike order, when the Washington agreement expired in March, 1920, the operators accepted another one along the same general lines. This was known as the Knoxville agreement and expired March 31, 1922. At that time the Southern Appalachian Coal Operators' Association, which had represented the employing interests parties to these agreements, declined to have further dealings with union labor. The decision, however, was not unanimously approved. As a result of the split the Kentucky-Tennessee Operators' Association was formed to take in the deserting members and non-members of the older organization in the southeastern district of eastern Kentucky and in Tennessee.[1] The junior organization entered into an open-shop agreement with the miners. This contract denied the check-off and carried a provision for readjustments in wages to meet competitive conditions. This agreement, with a downward readjustment, was renewed for a four-year term beginning April 1, 1924. Although signed by district officials of the United Mine Workers, the character of the contract is such that the operating districts covered by it cannot be classed as union territory.

### Open-Shop Policy Abandoned

Northeastern Kentucky has been non-union since the field was developed. Two companies in that field—the Consolidation Coal Co. and the North East Coal Co.—ran open-shop for a number of years and made no effort to discourage union membership. These companies now refuse to employ members of the United Mine Workers, basing their refusal on the attempt to close their operations in the general strike of 1922 and the violence with which that attempt was made.

The fact that many of the companies operating in the Appalachian Region deal directly with their men makes the publication of complete rate sheets impossible.

**Table VIII—Alabama Basic Wage Rates (in Cents)**

| | Mining Rate* Per Ton | Hours Worked | Day Labor Rates per Hour — Inside Labor — Motormen | Trackmen | Outside Labor — Tipple Foremen | Common Labor |
|---|---|---|---|---|---|---|
| Dec. 1, 1914 | 52.0 | 10 | 20.0 | 27.0 | 18.0 | 14.4 |
| Sept. 1, 1915 | 57.7 | 10 | 22.2 | 30.0 | 20.0 | 16.0 |
| Feb. 1, 1916 | 60.0 | 10 | 25.0 | 32.5 | 22.0 | 16.5 |
| Nov. 1, 1916 | 66.0 | 10 | 27.5 | 35.5 | 24.0 | 18.0 |
| May 1, 1917 | 72.6 | 10 | 30.2 | 39.0 | 26.4 | 19.8 |
| July 1, 1917 | 79.2 | 10 | 33.8 | 42.6 | 28.8 | 21.6 |
| Oct. 1, 1917 | 88.5 | 10 | 35.7 | 46.1 | 31.2 | 23.4 |
| April 16, 1918 | 95.7 | 10 | 40.0 | 51.5 | 34.8 | 27.2 |
| Dec. 1, 1919 | 97.0 | 8 | 57.0 | 73.4 | 57.7 | 40.1 |
| April 1, 1920 | 109.0 | 8 | 60.0 | 77.2 | 60.1 | 41.2 |
| March 16, 1921 | 80.0 | 8 | 50.0 | 58.5 | 50.0 | 32.0 |
| July 20, 1921 | 70.5 | 9 | 44.0 | 47.0 | 44.0 | 28.0 |
| Dec. 16, 1921 | 61.5 | 9 | 38.5 | 43.0 | 38.5 | 20.0 |
| June 1, 1922 | 68.5 | 9 | 39.5 | 43.0 | 41.0 | 21.0 |
| Sept. 1, 1922 | 82.0 | 9 | 47.5 | 51.5 | 49.0 | 26.5 |
| March 16, 1923 | 94.0 | 9 | 53.5 | 57.0 | 55.0 | 30.0 |

* Pratt Seam.

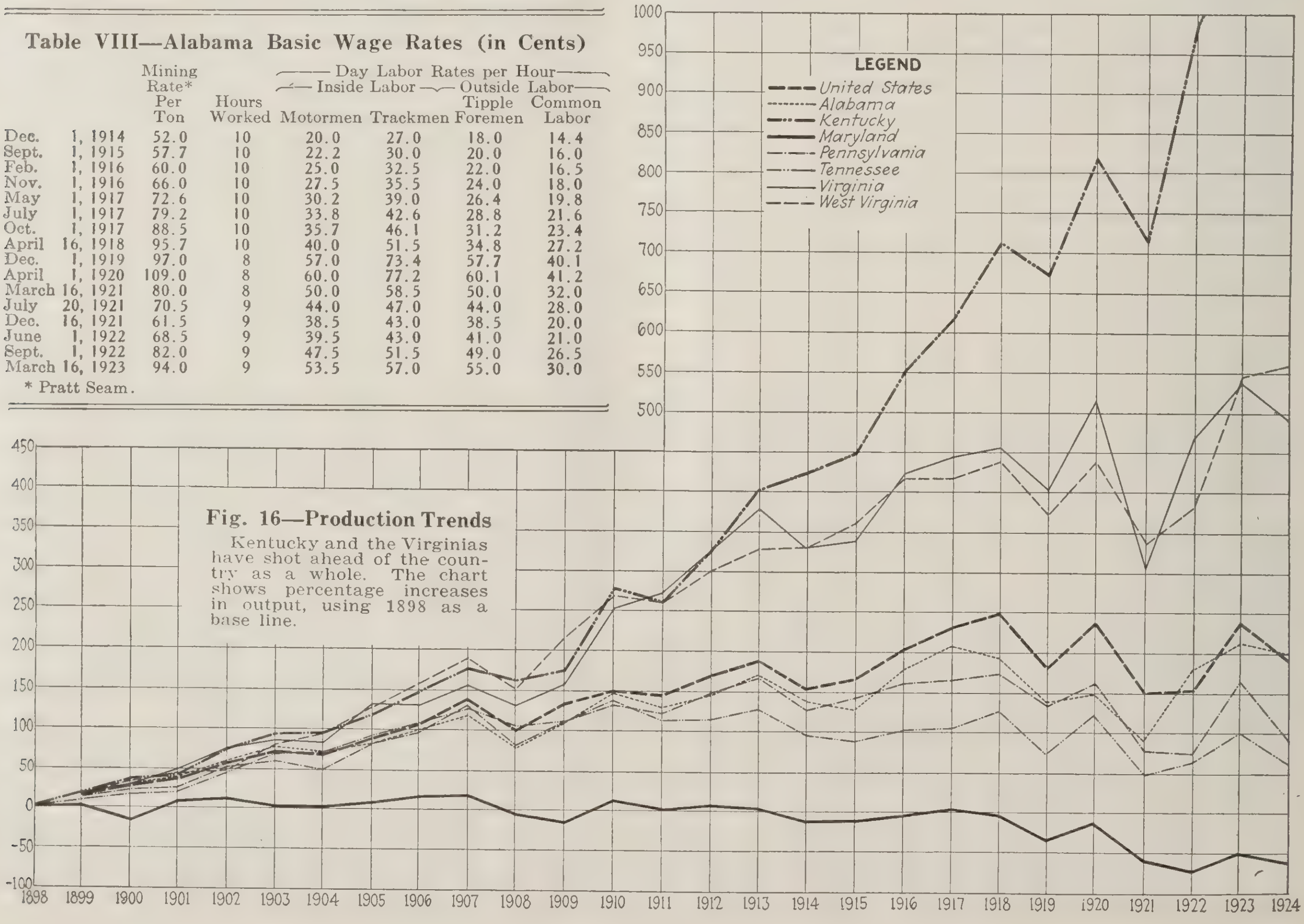

**Fig. 16—Production Trends**

Kentucky and the Virginias have shot ahead of the country as a whole. The chart shows percentage increases in output, using 1898 as a base line.

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[1] The Southern Appalachian Coal Operators' Association covers operations in Bell, Knox, McCreary, Whitley, Clay and Laurel counties, Kentucky, and in Tennessee. Approximately 80 mines with a maximum capacity of 7,000,000 tons per annum and an actual output of nearly 5,000,000 tons in 1924 are members. The Kentucky-Tennessee Operators' Association at the time of its organization reported a membership of approximately 3,000,000 tons per annum.

## Table IX—Changes in Pick-Mining Rates in Appalachian Region: 1912-1923

(Rates in Cents per Net Ton)

| | Jan. 1, 1912 | 1912 | | 1913 | | 1914 | | 1915 | | 1916 | | 1917 | | 1918 | | 1919 | | 1920 | | 1921 | | 1922 | | Jan. 1, 1923 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Jan.-June | July-Dec. | Jan.-June | July-Dec. | Jan.-June | July-Dec. | Jan.-June | July-Dec. | Jan.-June | July-Dec. | Jan.-June | July-Dec. | Jan.-June | July-Dec. | Jan.-June | July-Dec. | Jan.-June | July Dec. | Jan.-June | July-Dec. | Jan.-June | July-Dec. | |
| District: | | | | | | | | | | | | | | | | | | | | | | | | |
| Central Competitive Field Base Rate... | 58.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 61.0 | 64.0 | 64.0 | 74.0 | 84.0 | 84.0 | 84.0 | 84.0 | 95.0 | 108.0 | 108.0 | 108.0 | 108.0 | 108.0 | 108.0 | 108.0 |
| Alabama: | | | | | | | | | | | | | | | | | | | | | | | | |
| Pratt Seam... | 57.8 | 57.8 | 57.8 | 57.8 | 57.8 | 57.8 | 52.0 | 52.0 | 57.8 | 60.0 | 66.0 | 72.6 | 85.8 | 95.7 | 95.7 | 95.7 | 97.0 | 109.0 | 109.0 | 80.0 | 61.5 | 68.5 | 82.0 | 82.0 |
| Kentucky: | | | | | | | | | | | | | | | | | | | | | | | | |
| Eastern...... | 31.3 | 31.3 | 31.3 | 31.3 | 31.3 | 31.3 | 31.3 | 31.3 | 31.3 | 31.3 | 31.3 | 31.3 | 33.3 | 33.3 | 54.2 | 54.2 | 65.5 | 75.0 | 87.0 | 66.0 | 66.0 | 61.0 | 78.0 | 78.0 |
| Northeastern. | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 40.0 | 50.0 | 60.0 | 75.0 | 75.0 | 100.0 | 100.0 | 114.0 | 114.0 | 125.0 | 90.0 | 90.0 | 75.0 | 90.0 | 90.0 |
| S. Applachian | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 60.0 | 63.0 | 73.0 | 90.0 | 90.0 | 90.0 | 90.0 | 108.0 | 114.0 | 114.0 | 114.0 | 90.0 | 90.0 | 114.0 | 114.0 |
| Maryland: | | | | | | | | | | | | | | | | | | | | | | | | |
| Cumberland-Piedmont... | 56.3 | 58.5 | 58.8 | 58.5 | 58.5 | 58.5 | 58.5 | 58.5 | 58.5 | 60.7 | 67.0 | 83.5 | 93.7 | 93.7 | 93.7 | 93.7 | 106.6 | 117.4 | 117.4 | 117.4 | 117.4 | 117.4 | 117.4 | 117.4 |
| Tennessee: | 49.3 | 49.3 | 49.3 | 49.3 | 49.3 | 49.3 | 49.3 | 49.3 | 49.3 | 49.3 | 53.7 | 59.2 | 68.9 | 68.9 | 68.9 | 68.9 | 78.7 | 78.7 | 90.9 | 90.9 | 68.9 | 68.9 | 90.9 | 90.9 |
| Virginia: | 24.2 | 24.2 | 33.3 | 33.3 | 33.3 | 33.3 | 33.3 | 33.3 | 33.3 | 34.8 | 34.8 | 42.4 | 53.0 | 53.0 | 53.0 | 53.0 | 60.6 | 68.2 | 81.8 | 65.2 | 59.1 | 51.5 | 78.8 | 78.8 |
| West Virginia: | | | | | | | | | | | | | | | | | | | | | | | | |
| Pocahontas... | 43.0 | 43.0 | 43.0 | 34.4 | 34.4 | 34.4 | 34.4 | 34.4 | 34.4 | 39.5 | 43.4 | 47.7 | 61.0 | 61.0 | 61.0 | 61.0 | 64.5 | 75.2 | 90.3 | 72.2 | 72.2 | 57.6 | 90.3 | 90.3 |
| Thacker..... | 36.9 | 36.9 | 36.9 | 36.9 | 36.9 | 36.9 | 36.9 | 36.9 | 36.9 | 36.9 | 36.9 | 38.2 | 45.6 | 45.6 | 45.6 | 45.6 | 45.6 | 45.6 | 45.6 | 45.6 | 45.6 | 52.1 | 69.5 | 69.5 |

Table IX, however, gives a history of typical changes in pick-mining rates in the Appalachian Region and, for comparative purposes, also shows the base rate in the Central Competitive Field. The most pronounced changes, it will be noticed, began during the war period. In some cases non-union rates during the war and the post-strike boom months exceeded Central Competitive Field base rates. On the other hand, rates during periods of depression more nearly reflect actual conditions in the open-shop districts than is the case in the strong union fields. The non-union rates quoted in Table IX are, it should be emphasized, typical rather than complete. Many operations in the same fields paid lower than the rates named: in a few instances, higher rates were paid.

### UNION HAD EARLY START IN MARYLAND

The Maryland coal field first felt the influence of unionism in 1881 when the old Knights of Labor invaded the Georges Creek and Upper Potomac districts and gained enough recruits to cause a strike in 1882 which lasted nearly six months. The walk-out was a protest against a reduction of 15c. per ton in the mining rate and was unsuccessful. Two increases after the men had returned to work, however, restored the basis for which the men had struck. A cut of 10c. late in 1884 was followed by a strike in March, 1886: this lasted six weeks and ended in the defeat of the men. Twelve years passed before organized labor again became active: in 1898 and 1899, the United Mine Workers launched a membership campaign in Maryland and on April 1, 1900, ordered a general strike for an advance of 10c. per ton more than the operators already had announced. The strike was broken after four months and the union retired from the field.

Open-shop conditions without a suggestion of union recognition prevailed until the World War period. Organization work was renewed early in 1917 and a two-day strike staged in April, 1918. Out of this grew a joint agreement between the operators and district and local officials of the United Mine Workers acting "in behalf of the mine workers." With the general strike of November, 1919, this agreement was thrown into the discard. No action looking toward a resumption of contractural relations was taken until nearly a year later, when a committee of employees requested a joint conference. The principle of collective bargaining was again recognized in an agreement to expire March 31, 1922, but there was no direct recognition of the union as such.

## Table X—Pick-Mining Rates in Maryland

(In Cents per Gross Ton)

| | | | |
|---|---|---|---|
| Jan. 1, 1855 | 35.0 | 1882–83* | 50.0 |
| June 1, 1855 | 40.0 | Nov. 15, 1884 | 40.0 |
| Jan. 1, 1862 | 30.0 | March 1, 1887 | 50.0 |
| Sept. 1, 1862 | 45.0 | April 1, 1894 | 40.0 |
| June 15, 1863 | 50.0 | April 1, 1896 | 45.0 |
| April 1, 1864 | 60.0 | April 1, 1900 | 55.0 |
| Jan. 1, 1864 | 70.0 | April 1, 1903 | 65.0 |
| Sept. 1, 1864 | 100.0 | April 1, 1904 | 60.0 |
| June 1, 1865 | 75.0 | April 1, 1910 | 63.0 |
| May 1, 1866 | 65.0 | April 1, 1912 | 65.5 |
| June 1, 1877 | 50.0 | Jan. 16, 1916 | 68.0 |
| Aug. 1, 1877 | 55.0 | Oct. 16, 1916 | 75.0 |
| March 1, 1878 | 40.0 | March 1, 1917 | 85.0 |
| Oct. 15, 1879 | 50.0 | May 1, 1917 | 93.5 |
| Feb. 1, 1880 | 65.0 | Nov. 1, 1917 | 104.7 |
| March 15, 1882 | 50.0 | Nov. 16, 1919 | 119.4 |
| Sept. 7, 1882 | 40.0 | April 1, 1920 | 131.5 |

* Exact dates not available.

At the insistence of union representatives, however, a provision calling for a joint meeting in January, 1922, to continue the contract was incorporated in the agreement. Meetings were accordingly held in January and adjourned, at the miners' request, until after the convention of the international union at Indianapolis. Late in March, 1922, the operators demanded another conference or an agreement to continue work under the expiring contract. Despite this demand, a strike was called on April 1 and the representatives of the miners stated that "they would have to defer the conference until matters at issue in the Central Competitive Field were settled." Some months later (August 18, 1922) the operators notified the employees' representatives that they (the operators) deemed the action of the employees' representatives a violation of the basic agreement of Dec. 11, 1920 and "that they considered the agreement terminated."

### MARYLAND SHAKES OFF UNION

The attempt of the majority of the Maryland mines to operate open-shop after April 1, 1922, was met with a counter-campaign of intimidation and violence which ran throughout the greater part of 1923. This warfare was waged by union sympathizers notwithstanding the willingness of the producers to pay wages in line with the levels fixed in the 1920 agreement. The international organization, which during this long conflict had been able to induce only a few small mines to sign up, finally acknowledged defeat in an order calling off the strike on Nov. 23, 1923. Nearly $750,000 had been poured into the state by Indianapolis in the futile effort to force recognition.

At the time the United Mine Workers was beaten in 1900, the basic pick-mining rate in Maryland was 55c. per gross ton. During the period (1900-1919) in which the state was free from union dominition, the rate advanced to $1.194 with proportionate increases in day rates. The history of pick-mining rates in the state since Jan. 1, 1855, is shown in Table X.

# Center Shearing Increases Percentage of Lump

By N. D. Levin*
Columbus, Ohio

What would an appreciable increase in the amount of lump obtained in mining mean to the coal producer? To some the percentage of lump makes no difference; to others a goodly yield of large sizes is of the utmost importance, spelling all the difference between a profit and a loss. Ways and means for increasing the proportion of lump coal are most interesting to those to whom large sizes are important, but the same methods help those operators who have other adverse conditions such as weak roof with which to contend. Inasmuch as less explosives are employed, the roof is subjected to less violent jarring, and a smaller quantity of timbering is required.

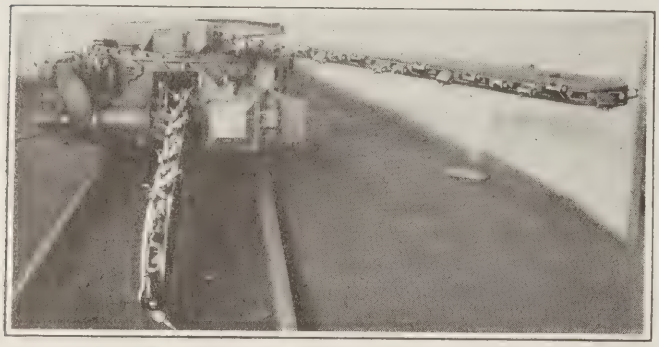

**Fig. 1—Combined Shearing and Center Cutter**

This machine both center cuts the face and shears it at the same time. The shearing cutter gets out of the way of the swinging bar by the time it reaches the center of the room. The shearing bar can also be attached to a machine arranged for undercutting the face.

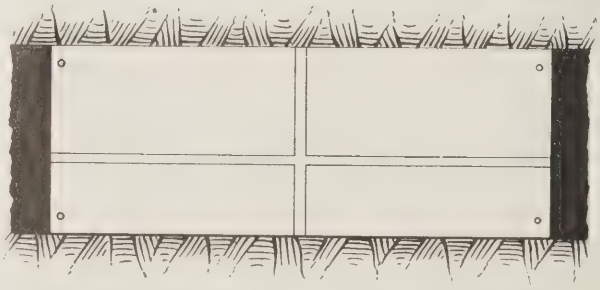

**Fig. 2—A Face Center Cut and Center Sheared**

This drawing also shows the locations of the four shotholes necessary to bring down the coal. Machines already are available for undercutting and shearing the face as well as for topcutting and shearing it. In any case a loose end of coal is made available.

As every mining man knows, a shear cut in a coal face makes a "loose end," that is, it exposes an additional face of coal to the air and renders it much easier to shoot. Such a shearing cut may be made either simultaneously with the undercut or center cut, or it may be put in either before or after the horizontal cut has been made.

In the accompanying illustrations, Fig. 1 shows a combination machine adapted to making both of these cuts simultaneously. In use, both cutterbars are sumped at the same time. When the machine has been brought up to the face the vertical bar starts its downward sweep at the same time that the horizontal bar starts its swing. The shearing bar is out of the way by the time the swinging bar reaches center. Fig. 2 shows the face of a room cut in this manner. A somewhat similar treatment of the face, preferred in many localities, is shown in Fig. 4. Here the horizontal cut is made at the bottom of the coal instead of in its center.

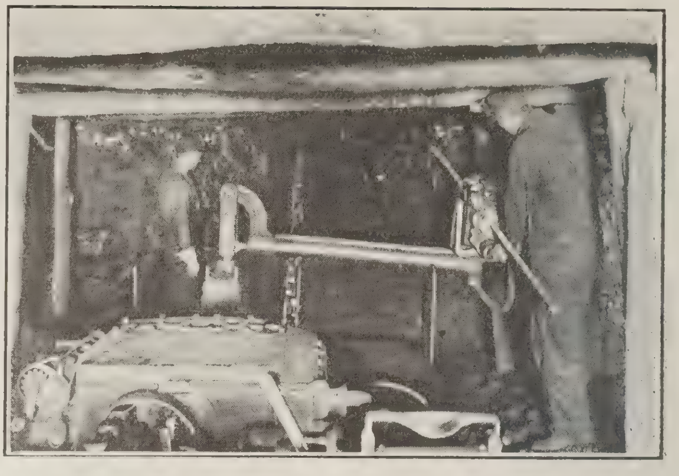

**Fig. 3—Power Drilling the Shotholes**

A counterpoised power drill may be mounted readily on the cutting machine in such manner that the machine runner can drill one shothole and the helper the other during the time that the two cuts are being made in the face.

Naturally, undercutting and shearing may be performed separately, a machine being used for each of these operations. An electric drill may be mounted readily on a shearing machine so that the shot holes may be power drilled while the shearing cut is being put in. Only two holes are required in a center-sheared face and the quantity of explosive employed is appreciably reduced because of the loose ends resulting from the shearing cut. Less powder means less jarring of the roof which in turn means that fewer or smaller timbers will be needed for its support.

Snubbing the face is also an efficient means of increasing the percentage of lump coal. Various machines and methods are available for this purpose. It is questionable, however, if this will yield results comparable with center shearing. Machine loading puts bigger lumps onto the cars than hand loading because pieces

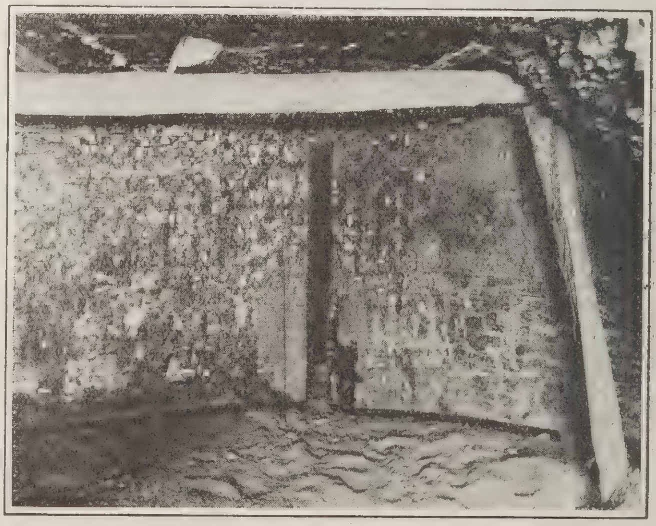

**Fig. 4—A Face Undercut and Sheared**

The two shotholes may be seen upon either side of the shear cut approximately above the sides or extremities of the undercut. This face is now ready for loading and shooting. The shear cut takes the place of the center drill hole and because of the loose ends only light charges of explosives are needed in the side holes. Thus the roof is subjected to light jarring only.

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*Chief engineer, mining department, Jeffrey Mfg. Co.

can be gathered onto the machine conveyor so big that they could not be lifted aboard a car by hand.

There is small question but what center shearing of the coal face in the future will receive far greater attention on the part of coal operators than it has in the past. This will be particularly true in those localities where conditions are highly competitive and a domestic grade of bituminous coal is produced. Some of the largest operators in southern Illinois have for months been experimenting with shearing machines with highly promising results. Its other advantages, however, in addition to the greater production of lump coal made possible, (such as decreased use of explosive and timber, and less jarring of the roof) will render it highly attractive to operators in other coal regions.

## Union Pacific Grinds Its Own Shale Dust

To provide a suitable rock dust for use in its mines the Union Pacific Coal Co. has erected at Mine No. 7, Rock Springs, Wyo., a shale dust plant, the site chosen being a short distance from the power plant. As the mine does not afford good material and as the crop reveals little but sandstone, it has been necessary to bring the material for pulverizing a long distance, in fact eight miles. A white shale is found in White Mountain (which, indeed, takes its name from the prevalence of the rock) and it is of excellent quality as Table I, provided by the U. S. Bureau of Mines, will show.

The plant, which was supplied by the Williams Patent Crusher & Pulverizer Co., has a capacity of over seven tons per 8-hr. day. The dust is sacked at the mill and distributed to the various mines. At present the rock is hauled by motor truck at a cost of $2.60 per ton. The hope is that the whole labor and material cost of obtaining and manufacturing the dust can be brought to $4 per ton as soon as the rock is transported by railroad from the Green River region where an identical rock is to be found. The Union Pacific Coal Co. is furnishing the dust to commercial mines in the vicinity which have not yet made provision for meeting the safety needs of their mine by plants of this kind. The shale is put in sacks holding 70 lb. The cost of operation of the plant is shown in Table II. The pulverizing and sacking are done alternately and two men are employed in both operations.

**Table I—White Mountain Shale of Union Pacific Coal Co.**

| | As Received | Moisture Fre |
|---|---|---|
| Moisture at 105 deg. C. | 2.0 | .... |
| Ash | 82.8 | 84.5 |
| Carbon dioxide | 11.0 | 11.2 |
| Combined water (above 105 deg. C) | 3.5 | 3.6 |
| Total incombustible | 99.3 | 99.3 |
| Combustible (by difference) | 0.7 | 0.7 |
| Free silica or quartz $SiO_2$ estimated | | 8 per cent |
| *Size test* | | Cumulative per cent |
| Through 20-mesh | | 100.0 |
| Through 200-mesh | | 88.2 |

MICROSCOPIC EXAMINATION

This dust is of a yellowish cast, yet light in shade, microscopically there appears to be but little free silica or quartz ($SiO_2$), probably less than 5 per cent. There is from 10 to 15 per cent of calcite ($CaCo_3$) in the sample. The rest is largely kaolin or other clay minerals with a few micas, etc.

**Dust Mill Protects Wyoming Mines**

The Union Pacific Coal Co. at Rock Springs, Wyo., pulverizes its own rock dust from shale obtained from a deposit in White Mountain. It has a low free silica content and is ground so that nearly 90 per cent goes through a 200-mesh screen. The dust is light enough to aid considerably in illuminating the headings.

**Table II—Operating Costs of Rock Springs Shale-Dust Plant, August, 1925**

| | | |
|---|---|---|
| *Crushed* | | |
| 1,856 bags | | 111,360 lb. |
| Hauled from pit | | 57 tons |
| Total operating time | | 61½ hr. |
| Sacking | | 34 hr. |
| Delays during operating time | | 7½ hr. |
| *Costs* | | |
| Raw shale 57 tons @ $2.60 | ...... | $148.20 |
| Machine shopwork on hammers, etc | $11.31 | |
| Repairing belts | 5.29 | |
| Repairing bearings | 2.27 | |
| | | 18.87 |
| Operating | | |
| 61½ hr. @ 90¾c | 55.81 | |
| 61½ hr. @ 86¾c | 53.35 | |
| | | 109.16 |
| Sacking | | |
| 34 hr. @ 90¾ c | 30.85 | |
| 34 hr. @ 86¾c | 29.49 | |
| | | 60.34 |
| Material | | |
| Belt dressing and lubricants | 1.66 | |
| Breaker plate | 10.14 | |
| | | 11.80 |
| | | $348.37 |

Tons per hour.....0.90536
Tons per 8-hr. day 7.2429
Cost per ton $6.26
Cost per bag $0.188
No depreciation, taxes or insurance considered.

**An Up-to-Date Mining Community Fostered by the Consolidation Coal Co.**

This is the mining town of Dunham, located near Jenkins, Ky., which with Burdine forms the group of model mining communities where the Consolidation Coal Co. produces 1,200,000 tons of coal per year. At Dunham the miners and their families do not live in hovels common to many coal towns, but here they have modern, well-kept homes and many have their own gardens. The "town square" exemplifies the cleanliness that prevails throughout the community.

# Minto Region Mining Is Both Primitive and Modern

### This New Brunswick Field Has Hand-Power Haulage of Tiny Cars on Wooden Rails in One Section and Electric Cutters in Another

By John McNeill
North Minto, New Brunswick

Extensive and complicated timbering and a potpourri of primitive and modern coal mining methods and equipment ranging from electric cutters back to hand-power haulage of tiny cars with wheels like those of a baby carriage are to be seen in the little-advertised Minto region of New Brunswick, Can. The district is in Sudbury and Kings counties. It is the only coal field in operation in the province, and so far as is known contains the only coal bed in New Brunswick, with the exception of an extremely thin measure at a place called Barryville.

In thickness the coal throughout the Minto field does not average more than 28 in. but it has been worked in places scattered over a distance of about 6 miles north and south. The breadth of the operated area is not more than a mile but the total extent of the field has not been determined.

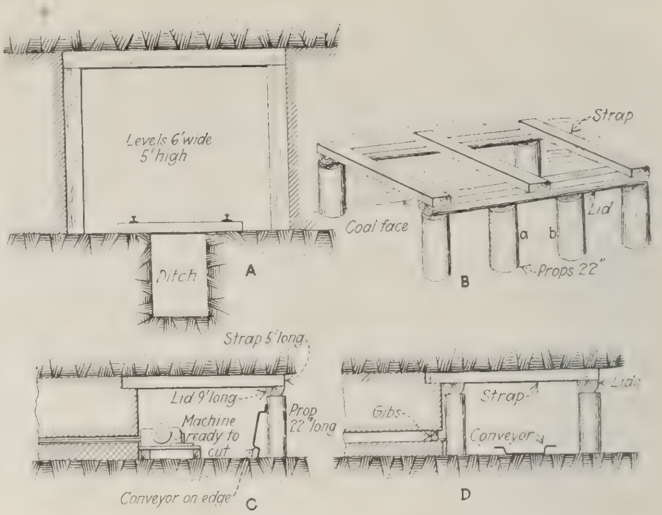
This coal field deserves consideration because of the difficulty encountered in working it in competition with richer fields. The roof is bad and the coal thin and hard. The field also is troubled seriously with water. It thus possesses most of the disadvantages encountered in mining and to operate in it requires as careful study as fields where the output from a single shaft reaches 10,000 tons a day.

As a whole this district is divided into two sections known respectively as South Minto and North Minto. The southern section has been longer in operation. Here the coal crops out and in the past has been won by strip mining. The output was not large, however, for in many places as much as 20 ft. of earth had to be removed to expose 20 in. of coal.

Most of the coal throughout this region is now reached by shafting. All over the field there are many small shafts from 50 to 100 ft. deep. The system of mining is board and pillar. The boards are 15 ft. wide and the pillars are of equal width. It is unusual to see a thin bed of coal worked by board-and-pillar. Some day a longwall system may be tried by hand mining. The main difficulty will be that of keeping the road roof and sides from crushing and blocking the entrances.

Minto Power Plant Supplies the Mine and Town

This plant generates the current necessary for the operation of the mining machines underground, the pumps employed in mine drainage and for lighting the town and vicinity of Minto. Its capacity is about to be substantially increased in order to meet the requirements of the steadily growing load.



Details of Drainage and Timbering

Water is extremely troublesome in these mines. Ditches for its removal are dug in the center of the tracks on all headings and by headings as shown in *A*. The machine faces are timbered by posts upon which rest lids or booms extending parallel with the face. Across these and supporting the roof, straps or beams are placed which are hitched into the face at their opposite ends. As the face is undercut additional posts and booms are set under the forward ends of these straps, thus relieving the face of all roof pressure. In *B* the props *a* and *b* are thick and are called "breakers." They are set before the machine cuts because the roof is troublesome.

In South Minto the roof is so soft that the coal is mined, or "stripped" as it is called, by hand picks. During this process, however, the roof has to be supported by short boards driven over a running boom from behind. The boards, called "laths," are 4 ft. in length, 6 in. or more in width and 1 in. thick. The running boom or "lid" is, of course, completely covered with laths, so that when the coal is extracted, a roof of wood remains all over the place. If care is not taken in placing the laths the roof may run down until it chokes itself. It will be seen that the skill of a builder as well as that of a miner is here required.

In these mines the cars hold only 5 cwt., or 560 lb. of coal each. They run on wooden boards 6 in. wide nailed to the ties. The wheels of the cars are like those of a baby carriage, but they run all right when the wheeler becomes accustomed to keeping them on the boards. The art of mining is developed in South Minto to as high a pitch as in "aristocratic" mines. Men work there who have mined coal in all parts of the earth, and they buy "moonshine" and motor cars, and swear, and go to church, and have dances—"even as you and I."

North Minto is different. Two companies are in operation there employing some 500 men. The shafts are about 100 ft. deep and the bed of coal is 2 ft. 2 in. thick but carries a 4-in. parting of "mud," as it is called locally. This mud is in reality a hard rock, and rests on 5 in. of bottom coal. The total height of the working is thus from 2 ft. 6 in. to 2 ft. 8 in. In this locality the roof is shale, easy to break, full of slips and joints which run in all directions and contains "pots," which if not carefully watched are sure to fall out. In such places the rock arrangement appears to be such that if one piece falls out, a bigger one will follow.

The following timbers are used for roof support: "Lids" or split booms 6 ft. long used to protect roadway roofs; "straps," planks 6 ft. long 2 in. thick and 6 in. wide, used along the face; "laths," boards 4 ft. long 6 in. or more wide and 1 in. thick used in whatever way may be required, and props of various lengths from 20 in. to 6 ft. A timberman is kept busy on the bankhead cutting timber and sending it into the mine.

In this locality also the bed is worked on the board-and-pillar system. The coal is so hard it cannot be dug with a hand pick and, accordingly, is shot from the solid. Naturally, in a thin bed such as this the results are not good. Even in the thinnest pillar, explosives must be used to bring the coal down. It never crushes as it does in some thin beds, and even a small nose is hard to cut.

Water constitutes a big obstacle to mining operations. The seam has hardly any distinct inclination, and no matter in what direction a place is driven, a small hollow is liable to be encountered which always fills up with water. And water in a low bed is a great drawback. To cope with it, ditches are dug on all the main levels, by-levels, and sometimes in the rooms. In some instances, also the bottom coal and mud are left in place and only the top coal worked.

### BOYS AND MEN PUSH CARS

The ditches dug for drainage purposes are from 1 ft. to 3 ft. deep and are located in the middle of the roads. The ties are laid across them and boards are nailed to the ties so that a good road to walk on is provided. Of course no horses are employed in these mines. So far the cars have been pushed to and from the bottom of the shaft by boys and men. These cars hold 10 cwt., or 1,120 lb. of coal each.

The volume of water, encountered in these mines is not large but the way in which it spreads in the low workings makes it troublesome. Most of it is drained through the ditches, to a single-stage centrifugal pump, that delivers it to a surface stream. A 4-in. pipe is large enough to keep the water down. Open lights are used in all the mines of the region as inflammable gas has never been detected there.

A year ago one of the operating companies introduced coal cutting machines. These are of the chain type and at the present time four are in use, cutting being done in the so-called "mud," and on a long face. These machines have all they can do to cut at all, but as a rule they undermine from 200 to 250 ft. of face in one shift.

**Miner's Dwelling at Minto**

Minto has its housing problems as well as other mining communities. This illustration shows the type of houses that have been erected for the use of the miners. There is nothing fancy in the architecture or construction of this cottage, but it is, nevertheless, neat, comfortable and "homey."

The coal is shoveled from the floor into conveyors and by them moved along the face of the run to the car. As the roof is heavy and slippery it has to be supported in a perfectly systematic manner. A running boom or lid is set on 2-ft. props which hold it from 2 to 3 in. below the roof. The props are kept 4½ ft. back from the face of the coal to let the machine pass. One end of a strap 5 ft. long is laid on the lid, the other end being hitched on top of the coal. These straps are not over 2 ft. apart. As the machine moves along its cut gummers shovel the cuttings into the gob while timbermen gib or sprag the coal and set a running boom or "lid" under the straps. When the miners shoot the coal they timber as they shoot. Thus they put straps above the last lid set hitching them on top of the new coal face. No mistakes must be made in timbering. With such a roof in a low place frequently troubled with water from both roof and floor, it will be seen that conditions for machine mining are not of the best. So far, however, it has been a success.

The company using the electric undercutters owns an electric plant which furnishes power for the hoists and cutting machines and also lights the town and neighborhood of Minto. Two generators are installed, each capable of yielding 310 hp. at 1,100 volts. Two large boilers furnish steam to these machines and a third unit is now being installed. This will add materially to the capacity of the plant.

**A Modern Mining Town in the Mountains of Kentucky**

This town of Burdine is one of three model communities fostered by the Consolidation Coal Co., in Letcher County, Ky. Built only on one side of the B. & O. R.R. the heart of the village nestles in the valley, and on the picturesque hillside many employees of the coal company have their homes overlooking the little town and affording a bird's-eye view of the valley and the tipple on the opposite mountain side. A modern school building, churches, stores, recreation buildings and a baseball park in this beautiful setting help develop contentment in the lives of the employees of the Consolidation company.

# Union Pacific Coal Co.'s Code of Standards—III*

### Transformers and Transformer Vaults

1. All transformers shall be provided with an oil circuit breaker in the primary circuit, the frame of which shall be effectively grounded.

2. Transformer vaults are to be located between the intake airway and the return.

3. The construction of transformer vaults must conform in plan to Figs. 12-13.

### Wiring of Surface Buildings and Tipples

1. All buildings shall be wired in metal conduits, special attention being given to neatness and the proper support and installation of fittings.

2. The voltage for such work shall be 250 volts or less.

3. Electric heaters in weigh rooms shall be stationary and connected to separate circuits from lighting circuits. They shall be protected with suitable guards to prevent inflammable material from coming within 8 in. of the heating elements.

4. Telephone and signal lines if liable to come in contact with high-voltage power lines shall, at the point where they enter any building, be protected with a Western Electric Co.'s Type 58 A.P. protector or its equivalent installed in a steel box which shall be properly grounded.

5. Motors in dusty places shall be installed in separate rooms which shall be made fire resistant by lining with metal lath coated with cement plaster.

6. Motor wiring shall be installed in metal conduit. Special attention shall be given to guarding exposed conductors and parts that may give electric shock.

7. Motor frames, starting compensators and control equipment shall be effectively grounded.

8. Starting compensators, controllers and switches containing oil, freezing of which will render the apparatus less effective, shall be filled with non-freezing oil.

9. All knife switches shall be of the safety inclosed type.

### Overhead Distributing Lines

An overhead distributing line is taken to mean any circuit or aggregation of circuits on poles, including supporting elements, that are used for supplying electrical energy at a potential not exceeding 2,300 volts. It includes motor, lighting, signal, telephone circuits, etc.

1. Pole spacing shall be 100 ft. in streets and alleys.

2. Pole lines shall be inspected every year to determine condition of butts below the ground line.

3. All lines shall be inspected every two months to determine their general condition.

4. Cross-arms shall have a center-pin spacing of 30 in. and a side-pin spacing of 14½ in.

5. All wires of the same circuit shall be carried on the same cross-arm.

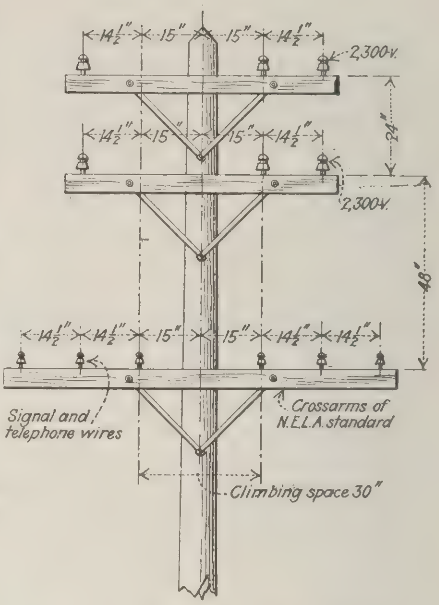


Fig. 14—Making It Safer Among the Wires

Climbing space is provided by setting all wires on the crossarms so that none comes closer than 15 in. to the center line of the pole. Thus a 30-in. clear space is always kept.

6. Vertical risers on poles from underground cables shall have a metallic sheath or be inclosed in a metal conduit.

7. Ground wires attached to the surface of a pole shall be protected by a wooden casing not less than 1½ in. thick and shall not make contact with cross-arm braces, guy fastenings or other exposed metal parts.

8. Guy wires shall have an interlocking strain insulator which shall be so located as to give 6 ft. of horizontal clearance from the pole guyed.

9. All poles to which guys are attached shall be protected with guy shims and guy hooks.

10. For climbing space on poles see Figs. 14 and 15.

11. Cross-arms carrying power wires of the same voltage shall have a vertical spacing of 24 in.

12. Cross-arms carrying signal and telephone wires shall have a vertical spacing not less than 48 in. from power lines.

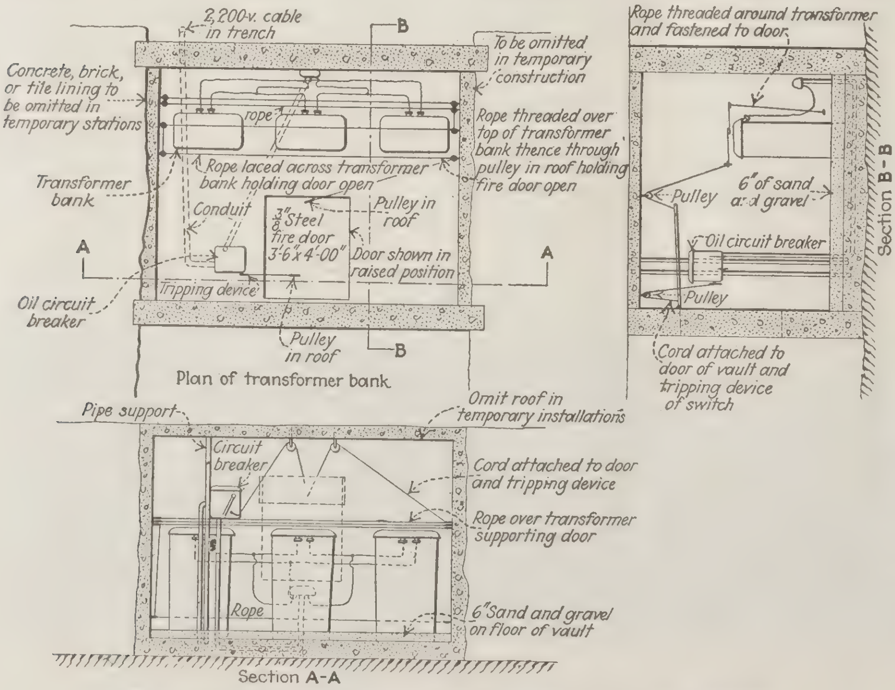
13. Material and minimum size of conductors shall be as follows:

2,300 volt lines, No. 6 B. & S. gage M.H.D. copper; 110/220 volt lines, No. 8 B. & S. gage M.H.D. copper. Signal and telephone lines, No. 12 B.W.G., EB.B. galvanized iron wire. Pole steps shall be ⅝x9 in. galvanized iron.

M.H.D.—Medium hard drawn.
B.W.G.—Birmingham wire gage.
E.B.B.—Extra best best.

### Instructions to Persons Inspecting Electrical Equipment

1. Inspectors shall pay particular attention to ground connections and shall satisfy themselves, beyond doubt, that the ground wire will serve the purpose for which it is intended.


2,200-v. cable in trench
B
Concrete, brick, or tile lining to be omitted in temporary stations
rope
To be omitted in temporary construction
Rope threaded over top of transformer bank thence through pulley in roof holding fire door open
Rope laced across transformer bank holding door open
Transformer bank
Conduit
⅜" Steel fire door 3'-6" x 4'-00"
Pulley in roof
Door shown in raised position
A
A
Tripping device
Oil circuit breaker
Pulley in roof
B
Plan of transformer bank
Rope threaded around transformer and fastened to door
Pulley
6" of sand and gravel
Oil circuit breaker
Pulley
Section B-B
Cord attached to door of vault and tripping device of switch
Pipe support
Omit roof in temporary installations
Circuit breaker
Cord attached to door and tripping device
Rope over transformer supporting door
Rope
6" Sand and gravel on floor of vault
Section A-A

Figs. 12-13—Transformers Are Isolated If a Fire Starts

Besides being inclosed in a vault all transformers used in the mines are set up between the intake and return airways. Rope made of combustible material is threaded around the transformers and normally holds a ventilating door in the vault open. Should a fire occur in the vault the rope will burn and thus permit the door to shut thus confining the blaze and opening the circuit breaker.

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*This is the third of a series of articles giving the Code of Standards put into effect by the Union Pacific Coal Co., at its operations in Wyoming. The first two articles appeared in the issues of Dec. 10 and 17 and the remainder of the code will be published in future issues in this form that permits of easy filing.

2. Concealed ground wires shall be replaced by others that are visible throughout their entire lengths where possible.

(Note: Parts that should be grounded are: Cable sheaths, conduits, oil switches and operating levers, transformer cases, motor frames, compensator and motor starting apparatus, metal boxes containing switches, resistors or control equipment, secondary circuits from transformers, controllers, pipe frames supporting switch boards and other equipment.)

3. Observe that ground wires from direct-current generators are properly connected to both rails of the track.

4. Wires leading to motors or generators shall be properly guarded.

5. Oil switches and compensators shall be examined for proper oil condition and for accumulations of coal dust.

6. Inspect wires and cables that cross passageways and hoisting slopes, as these may become loose and present a great hazard. Light, telephone or signal wires across slopes may endanger persons on man trips.

7. Determine that overload relays, automatic circuit breakers and under-voltage releases function properly.

8. Synchronous motors are operated with a fixed amount of exciting current at no load. See that the field adustments are correct and that instruments indicate properly.

9. Direct-current generators lose voltage upon becoming warm. See that someone adjusts voltage during the working shift.

10. Familiarize yourself with the operation of all pumps, motor-generator sets and hoists in order to determine that all starting, stopping, controlling and protecting equipment functions properly.

11. Low voltage at any working place or any extra load that is to be added to installed equipment, is to be reported at once to the mine foreman in charge.

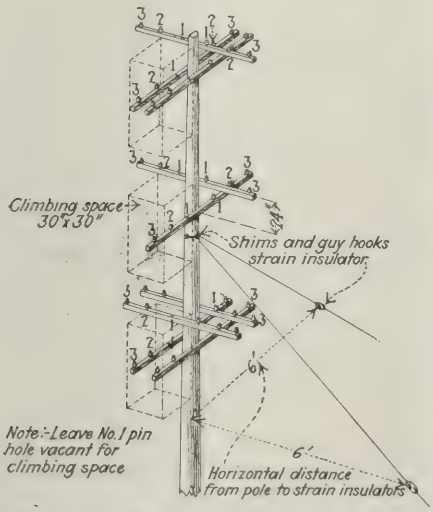

3
2
1
2
3
Climbing space 30"x30"
Shims and guy hooks strain insulator
6'
6'
Note:-Leave No. 1 pin hole vacant for climbing space
Horizontal distance from pole to strain insulators

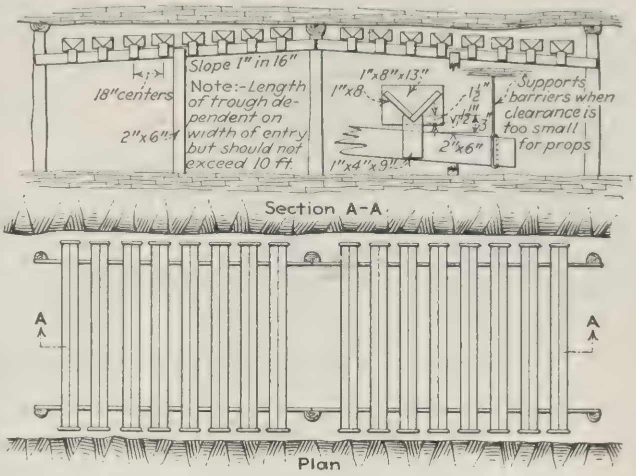
**Fig. 15—Buckarms Which Do Not Obstruct**

There is no need for the lineman to wind around the pole to get to the uppermost wires when buckarm construction like this is maintained. Note how the 30x30-in. climbing space is mainttined on one side of the pole.

FIG. 16

**Dust Barriers Stop Blasts**

Troughs filled with dust which not only falls on the surrounding floor and ribs but will hang in suspension, stop and localize explosions. The arrangement of these troughs varies; when the clearance in the gangway is limited they are hung from the roof on eye bolts as shown in the illustration.


18" centers
2"x6"
Slope 1" in 16"
Note:-Length of trough dependent on width of entry but should not exceed 10 ft.
1"x8"x13"
1"x8
1½"
1"
2"x6"
1"x4"x9"
Supports barriers when clearance is too small for props
Section A-A
A
A
Plan

12. Report all equipment overloaded, abused, or poorly ventilated causing overheating.

13. Inspect electrical equipment when not in operation to determine condition of bearings, brushes, commutator and collector rings, and observe condition of revolving parts for air gap clearances loose band wires and dust accumulations.

14. Inspect mining machine cables for bruised places and splices and see that they are adequately insulated and completely protected with rubber and friction tape.

### Safety Standards

1. Smoking or the carrying of any smoking or flame producing materials is prohibited in all mines operated on a closed-light basis.

Sec. 4,439, Wyoming Compiled Statutes.—"Any miner, workman or other person who shall . . . carry any pipe, cigar or cigarette, match or fire-producing material or appliance into places that are worked by safety lamps . . . shall be deemed guilty of a misdemeanor and may be punished in a manner provided in Sec. 4,451 which provides a fine of not less than $200 and not more than $500 at the discretion of the court."

Sec. 4,436, Wyoming, Compiled Statutes.—"Any man working in a mine or mines where safety lamps or electric lamps are used exclusively, shall be subject to search by the mine foreman or his assistants for matches or . . . inflammable materials. No person shall have in his possession in any part of the mine where locked safety lamps are used, any matches or means of producing fire, or any lamp key or instrument for the opening of a locked safety lamp. Any person or corporation violating any of the provisions of this section shall be guilty of a misdemeanor and subject to a fine not to exceed $200."

2. Any miner or other workman who is habitually found working in dangerous places due to his laxity in properly timbering or otherwise making himself safe subjects himself to immediate discharge.

3. All persons entering the mine must be checked in and out of the same, and every person while underground must have his life check on his person and in his right hand front trousers pocket.

4. No machinery of any kind will be allowed to operate unless all gears and other dangerous parts are fully guarded.

5. All mines shall be protected against the propagation of an explosion by rock-dust barriers. These barriers shall conform in plan and general construction and arrangement to Fig. 16.

(NOTE: In places where sufficient clearance is untainable or where it is deemed impractical to support dust barriers by props, they may be suspended from the roof by proper eye bolts. Where barriers are set into the roof, vanes shall be placed on either side of same to deflect the air currents into them.)

6. Dust barriers shall be located on all slopes, air courses, and manways intermediate of all cross entries as shown in Fig. 17.

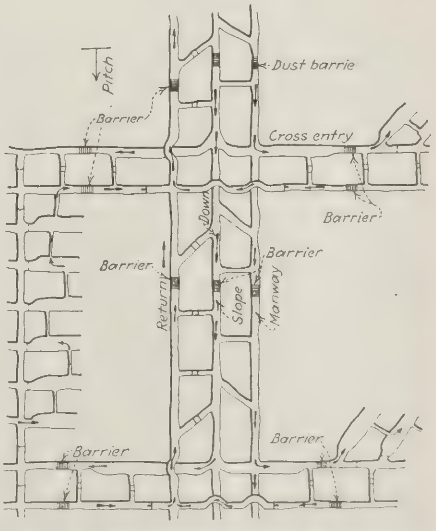
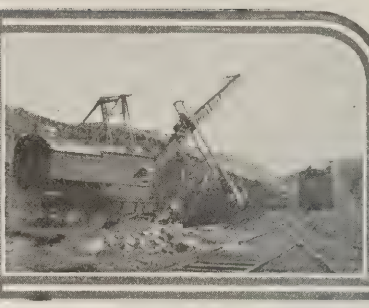


**Fig. 17—Blockades Against Explosions**

Complete sectionalization is attained by dust barriers on slopes, manways, returns and cross entries, as illustrated. Whatever explosions occur the aim should be to completely isolate them and minimize all danger to adjoining sections.

# News Of the Industry



## Hard-Coal Men Resume Peace Negotiations; Markle Plan Center of Interest

A new plan to insure permanent peace in the anthracite region is now under consideration by operators and miners. The plan, drafted by Alvan Markle, chairman of the joint conference, was submitted to the sub-committee of miners and operators, which resumed negotiations at a meeting which started at the Union League Club, New York, on Tuesday afternoon.

The plan, in full, reads as follows:

"(1) The terms and provisions of the award of the Anthracite Coal Strike Commission and subsequent agreements made in modification thereof, or supplemental thereto, as well as the meetings and decisions of the Board of Conciliation, are to be ratified, confirmed, approved and continued until the first day of September, 1935, subject to renewal every ten years thereafter, except as hereinafter modified.

"(2) The contract and working conditions which were operative on Aug. 31, 1925, are to be extended to and including Aug. 31, 1926.

"(3) Immediately, or as soon as possible, a fact-finding committee, consisting of three miners (or representatives) and three operators (or representatives), shall be appointed by the respective parties.

### Public to Be Represented

"(4-A) The committee shall join in respectfully asking the President of the United States to appoint three impartial citizens, preferably one a mining engineer and geologist, familiar with mining conditions and coal production, but not in any way associated with anthracite coal mining properties, one an economist of established reputation, who has not been employed heretofore by either party, and one a Judge of the United States federal courts. These three men, appointed by the President, are to represent the public, and they are to select a reputable firm of certified public accountants, with authority to investigate and report promptly to the public representatives on every phase of the industry. The three public representatives shall meet with the committee, hear all arguments and facts as presented by both parties, as well as to consider the report of the certified public accountants. They (the public representatives) shall meet separately, prepare a report and submit their recommendations to the President of the United States and joint committee of miners and operators.

"(B) The committee then shall meet as a whole to reach an agreement as to wages and any change in the contract requested by either party, it being understood that the public representatives may enter into all discussions but shall not have a vote except in the following instance:

"If, after the submission of the report of the public representatives named by the President, the miners and operators shall fail to reach an agreement upon any disputed point or points within sixty days after such submission, then in such event the public representatives shall each be entitled to cast a vote upon such disputed question or questions, with the representatives of miners and operators, and a majority of the nine members shall decide the same.

### Committee to Meet Annually

"(5) On the first Wednesday of June, 1926, and the first Wednesday of June in each succeeding year, the joint committee of three representatives of the anthracite miners, the three representatives of the anthracite operators, and the three representatives appointed by the President to represent the public, shall meet at the request of either party, to adjust wages and conditions for the year beginning on the following first day of September, as herein provided in Paragraphs 4-A and 4-B.

"(6) The wage rates determined by the committee shall be for a period of one year, beginning upon Sept. 1, and if the committee is delayed in fixing rates through causes unforeseen beyond their control until after Sept. 1 in any year, there shall be no lockout or strike, and the decision when rendered shall be retroactive as of Sept. 1 of such given year.

"(7) The joint committee shall elect a chairman and secretary, with the right to join in discussions, but without power to vote, and the chairman shall have power to convene said committee at his discretion.

"(8) Rules and regulations for the conduct of meetings, as well as place for same, shall be agreed upon by the joint committee at the first meeting.

"(9) In case of death or disability or resignation of any appointee, the vacancy thus caused shall be filled by the party which named the appointee in the first instance.

"(10) The expenses of the committee shall be divided equally between the miners and operators."

At the opening of the conference the various other plans recently proposed were placed in the record. When the Markle program was laid before the meeting, opposition was voiced by the miners on the ground that the plan meant arbitration. The operators, on their side, reiterated the necessity for a settlement which would end periodic suspensions. Particular emphasis was placed upon the provisions of paragraphs 4-A and B. The chairman explained that these provisions were inserted to provide strict impartiality.

The miners wanted to know whether freight rates and selling prices would come in the scope of the Markle program. The reply was made that the fact-finding committee set up could not go outside the terms of the wage contract. The operators argued that any decision fixing prices would be illegal. The miners retorted that it was not fair to arbitrate wages and not prices.

The committee continued in session until nearly midnight and then adjourned until yesterday afternoon. Neither side would make any predictions as to the outcome.

### Attempt Conference at Scranton

For a few hours last week it looked as if the conference reconvened at New York on Dec. 29 would be anticipated by a meeting at Scranton under the auspices of the mayors and burgesses of the anthracite region. Following the Inglis letter of Dec. 20, in which it was stated that the operators accepted the invitation to resume negotiations provided that the miners abandoned their reported insistence upon the discredited Pinchot plan as the basis of settlement, Mayor Durkan of Scranton wired Mr. Lewis to meet with the operators at Scranton on Dec. 22. Late on the afternoon of Dec. 21, however, Major Inglis sent a second communication to the mayors and burgesses in which he said:

> It is necessary, to make our position perfectly plain, to remind you that the resolution under which your invitation to a meeting was authorized and issued specified that the conference was to be on "the understanding that either side shall be at liberty to bring up for discussion its own plan or plans, the Governor's plan or any other plan that may be offered."
>
> Mr. Lewis's response to your invitation stated that "if the mine workers enter a conference it will be upon the basis of the Governor's compromise."
>
> Our response to your invitation stated that we would attend the conference with-

## *Real Earnings of Contract Miners In Anthracite Fields—III*

(MADEIRA, HILL & CO.)

Are contract miners in the anthracite fields underpaid?

John L. Lewis, international president of the United Mine Workers, insists that they are. He has repeatedly drawn upon the reports of the Coal Commission, with their misleading figures basing earnings upon the number of starts made, to support his assertion. In a statement published in the Sept. 15 issue of the *United Mine Workers' Journal*, Mr. Lewis declared that the average was $1,700 per year, from which "there must be deducted over $200" for supplies.

Check of actual payrolls, however, tells a far different story.

The collieries of the anthracite operations of Madeira, Hill & Co. made 284 breaker starts in 1924 and employed 1,047 contract miners. Of this number, however, only 439, or 42 per cent, worked regularly enough to appear on each of the semimonthly payrolls. Of this number, 51 men averaged over $4,000 *net* for their labors. The lowest rated group averaged $1,276.71.

The average earnings by $100 groups for the 439 contract miners were as follows:

| Miners | Average Annual Earnings | Miners | Average Annual Earnings |
|---|---|---|---|
| 51....... | $4,004.98 | 32....... | $2,355.11 |
| 5....... | 3,455.91 | 40....... | 2,253.74 |
| 6....... | 3,345.50 | 27....... | 2,160.11 |
| 11....... | 3,245.80 | 21....... | 2,055.64 |
| 19....... | 3,142.65 | 18....... | 1,954.41 |
| 17....... | 3,046.83 | 20....... | 1,859.52 |
| 14....... | 2,945.31 | 16....... | 1,749.97 |
| 14....... | 2,857.49 | 9....... | 1,671.44 |
| 17....... | 2,742.36 | 6....... | 1,549.09 |
| 25....... | 2,645.61 | 5....... | 1,459.11 |
| 24....... | 2,542.97 | 2....... | 1,362.83 |
| 37....... | 2,454.41 | 3....... | 1,276.71 |

The average earnings for the entire group of 439 were $2,597.32. Forty-six per cent of the group made more than $2,500. Eighteen per cent fell below $2,000; men in this division worked less than 258 days and the lowest rated groups averaged 239 days. Average daily earnings ranged between $6.05 and $14.17 for an average day of approximately 6½ hours.

> out any conditions whatever provided that the miners accepted your invitation in the same sense and without reservation. The miners have failed to do this.
>
> Until you can give us written assurance from the miners that they are willing to enter conference on the basis of your invitation and without any reservation, we regret to say that we cannot attend the meeting suggested. Such a meeting would lead to nothing except misunderstanding and further delay. It is because we are most anxious that our attitude should be thoroughly understood that we have given in detail the reasons on which this reply to you is based.

### Lewis "Misunderstood"

Following the receipt of this letter, Mayor Durkan wired Mr. Lewis that the conference was off. Still later Mr. Lewis wired from his home in Springfield, Ill., that his position had been misunderstood. "Governor Pinchot," he said, "has urged that I clarify the wrong impression of the mine workers' attitude which has been brought about by improper interpretations. Accordingly you are advised that while the mine workers will enter the conference in the light of your invitation and in conformity with our telegrams to your committee, the presentation and advocacy of the Governor's plan does not prevent the consideration of any other plan or plans by the parties to the conference."

Before this telegram was made public, however, a bombshell was thrown into the miners' camp by the appearance of an appeal signed by sixteen Catholic clergymen, who said they represented "in a pastoral capacity 85 per cent of the miners of anthracite coal," declaring that the miners were tired of the suspension and wanted arbitration of all disputed points upon which the operators and the union were unable to reach an agreement. Failure of the operators and miners to get together, asserted the clergymen, had resulted in the irreparable loss of millions of dollars to employers and employees and to the public, a national prejudice against anthracite, loss of faith in the future of the anthracite region, danger to the health and lives of the workers and their families and a state of idleness producing a demoralized citizenry.

District leaders of the union displayed restrained resentment over the action of the priests, but in other quarters the statement was accepted generally as a true picture of conditions. The position taken by the pastors was indorsed the next day by eleven pastors of English-speaking congregations.

Shortly before midnight Christmas Eve, Alvan Markle, chairman of the joint conference, announced that a call had been issued for a meeting at New York on Dec. 29. Two days later full-page advertisements began to appear in the papers in the region offering to reopen the mines at once at the old wages and to continue that scale until next September.

## More Ships Switch to Coal

The U. S. Emergency Fleet Corporation will place additional coal-burning ships on its Oriole Line to United Kingdom ports, displacing oil burners. Arrangements to this effect are now in progress, according to statement last week by James F. Paige, assistant to the vice-president in charge of operations. This decision is due, it is understood, to the substantial savings effected by the substitution, several months ago, of four coal burners for oil burners. It is estimated that the entire cost of placing these four coal burners in spot condition will be recovered in less than 18 months through fuel savings. The reconditioned ships were part of what is known as the "laid-up" fleet.

## $6,000,000 Merger Plans 20,000,000 Ton Output

A consolidation of coal and dock properties that handled twelve million tons of coal this year was announced at Cleveland, Dec. 29, by Frank E. Taplin. It is the North American Coal Corporation, a holding and sales company whose incorporation papers were filed on Dec. 30. The new concern is capitalized at $6,000,000. It was said that three more companies were to come in early in 1926 to raise the output to twenty million tons.

Mr. Taplin's Cleveland & Western Coal Co. forms the nucleus of the North American Coal Corporation. The others included are the Powhatan Mining Co., the Pittsburgh Terminal Coal Co., the Standard Island Creek Coal Co. and three dock operating companies, the Inland Coal & Dock Co., of Duluth, the United Coal & Dock Co., of Milwaukee, and the Canada Coal Co., Ltd. The North American will be the selling agent also for W. C. Atwater & Co., of New York. The officers of the corporation are Mr. Taplin, president; William Taylor, of Cleveland, A. S. McQueen and C. E. Tuttle, of Pittsburgh, vice-presidents.

## Byproduct Coke Production Breaks Record in November

Output of byproduct coke in November, 1925, according to the Bureau of Mines, was 3,557,000 net tons, which is the highest on record, being an increase of 155,000 tons, or 4.6 per cent, compared with October. The coke plants operated at about 88 per cent of capacity. Including the new plant at Troy, N.Y., and the rebuilt plant at Chester, Pa., the number of byproduct plants in existence now totals 80, of which 74 were active during November.

Of the total production of byproduct coke during November, 2,953,000 tons, or 83 per cent, was made in plants associated with blast furnaces, and 604,000 tons, or 17 per cent, at merchant or other plants.

Beehive coke output in November totaled 1,213,000 net tons, an increase of 207,000 tons, or 20.6 per cent, compared with October. Byproduct plants contributed 75 per cent of the output of all coke in November.

### Eastman New I. C. C. Chairman

J. B. Eastman will become chairman of the Interstate Commerce Commission Jan. 1, under the rule of rotation by which the position is filled from among the commission members. Mr. Eastman, formerly a member of the Massachusetts Public Service Commission, was appointed to the federal body by former President Wilson.

### "Soo" Coal Traffic Lower

During the lake shipping season of 1925 11,974,347 net tons of bituminous coal and 899,989 tons of anthracite passed through the "Soo" Canals. This was a decline of 1 per cent in soft coal and of 37 per cent in hard coal as compared with 1924, when the totals were 12,126,252 tons and 1,439,701 tons.

## Reign of Terror Marks Christmas Observance In W. Va. Strike Zone

A reign of terror broke out in the northern West Virginia coal fields last week, which culminated in an unsuccessful attempt to destroy the steel girder bridge of the Western Maryland Ry. that spans the West Fork River at Bingamon, Marion County, at 4:30 a.m. Dec. 23. Nitroglycerine, police believe, was used to blow up the shoes on the bridge, with the result that the main span sagged to the middle pier of the bridge, which is 300 ft. long. The extent of the damage will not be known until the company engineers of Cumberland, Md., make an inspection of the damaged structure. Effort is being made by the railroad officials to make the necessary repairs to the bridge by early this week. Western Maryland detectives, state police and county authorities are at work on the case. No coal cars can be moved until repairs are made, but with the ease-up over the holidays there will be no serious tie-up. The Carolina mine of the Consolidation Coal Co. on the Helen's Run branch is in a position to work, this branch coming on to the Monongahela River branch of the Baltimore & Ohio at Chieftown.

A charge of dynamite is believed to have been hurled from a passing automobile under the house of Andrew Pawiski in Monongah on Monday night, Dec. 21, when a portion of the structure was blown away. The house is owned by the Consolidation Coal Co., and it is reported that Pawiski was previously threatened. Pawiski, who is a Polish miner, was among the first foreigners to work there, and it is thought that the demonstration was against any Poles breaking the strike there.

### Dynamite on Christmas Day

A third dynamiting incident occurred early Christmas morning when an attempt was made to destroy the home of John Bondo, a merchant of Monongah, who is working open-shop in the Monongah mine of the Consolidation Coal Co. Only windows in the home were shattered. The bomb was thrown from a passing automobile.

Fire of unknown origin destroyed a vacant double house of the Consolidation Coal Co. at Baxter early Sunday morning, Dec. 20. A loss of $4,000 was sustained. The Fairmont fire department responded and kept the flames from spreading to other buildings in the mining town.

Twenty thousand children in the 12½ counties of northern West Virginia were treated to candy, apples, oranges and nuts by the United Mine Workers on Christmas Day. Similar depots were opened in Grafton, Clarksburg, Morgantown and Tunnelton. Entertainments were held by many of the local unions and Christmas trees in many instances were trimmed in the barracks, including Grant Town, Dakota, Baxter, Barrackville, and other places. Addresses were made by international representatives at all of the Christmas gatherings. One of the largest attended gatherings was in the miners' hall at Monongah, where the union Sunday schools rendered Christmas carols on the evening of Dec. 23.

## *Plan Co-operative Selling In Western Kentucky*

Preliminary steps for the formation of a centralized sales organization for western Kentucky operators were discussed at a conference of about twenty-five producers from that field, held in Louisville, Dec. 16. A committee was named to study the matter and decide on the feasibility of the plan, after analyzing the legal technicalities surrounding it. Tentative arrangements were made for another meeting at an early date to continue the discussion.

Aaron Sapiro, who organized California and other Western fruit and vegetable co-operatives, the tobacco growers, cotton producers, potato shippers and others, outlined co-operative sales methods.

The plan, of course, is to terminate as much as possible the present policy of "loose selling." Any organization that may be formed will be separate from any existing body.

For two years or more western Kentucky operators have been discussing various merger proposals, none of which has been worked out satisfactorily yet.

Because of the holidays the coal production will suffer for the next week or more. Most of the coal mines closed down at the end of Wednesday and planned to resume Monday, Dec. 28. The lack of demand for coal, heavy accumulations and the trade facing the inventory season of railroads and industries, will curtail output.

In the first two days of last week 4,008 cars of coal was produced by non-union mines compared to 610 cars by union mines. There were 234 non-union mines at work Dec. 21, when they produced 2,001 cars of coal, while on Dec. 22 225 mines were active, and they loaded 2,007 cars of coal. Fifteen union mines worked both days, and on Dec. 21 produced 313 cars of coal and on Dec. 22, 297 cars.

The production while heavy during the beginning of the week slumped toward the week-end. In the first two days of the previous week the non-union mines loaded 3,862 cars of coal, while union mines produced 448 carloads. During that week 255 non-union mines were at work daily on the average and 14 union plants operated.

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The Tidewater Power Co., Raleigh, N. C., and Southern Power Co., Charlotte, N. C., will ask for offers on an aggregate of about 300,000 tons of coal, mostly slack, for delivery in the near future. These companies have found themselves in need of coal for their auxiliary power systems, because of the extended drought of last summer and the consequent lack of proper water supply for their hydro-electric systems.

## Changes in Mines Committees In Both Houses

The membership of the Senate Committee on Mines and Mining for the Sixty-ninth Congress is made up as follows: Tasker L. Oddie, of Nevada, chairman; Thomas J. Walsh, of Montana; Coleman duPont, of Delaware; Henry F. Ashurst, of Arizona; Key Pittman, of Nevada; Guy D. Goff, of West Virginia; William H. King, of Utah; Lynn J. Frazier, of North Dakota; Robert M. LaFollette, of Wisconsin; Arthur R. Robinson, of Indiana. Ralph H. Cameron, of Arizona, has been transferred from the committee to a vacancy on the Appropriations Committee. Rice M. Means, of Colorado, also has retired from the committee to accept a place on the Committee on Public Lands.

The membership of the Committee on Mines and Mining of the House of Representatives is as follows: John M. Robsion, of Kentucky, chairman; Arthur H. Greenwood, of Indiana; William Williamson, of South Dakota; Mell G. Underwood, of Ohio; Don B. Colton, of Utah; Joseph Whitehead, of Virginia; Charles E. Winter, of Wyoming; Andrew L. Somers, of New York; W. H. Sproul, of Kansas; Butler B. Hare, of South Carolina; George F. Brumm, of Pennsylvania; Virgil Chapman, of Kentucky; J. J. Manlove, of Missouri; Arthur M. Free, of California; Edmund M. Carpenter, of Pennsylvania, and Dan A. Sutherland, of Alaska.

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## Senator La Follette Seeks Hard-Coal Company Data

A resolution providing "that the Secretary of the Treasury be and he is hereby authorized and directed to furnish to the Senate a statement based on corporation income tax returns covering the year 1924, showing for each corporation engaged in the mining of anthracite coal the amount of capital stock, the amount of invested capital, the amount of net income, the amount charged to depreciation and depletion account and the amount of federal tax paid by each such corporation," was presented in the Senate at Washington Dec. 22 by Senator LaFollette. Upon objection of Senator Reed, Pennsylvania, the formal introduction of the resolution goes over, according to the regular Senate rule, until the next calendar day, which in this instance is Jan. 4. It will be noted that this resolution does not call for action by the House of Representatives.

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## Massachusetts Dealers Have Coal for About a Month

Retail coal dealers in Massachusetts reported stocks of 178 000 net tons of domestic anthracite, 333,474 tons of bituminous coal and 34,127 tons of coke in their yards on Dec. 1. During November the dealers delivered about 187,000 tons of anthracite, 220,000 tons of bituminous coal and 28,000 tons of coke. The cumulative deliveries of anthracite by dealers in the first eight months of the coal year total 3,528,558 tons, which is about 69 per cent of the total deliveries in the last coal year.

# To Push Legislation on Hard Coal in Congress Even if Strike Ends Soon

**By Paul Wooton**

Washington Correspondent of *Coal Age*

Appeals in the Senate and in the House of Representatives for the consideration of coal legislation thus far have failed to elicit any promise or commitment from the chairmen of the committees having jurisdiction. Some idea, however, of the views of Representative Parker, chairman of the House Committee on Interstate and Foreign Commerce, has been obtained. Representative Treadway of Massachusetts, in the course of remarks on the floor of the House, said the public is being left out of the equation by the operators and miners, whom he held to be equally responsible for the present situation.

This led Chairman Parker, whose committee must take the first step in any legislation that has been proposed, to ask if thought had been given to the fact that anthracite is mined within the borders of a single state and that it is a matter which must be handled largely by that state.

When Representative Treadway declared that the Girard "trust" is taking the money for its "so-called" charities from the anthracite consumers, largely in states other than Pennsylvania, Mr. Parker again asked his significant question: "Will the gentleman point out how we can remedy that situation?" This brought from Mr. Treadway the admission that he simply was bringing that situation to the attention of the public. He added that he would bring under regulation that part of the anthracite production which enters into interstate commerce.

### Seeks Legislative Protection

Mr. Treadway commended strongly to members the recommendations of the Harding Coal Commission that anthracite be declared a public necessity and that full publicity be given the items making up the cost to the consumer. He made it clear that he will strive for legislation, even if the present strike should be settled in the near future, so that New England and other anthracite consuming states will know "whether they must learn to do without anthracite or, as an alternative, whether they can be protected so as to expect a continuous supply and at a price which they know to be fair and proper."

Congress was urged by the New England Representative to take action that may result in "freedom from the octopus of Pennsylvania greed, and when I say Pennsylvania greed, I refer to the state itself, exactly as much as I do to the operators and miners." If the state wants to show good faith, Mr. Treadway feels, it should repeal its export tax and its miners' licensing law and use its great power to change its royalty system.

In the Senate, Mr. Copeland, of New York, made an oratorical effort on behalf of those who are suffering as a result of the strike. He urged Congress to act in their behalf, but failed to suggest the form such action should take.

As this is written, Senator Oddie is awaiting Secretary Hoover's report on his Bureau of Coal Economics bill. With that report in hand, which may suggest extensive changes in the bill, it is Senator Oddie's intention to start public hearings.

In the meantime, much light is thrown on the condition of the country by the report on stocks issued by the Bureau of Mines, shown on another page.

George J. Young

Mr. Young, who for the past five years has been associate editor for *Engineering & Mining Journal-Press* with headquarters at San Francisco, will also serve in the future as Pacific Coast editor of *Coal Age*. Mr. Young is one of the authorities on mining engineering and mining methods, especially through his book on "Elements of Mining," which is published by the McGraw-Hill Book Co. It is considered the best work of reference on the subject. A volume by Mr. Young on "Underground Mining Methods" is now being published by Ernest Benn, Ltd., in London, the British publishers having especially requested Mr. Young to undertake this volume. Arrangements also have been made to publish it in the United States through the McGraw-Hill Book Co. Mr. Young is a graduate of the University of California, and in the course of his career has served as professor of mining at the Mackay School of Mines in Nevada and the University of Minnesota and as professor of metallurgy at the Colorado School of Mines.

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## Consumers Company Floats Big Bond Issue

The Consumers Co., Chicago's largest retail coal concern, has sold to Halsey, Stuart & Co. $8,500,000 in securities, consisting of $6,000,000 first mortgage sinking fund 6 per cent bonds, due Jan. 1, 1946, and $2,500,000 6 per cent convertible gold notes, due Jan. 1, 1931, which are to be issued to the public soon. The financing is in accordance with plans decided when a reorganization of the financial structure of the company was effected, about six weeks ago. At that time Stuyvesant Peabody was elected president. The significance of this step was explained when it was stated that the Consumers Co. hereafter will be under the management of the Peabody Coal Co., of which Mr. Peabody is also president.

## Pittsburgh Coal Co. Soon To Reopen Sixth Mine In Smoky City District

The Pittsburgh Coal Co., it is reported on reliable authority, will reopen another mine in the Pittsburgh district on the 1917 scale within a week or so. This will give the company a total of six mines working on the 1917 scale in the Pittsburgh district. While the exact location of the new mine is not revealed it probably will be in Allegheny County, adjacent to the City of Pittsburgh, in which county the company already has two mines working.

The opening of the sixth mine, preparations for which are said to have been completed, is the result of the successful period of operation at the other pits of the company in this district. During the last few weeks the Pittsburgh Coal Co. has been averaging from the five operations in the neighborhood of 20,000 tons of coal per week, for which a ready market is obtainable, and the reopening of the additional operation will be in pursuance of the company's policy to gradually expand its operations until as many of the mines in western Pennsylvania are producing as it is possible to keep going.

In general, the actions of District No. 5, United Mine Workers, during the past few months have been passive in respect to the lower wage rate paid by the Pittsburgh company, but during the past week a number of reports have been current that some campaign toward the re-establishment of the Jacksonville agreement was being fomented in the union ranks.

On Dec. 24 the Pittsburgh Coal Co. distributed at its five mines the largest payroll since the resumption of operations on the 1917 scale. The total was $72,535.36, which with the distribution $60,043.37 to the miners on Dec. 12 makes a total of $132,578.73 paid in December. Midland mine, near Canonsburg, paid out the biggest sum distributed in any one of the company mines on Thursday, the Christmas pay there being $20,972.05. The average number of men participating was 274. Banning No. 2 mine, near West Newton, came next with $20,110.68 to an average of 257 miners. The payroll at Banning No. 1 was $16,996.90 to an average of 238 men and at Montour No. 10, at Library, $14,447.73 was paid to an average of 207 men. The pay at Mansfield was small due to the limited force of men there.

## 1,000 Gondolas for L. & N.

An order for 1,000 all steel drop-bottom coal cars of the gondola type was recently placed by the Louisville & Nashville R.R. with the Pressed Steel Car Co., Pittsburgh, at a cost of $1-800,000, it was announced at the office of the president of the road, at Louisville, Ky. The cars are to be delivered in March and April. This expenditure brings the total for new equipment, including passenger and freight cars and locomotives, ordered by the railroad within the last three months to $8,700,-000, according to the announcement.

# Consumers' Stocks of Bituminous Coal Total 48,000,000 Tons Nov. 1; Output Fails to Offset Anthracite Deficiency

Stocks of bituminous coal in the hands of consumers on Nov. 1 totaled about 48,000,000 net tons, according to a survey by the U. S. Bureau of Mines. This was slightly larger than in the corresponding period of 1924. On June 1, 1925, stocks were 38,000,000 tons. Between June 1 and Sept. 1, consumers added 5,000,000 tons to their total reserves, and between Sept. 1 and Nov. 1, another 5,000,000 tons. From the trend of production and consumption it is apparent that the flow of coal into storage has continued since Nov. 1.

At the rate of consumption prevailing in September and October, when busi-was active and consumption large, the stocks on Nov. 1 were sufficient to last 35 days. This compares with a supply of 45 days on Sept. 1, 1924, when business was dull; 46 days on Sept. 1, 1923, and 23 days on Nov. 1, 1922. These figures, of course, presuppose that stocks are equally divided, which never is the case.

In addition to the storage piles of consumers on Nov. 1, there were 7,512,000 tons of bituminous coal on the docks of Lakes Superior and Michigan, at least 221,000 tons held in storage by producers at the mines or intermediate points, and 503,850 tons in railroad cars unbilled at the mines.

*Anthracite.*—On Sept. 1, when the anthracite strike began, retail dealers had on hand a supply sufficient to last 53 days, at the rate they were delivering to their customers in September and October. By Nov. 1, retail stocks of anthracite had been reduced to 27 days.

A group of 21 byproduct coke plants, selling domestic coke, available as substitute for anthracite, reported 599,000 tons of coke in stock on Nov. 1.

The estimate of soft-coal stocks is based on practically complete reports from the byproduct coke works, steel plants, and railroads, and on reports from a selected list of other consumers—about 5,000 in all. The estimate takes no account of coal in the bins of householders, concerning which no statistics are available, nor steamship fuel, nor the tonnage on the Lake docks, which latter item is included under "Coal in transit."

As shown in Fig. 1, the total stock on Nov. 1 was slightly higher than on Sept. 1 of last year, the nearest comparable record in 1924. It was about equal to the level of stocks in the fall of 1921, much above that in 1922, after the great strike of that year, and much less than that of late 1923, when consumers were laying in reserves in fear of another strike.

The average rate of consumption plus exports for the two months of September and October was 10,500,000 tons of bituminous coal per week. This high rate indicates activity among the coal-using industries and also a considerable substitution of bituminous coal for anthracite.

### Charts Show Large Stocks

In studying the figures of days' supply by classes of consumers, shown in Fig. 2, it should be borne in mind that they are averages and fail to show the great variation between different plants and even different communities.

Fig. 3 shows how the reserves of soft coal in terms of days' supply varied from state to state on Nov 1. For this purpose the general industrial plants, other than steel and byproduct coke works, give the best indication, because they form both the largest group of consumers and the one most responsive to changes in the coal market. New England was heavily stocked with coal, every state showing over 90 days, the average for the region as a whole being 110 days. Stocks in the northern peninsula of Michigan likewise were very large. In New York State stocks averaged 78 days, in lower Michigan 63 days, in New Jersey 59 days. All other states show reserves for less than 60 days' supply.

Public utilities, as usual, carried heavier reserves than any other class of consumers. The supply at coal-gas plants on Nov. 1 was sufficient, on the average, for 78 days, and at electric central stations, for 46 days.

Complete returns from manufacturers of byproduct coke and steel indicate the following reserves:

### Byproduct Coke Plants

| | Days' Supply | | |
|---|---|---|---|
| | Sept. 1, 1924 | Sept. 1, 1925 | Nov. 1, 1925 |
| Low volatile | 33 | 18 | 28 |
| High volatile | 29 | 23 | 26 |
| Average... | 30 | 22 | 26 |

### Steel Plants

| | Days' Supply | | |
|---|---|---|---|
| | Sept. 1, 1924 | Sept. 1, 1925 | Nov. 1, 1925 |
| Steam coal.. | 36 | 30 | 31 |
| Gas coal.... | 56 | 33 | 33 |
| Average... | 42 | 30 | 32 |

Each group had a larger tonnage in stock on Nov. 1, 1925, than on Sept. 1, 1924.

The total quantity of railroad fuel on hand Nov. 1, according to the American Railway Association, was 10,600,000 tons, a supply sufficient to last 30 days.

All coal brought to the surface and not yet delivered to a retail dealer or a consumer may be considered in transit. The largest element in this mobile reserve is the coal in railroad cars, which, though it has never been accurately measured, is known to run into millions of tons and to be subject to sudden and wide fluctuations. Because of the heavy production in late October, the quantity of bituminous coal on wheels on Nov. 1 probably was two million tons greater than on Sept. 1 and eight million tons greater tran on June 1.

Storage at the mines is practiced by few producers and the quantity so stored at present is small. From a list of 43 companies who have at some time stored in quantity at the mines or at some intermediate point, the Bureau

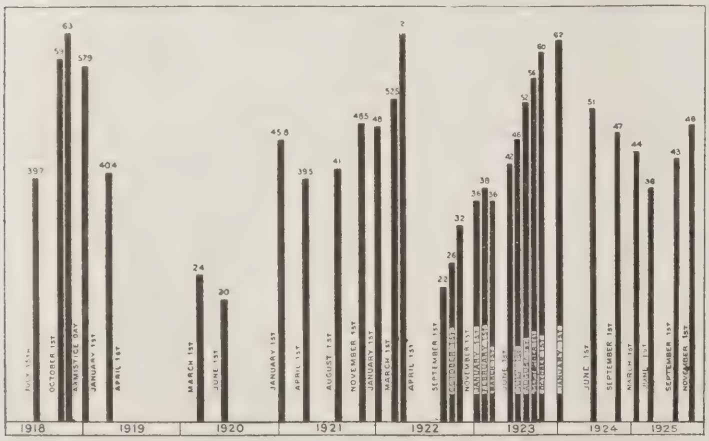


**Fig. 1—Total Commercial Stocks of Bituminous Coal, Oct. 1, 1916-Nov. 1, 1925**

Figures represent million net tons and include coal in the hands of railroads, industrial consumers, public utilities and retail dealers. Coal for steamship fuel, on Lake Docks, in transit and in the bins of householders is not included. From June 1 to Nov. 1 stocks increased about ten million tons, bringing the total back to the level of September, 1924. Reports are to the effect that since Nov. 1 further additions to stocks have been made.

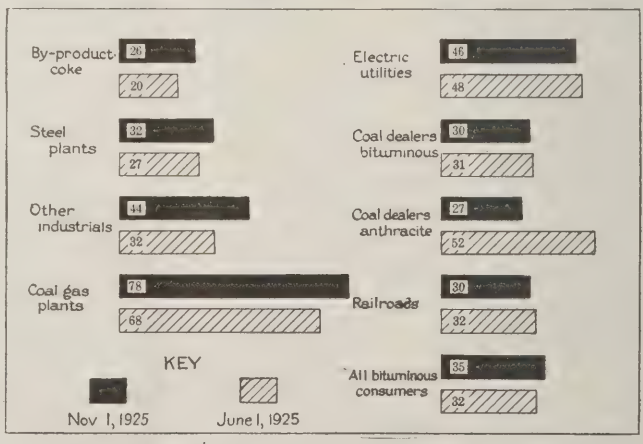


**Fig. 2—Days' Supply Held by Different Classes of Consumers June 1, 1925, and Nov. 1, 1925**

At the same time that the stocks of bituminous coal measured in tons were increasing, the rate of consumption also was increasing, so that measured in days' supply the reserve on Nov. 1, 1925, was not much greater than on June 1. The figures for June 1 are based on the rate of consumption in March, April and May, and the figures for Nov. 1 on that of September and October.

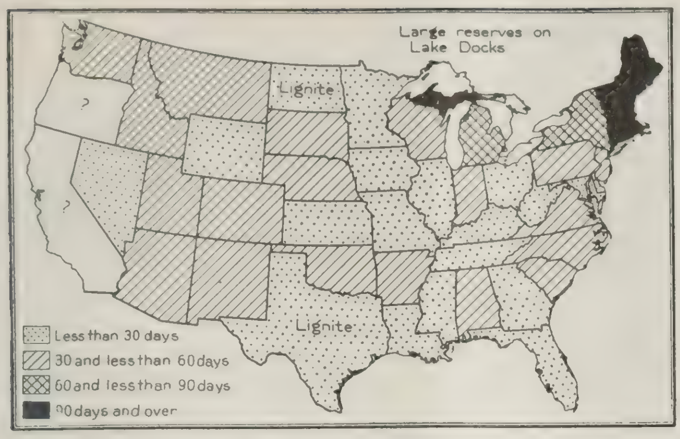


**Fig. 3—Days' Supply of Soft Coal on Hand at Industrial Plants Nov. 1, 1925**

This diagram shows state by state the distribution of the 44 days' supply of soft coal held at industrial plants, other than steel and byproduct coke works, on Nov. 1, 1925. New England, New York and Michigan stand out as areas of heavy reserves. Over the rest of the country, stocks are sufficient for less than 60 days.

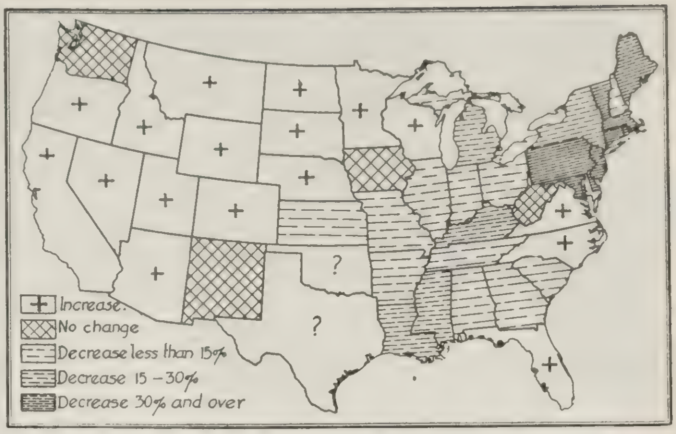


**Fig. 4—Changes in Retail Dealers' Stocks of Anthracite and Bituminous Coal Combined, Sept. 1 to Nov. 1, 1925**

Although retailers' stocks of bituminous coal increased from Sept. 1 to Nov. 1, the increase was more than offset by the decrease in stocks of anthracite. The total coal in dealers' yards therefore declined. In New England and the Middle Atlantic States the decrease generally exceeded 30 per cent. In the Middle West it was less. Most Far Western states gained.

**Days' Supply of Bituminous Coal in Hands of Various Classes of Consumers in the United States, Jan. 1, 1919, to Nov. 1, 1925 (*a*)**

(Figures represent number of days that supply would last at rate of consumption at time of stock taking)

| | Jan. 1, 1919 | June 1, 1920 | Aug. 1, 1921 | Nov. 1, 1921 | Sept. 1, 1922 | Nov. 1, 1922 | Sept. 1, 1923 | Oct. 1, 1923 | Sept. 1, 1924 | June 1, 1925 | Sept. 1(*b*), 1925 | Nov. 1(*b*), 1925 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| By-product coke plants.. | 32 | 8 | 31 | 38 | 11 | 18 | 30 | 33 | 30 | 20 | 22 | 26 |
| Steel plants............ | 42 | 11 | 46 | 46 | 12 | 21 | 33 | 39 | 42 | 27 | 30 | 32 |
| Other industrials........ | 65 | 24 | 56 | 67 | 32 | 39 | 56 | 56 | 48 | 32 | 38 | 44 |
| Coal-gas plants.......... | 81 | 22 | 79 | 87 | 34 | 55 | 110 | 91 | 90 | 68 | 67 | 78 |
| Electric utilities......... | 49 | 22 | 44 | 54 | 26 | 32 | 52 | 49 | 58 | 48 | 43 | 46 |
| Coal dealers, bituminous | 39 | 10 | 42 | 46 | 11 | 21 | 38 | 36 | 46 | 31 | 27 | 30 |
| Railroads.............. | 32 | 10 | (*c*) | 29 | 13 | 13 | 44 | 41 | 42 | 32 | 28 | 30 |
| Total bituminous...... | 42 | 15 | 39 | 43 | 17 | 23 | 46 | 45 | 45 | 32 | (*d*)32 | (*d*)35 |

(*a*) These figures are based on incomplete data. (*b*) Calculated at average rate of consumption in September-October. (*c*) No data. (*d*) Subject to revision.

has received reports of only 221,000 tons in stock on Nov. 1. In March 1923, these 43 companies had on hand 808,000 tons.

Reports from all of the companies show stocks of 7,512,000 tons on the docks of Lakes Superior and Michigan on Nov. 1. Though less than the heavy reserves accumulated in the fall of 1921, this compares favorably with other recent years, as is shown by the following totals: Nov. 1, 1921, 8,824,000 net tons; Nov. 1, 1922, 2,772,000 tons; Oct. 1, 1923, 6,862,000 tons; Sept. 1, 1924, 6,600,000 tons; Sept. 1, 1925, 6,366,000 tons.

The 21 byproduct coke plants supplying gas for city use report 599,000 tons of unsold coke on hand Nov. 1. The stocks on other recent dates have been: March 1, 1922, 987,000 net tons; Oct. 1, 1923, 476,000 tons; Jan. 1, 1924, 772,000 tons; Sept. 1, 1924, 1,114,000 tons; March 1, 1925, 606,000 tons; June 1, 1925, 694,000 tons; Sept. 1. 1925, 832,000 tons.

Unlike bituminous coal, considerable quantities of anthracite are stored at the mines or at intermediate points en route to consuming centers. The Bureau of Mines has been unable to obtain complete figures of such stocks as of Sept. 1, when the strike began.

There are no statistics on householders' stocks, but from the available facts as to production and shipments, it appears that the quantity in the cellars of householders was at least up to normal when the strike began.

On Sept. 1, when the strike began, retail dealers' stocks of anthracite were large. It was not possible to obtain reports from all dealers, but a selected group of representative dealers, who have been reporting regularly for seven years, had more anthracite in stock than on the corresponding date of 1920, 1921, 1922, or 1923, and nearly as much as in 1924.

Since Nov. 1, production of anthracite has continued practically zero. Production of bituminous coal during the succeeding seven weeks averaged around the very high rate of 12,400,000 tons per week. How much of the apparent surplus of bituminous production over bituminous consumption has gone to replace anthracite and how much to increase industrial stocks of bituminous coal is not known.

## Industrial Coal Consumption Declines in November

The industrial consumption of both anthracite and bituminous coal in the United States for November declined 25 per cent from the October level, according to the National Association of Purchasing Agents. This counteracts, to a certain extent, the estimated 26 per cent increase during October over the September figure. The November consumption is estimated at 37,464,000 tons. A total of 67,433,000 tons was on hand in industry Dec. 1. This is enough to last 54 days at the November daily rate of consumption of 1,249,000 tons. This is a great improvement over the situation last year, when 36½ days' supply was on hand Dec. 1.

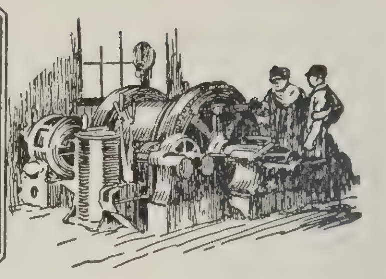
## Associations Decry Shipment On Consignment

A joint conference committee, on which the National Coal Association was represented by A. W. Calloway, president, Davis Coal & Coke Co., Philadelphia; H. N. Taylor, president, United States Distributing Corp., New York City; Ezra Van Horn, general manager, Clarkson Coal Mining Co., Cleveland, and T. F. Farrell, vice-president, Pocahontas Fuel Co., New York City (substitute for W. D. Ord), and the American Wholesale Coal Association by H. K. Cortright, president, Cortright Coal Co., Philadelphia; H. J. Heywood, Toledo, and Ira C. Cochran, Washington, president and commissioner, respectively, of that association, met Dec. 16 in the offices of the United States Distributing Corp., 17 Battery Place, New York City, to discuss the practice of open consignment of coal.

At this session the wholesale representatives called attention to the fact that, while last spring there was some curtailment of the practice of open consignment, yet during the past few weeks it had again grown rapidly. It was urged that the practice undoubtedly ties up and detains coal cars, congests terminals and otherwise interferes with the orderly functioning of the industry in getting its coal to market. After an extended discussion a resolution was passed to the effect "That this committee while not in any manner desiring to make any recommendation that will influence or affect either the quantity of coal produced or the price at which it should be sold, does in its judgment believe that in the interest of economy, efficiency and proper business practice, no coal should be shipped to any market except to fill bona fide orders for same."

There was a discussion as to the advisability of the co-operation of the two associations in case of any emergency and the joint committee was adjourned to meet at the call of the two chairmen.

# Practical Pointers For Electrical And Mechanical Men



## Home-made Nip Easily Connects Cutting Machine Cable to Trolley Wire

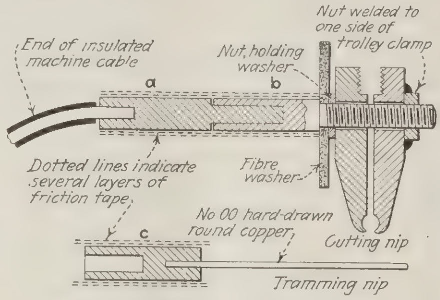
When Carson King, chief electrician of the Gatliff Coal Co., Gatliff, Ky., handed a new type of nip to one of the machine men and asked him to give it a trial, he annexed some extra work. The other operators besieged him to make nips of that type for their cutting machines.

The photograph indicates how the nip is used on the end of a machine cable to make connection to the trolley wire. With this device there is no need to make the connection at a hanger, because being on the wire it does not interfere with the trolley wheels of passing locomotives. The nip is easily attached to the wire, is just as easily taken off, and makes a good connection.

For tramming, a straight piece of No. 00 copper about 15 in. in length is substituted for the clamp. The change is made by means of a plug connector in the handle. This feature is shown in the sketch. Parts *a* and *b* could have been made as one piece and arranged for fastening the tramming wire to the end, but this construction would have made the device rather heavy. A tramming nip should be as light as possible otherwise when moving long distances the operators' arm will be tired by holding it up against the wire.

**Nip Clamped on a Trolley Wire**

It makes a tight connection and does not interfere with the trolley wheels of passing locomotives. The machine man does not have to make the connection at a hanger, but can fasten at any convenient point on the wire.


Nut welded to one side of trolley clamp
End of insulated machine cable
Nut holding washer
a
b
Dotted lines indicate several layers of friction tape
Fibre washer
No 00 hard-drawn round copper
Cutting nip
c
Tramming nip

**Sketch Showing Construction**

A Perfection trolley clamp was used in making the cutting nip. When tramming, part *b* is pulled off of *a*, and part *c* substituted. The plug connector is of a tight fit so as to not come loose accidentally.

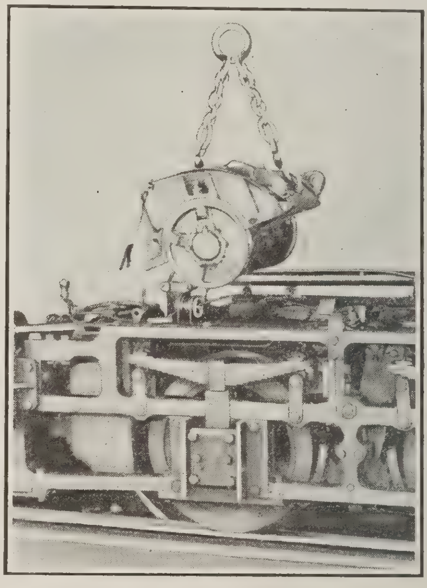
In the particular nip shown in the photograph a Perfection trolley clamp was used. The clamping-bolt hole, was reamed out to accommodate the brass stud. Any clamp of the same general type could be used. The nip is fastened to the wire by turning the handle *b* while the clamp is in position on the wire. The brass stud, screwing into the nut which is welded to one side of the clamp, brings the two halves together, making a tight connection to the wire.

## Locomotive Armature Is Easily Removed

Ordinary methods used to lift armatures from mine locomotives are not only awkward but dangerous to the armature windings, commutator and workmen. The motor is always in a tight place, and to remove the upper half of the frame, slip chains under the ends of the shaft to lift the armature from the lower half of the motor, requires much time and effort. Unless more than usual precaution is taken, the chains invariably squeeze and cut the ends of the windings, and quite often scratch and cut the ends of the commutator. In some instances the sling will slip off altogether, and in so doing injure the workmen. If it were possible, most workmen would take the pains to use a small steel sling to go under the ends of the armature shaft, but that is not a safe method and is quite difficult.

### ARRANGEMENT AIDS SAFETY

Special provision for the safe and quick removal of armatures has been made on a popular type locomotive shown in the illustration. The locomotive has motors with split frames bolted around the housing, and to remove the armature all that is necessary is to take out the bolts holding the top half of the motor frame to the lower section. The entire top half, armature and all, can then be safely lifted out. In the top half of the motor frame two eyes are specially cast for this purpose.



**A Safe Way to Take an Armature Out of a Locomotive**

The upper half of the motor casing together with the armature are removed at once by this method. With this arrangement the armature can be removed easily and safely.

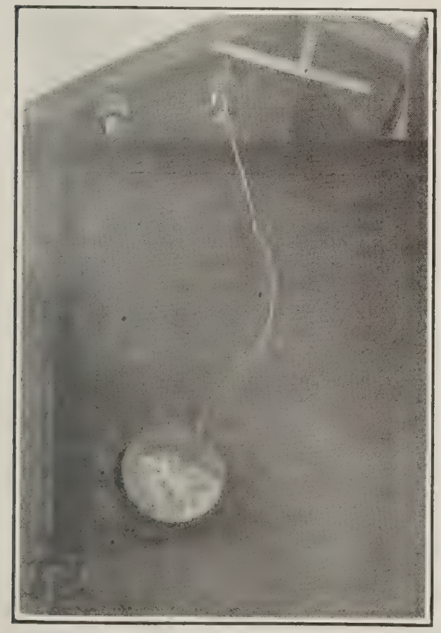
When safely out of the locomotive and on a bench, two bolts at each end release the frame section, and the armature is completely free to be repaired, without a chain ever having touched it, and within half the time usually required to perform this operation.

## Whistle Warns Engineer If Fan Slows Down

Simplicity, and a dependency on unfailing natural forces are points to be admired in any mechanical device. The old saying, "Nature abhors a vacuum," and the never-ending struggle of "Mother Earth" to pull everything closer to her bosom, explain the action of the whistle-blowing devices used on the two mine fans located near the tipple of the Woodward Iron Co.'s mine at Mulga, Ala.

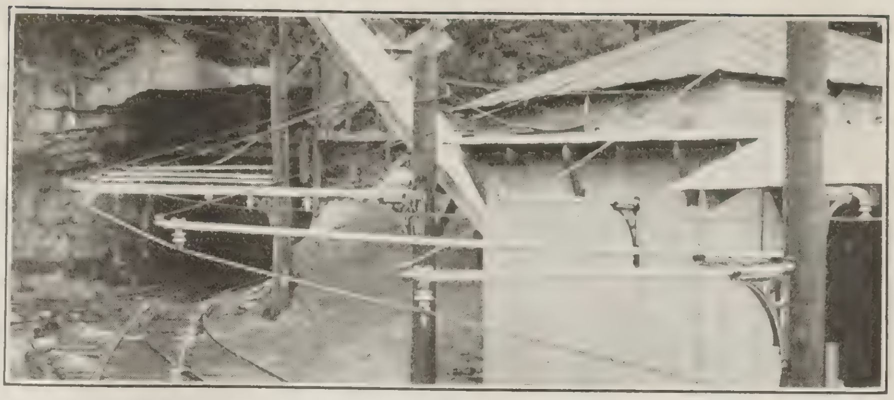
The whistles call the power house engineer if for any reason either fan should stop. Each fan is equipped with both steam-engine and motor drive. Square-jaw clutches provide for changing quickly from one drive to the other.

The alarm device is shown in the photograph. A hole was cut in the fan housing and a short, 6-in. diameter nipple attached by means of a standard flange. The end of the nipple is covered by a piece of oak 8 in. in diameter by 2 in. thick, to which the whistle wire is fastened. This wooden block is held over the opening by atmospheric pressure. The end of a nail projecting slightly out of the side of the block, so as to rest on the bottom side of the nipple, aids in keeping the block from working off due to vibration. Any appreciable reduction in vacuum allows the block to tip sidewise and fall off, thus blowing the whistle.



**Wood Block Falls If Fan Slows**

The fan operates exhausting. In order to show the 6-in. opening beneath, the wooden block was pushed slightly to one side. The wire extending from the upper arm of the bell crank goes to the steam whistle.



**Permanent Trolley Construction at a Tennessee Mine**

At this mine operated by the New Caryville Coal Co., Carryville, Tenn., the outside trolley is supported by pipe bracket arms fastened to large locust poles. Standard cast-iron brackets and regular outer-end castings are used in connection with 1½-in. galvanized pipe. On the curves, as many as three arms are fastened to each pole.

## Simple Mistake Holds Up Important Work

Often the troubles encountered in putting a new piece of equipment in service are caused by some simple mistake which has passed unnoticed until hunted down. This was well illustrated by the failure to obtain proper voltage on one of our power lines because of an error in making a tap connection.

At one of our mines, during the first part of December, 1924, when snow was beginning to fly, orders suddenly came to rebuild a power line which recently had been abandoned. The line had originally been used to supply electricity for a fresh-water centrifugal pump located half a mile from the main road.

When the line was taken down the plan was to drive the pump by steam until details of a more elaborate electrical system could be worked out. In September, when the anthracite strike was declared, the supply of fuel was cut off and recourse to electricity was necessary.

Men were quickly summoned to reconstruct the power line. The old steel poles which had been taken down but a few months previous were again set in position on their original foundations. Because the line voltage now available was higher than that formerly used, 4x6-in. lumber was bolted to the poles to serve as crossarms to which new insulators were attached.

In a few days the line was completed and two transformers connected in open delta were put in position near the pump to reduce the voltage to that required by the motor. When all was ready, power was shut off the main line and the branch circuit was attached.

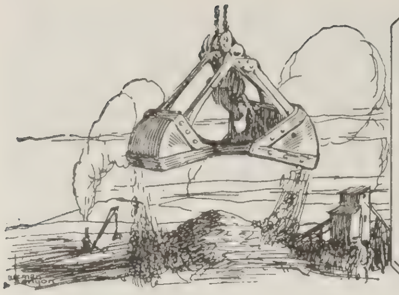
The following day the transformers were energized and a voltage test was made on the low tension side. Much to the surprise of everyone the phase readings were 450, 450 and 0 volts. After the high voltage wires were interchanged the readings were 450, 450 and 900 volts. Two primary wires were again reversed and the indications became 450, 450 and 0.

**Wrong Connection Caused Trouble**

When the branch circuit was connected to the main supply line two of the tap circuit wires were attached to the same main power conductor. This error caused much delay.

As the transformers were "borrowed horses," having been leased, it was thought that there was something internally wrong with one of them. However, it was noticed that the voltage readings obtained during the test did not bear the familiar 1.73 ratio to one another when the windings of three-phase systems ordinarily get mixed up. All indications were that one single-phase voltage was either neutralizing itself or doubling itself. This really was the case, the lineman having connected two of the branch circuit wires to one of the main supply line conductors, as shown in the accompanying illustration. Thus a puzzling difficulty which was easily caused was quickly remedied after about a day's loss of time.

M. A. THOMAS,
Hazleton, Pa. Engineer.



# Production And the Market

## Outlook Brightens as Trade Marks Time; Hard Coal Substitutes Firmer

As might have been expected by close observers of coal-market activities, business during the last week has been marked by the usual year-end tendency to mark time while plans are in preparation for a fresh start, with the possibility of facing new problems and conditions with the dawning of a new year. Needless to say, the year just closing has brought to the trade its share of disappointments in the way of blasted hopes, due in many instances to grandiose expectations of a happy hunting ground based upon the belief that the suspension of mining in the anthracite field would bring about a mad scramble for coal of any kind by panic-stricken consumers.

### Public Profits by Experience

The usually wise old gentleman of hallowed memory who characterized the public as an ass no doubt would be greatly surprised if he could now observe the comparatively indifferent attitude of hard-coal consumers, a large proportion of whom laid in fuel in advance of the strike or cheerfully turned to substitutes when their customary fuel was unobtainable at normal prices—quite a contrast from the distraught atmosphere prevailing during previous upheavals. In addition to the satisfaction of successfully combating a vexing problem and avoiding discomfort many will enjoy a considerable saving on their fuel bills. An interesting chapter in the drama remains to be written, of course, and this has to do with whether a new agreement terminating the strike if and when arrived at can be formulated that will give sufficient assurance of uninterrupted operations to enable the producers to win back the trade they have lost.

A touch of cold weather beginning early last week served to preserve a semblance of firmness in the price situation, and a further drop in temperature later brightened the outlook considerably. The softening tendency of almost record coal production also is feeling the counteracting effect of curtailed running time due to observance of the holidays.

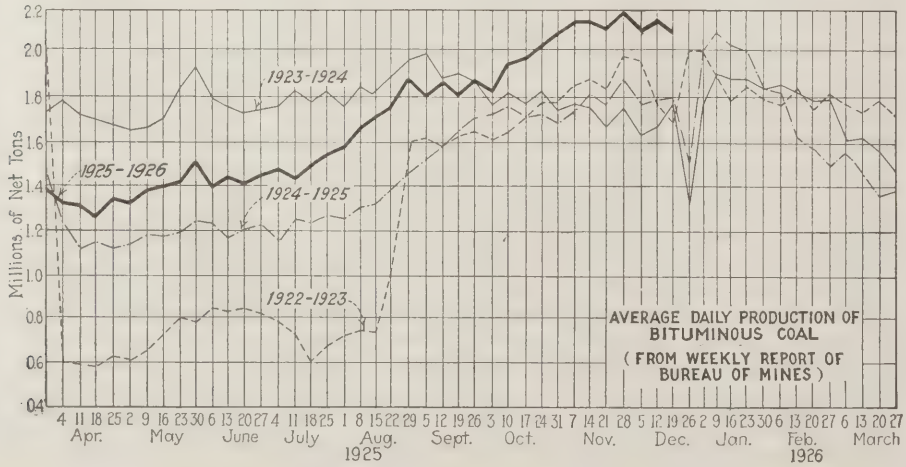
Activity in anthracite substitutes seems to have taken a new lease of life since Governor Pinchot's efforts for peace showed a likelihood of dragging a while before getting anywhere. Coke demand and prices continue their recent upturn. It is too early as this is written to be able to say whether this week's conference of operators and union leaders presages an early resumption of work at the mines or just a renewal of the indoor hammer throwing.

### Output Hovers Over 12,500,000 Tons

Output of bituminous coal during the week ended Dec. 19 is estimated by the Bureau of Mines at 12,600,000 net tons, a decline of 314,000 tons from the total for the preceding week but nearly 1,800,000 tons above that of the corresponding week of last year. Anthracite production in the week ended Dec. 19 totaled 55,000 net tons, compared with 64,000 tons in the previous week. Hard-coal output during the calendar year to Dec. 19 is 62,064,000 tons, or about 29 per cent less than in the corresponding period of 1924.

*Coal Age* Index of spot prices of bituminous coal stood on Dec. 28 at 178, the corresponding price being $2.16, compared with 179 and $2.17 respectively on Dec. 21.

Dumpings of coal at Hampton Roads during the week ended Dec. 24 totaled 446,093 net tons, as against 457,157 tons in the preceding week.



### Estimates of Production

(Net Tons)

**BITUMINOUS**

| | 1924 | 1925 |
|---|---|---|
| Dec. 5 | 10,831,000 | 12,868,000 |
| Dec. 12 (*a*) | 10,873,000 | 12,914,000 |
| Dec. 19 (*b*) | 10,814,000 | 12,600,000 |
| Daily average | 1,802,000 | 2,100,000 |
| Cal. yr. to date | (*c*) 465,668,000 | 506,293,000 |
| Daily av. to date | 1,566,000 | 1,697,000 |

**ANTHRACITE**

| | 1924 | 1925 |
|---|---|---|
| Dec. 5 | 1,814,000 | 62,000 |
| Dec. 12 | 1,772,000 | 64,000 |
| Dec. 19 (*b*) | 1,867,000 | 55,000 |
| Cal. yr. to date | (*c*) 87,811,000 | 62,064,000 |

(*a*) Revised since last report. (*b*) Subject to revision. (*c*) Minus two days' production to equalize number of days in the two years.

### Midwest Trade in Depths

Though there were a few days of cold weather last week, the Midwest market is duller than it has been for three months. Dealers are holding off purchasing until after the first of the year. The running time in the Illinois and Indiana fields has been very poor, some mines running not more than two days a week, and there are heavy accumulations of "no bills" on track. This does not worry the operators much, however, as they feel that the first real cold snap will clean up these quickly. Prices in the Illinois and Indiana fields are being held firm, as it is doubtful whether the coal could be moved even if a concession were made in price. While every operator has difficulty in moving prepared coal, there is quite a demand for fine coal, which is, however, very limited. Prices on this coal have gone up considerably, screenings bringing as high as $2 for Franklin County, $1.75 for Fourth Vein Indiana, and $1 for west Kentucky.

West Virginia operators are offering their coal at unheard of prices to keep their mines going. When 4-in. lump is offered as low at $1.85, conditions are not at all healthy. However, they all figure on a break that is bound to come with a change in the weather.

The Pocahontas operators have been hit the hardest. Whereas they were getting $4.25 for prepared sizes a year ago, today they are begging for business and $3 and even less, has been quoted quite frequently. Wholesalers who specialize in Pocahontas coal have no difficulty in placing orders with large operators at $3.25 for lump, egg and nut, and the majority of the operators are running their mines three or four days a week at the most.

Seasonable weather is beginning to move southern Illinois coals that have been dragging. Lump, of course, is beginning to move first, and this is pretty well cleaning up "no-bill" lump on track in the Williamson and Franklin County fields. There is some call for egg, but nut and screenings are slow, although screenings have been pretty well cleaned up recently while the other sizes were sluggish. Railroad tonnage is fairly good from the shaft mines and some is moving from the strip mines. Car supply is good, movement of coal fair and working time ranges from three to five days a week. Similar conditions exist in the Duquoin and Jackson County field. There has been no change in prices excepting those of the strip mines, which vary weekly in meeting competition.

In the Mt. Olive field there has been a sudden pick-up in both steam and domestic. This field was heavily taxed with "no bills" until last week, when these began to move out. Working time is about 50 per cent here and railroad tonnage has dropped off. In the Standard field, even with colder

## Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F.O.B. Mines

| Low-Volatile, Eastern | Market Quoted | Dec. 29 1924 | Dec. 14 1925 | Dec. 21 1925 | Dec. 28 1925† |
|---|---|---|---|---|---|
| Smokeless lump | Columbus | $3.85 | $4.25 | $3.50 | $3.25@$3.75 |
| Smokeless mine run | Columbus | 1.90 | 2.85 | 2.75 | 2.65@ 2.90 |
| Smokeless screenings | Columbus | 1.10 | 2.60 | 2.60 | 2.50@ 2.75 |
| Smokeless lump | Chicago | 3.75 | 3.60 | 3.10 | **3.25**@ **3.50** |
| Smokeless mine run | Chicago | 1.85 | 2.35 | 2.15 | *2.00@ 2.25* |
| Smokeless lump | Cincinnati | 3.75 | 4.25 | 3.60 | **3.50**@ **4.50** |
| Smokeless mine run | Cincinnati | 1.85 | 2.35 | 2.35 | **2.50**@ **2.65** |
| Smokeless screenings | Cincinnati | 1.25 | 1.85 | 1.85 | 1.75@ 2.00 |
| *Smokeless mine run | Boston | 4.05 | 5.00 | 5.00 | *4.90@ 5.10* |
| Clearfield mine run | Boston | 2.00 | 1.90 | 2.00 | *1.75@ 2.10* |
| Cambria mine run | Boston | 2.35 | 2.20 | 2.30 | *2.10@ 2.50* |
| Somerset mine run | Boston | 2.15 | 2.05 | 2.10 | *1.90@ 2.25* |
| Pool 1 (Navy Standard) | New York | 2.80 | 2.95 | 2.95 | 2.75@ 3.15 |
| Pool 1 (Navy Standard) | Philadelphia | 2.70 | 2.95 | 2.95 | 2.80@ 3.10 |
| Pool 1 (Navy Standard) | Baltimore | 2.30 | 2.20 | 2.20 | 2.20@ 2.25 |
| Pool 9 (Super. Low Vol.) | New York | 2.10 | 2.30 | 2.30 | 2.15@ 2.50 |
| Pool 9 (Super. Low Vol.) | Philadelphia | 2.15 | 2.30 | 2.30 | 2.20@ 2.45 |
| Pool 9 (Super. Low Vol.) | Baltimore | 1.70 | 2.00 | 2.00 | 2.00@ 2.05 |
| Pool 10 (H.Gr.Low Vol.) | New York | 1.95 | 2.05 | 2.10 | 1.90@ 2.25 |
| Pool 10 (H.Gr.Low Vol.) | Philadelphia | 1.75 | 2.05 | 2.05 | 2.00@ 2.15 |
| Pool 10 (H.Gr.Low Vol.) | Baltimore | 1.55 | 1.90 | 1.90 | 1.90@ 1.95 |
| Pool 11 (Low Vol.) | New York | 1.60 | 1.75 | 1.75 | 1.65@ 1.90 |
| Pool 11 (Low Vol.) | Philadelphia | 1.45 | 1.90 | 1.90 | 1.85@ 2.00 |
| Pool 11 (Low Vol.) | Baltimore | 1.45 | 1.65 | 1.65 | 1.60@ 1.70 |
| **High-Volatile, Eastern** | | | | | |
| Pool 54-64 (Gas and St.) | New York | 1.50 | 1.60 | 1.60 | 1.50@ 1.70 |
| Pool 54-64 (Gas and St.) | Philadelphia | 1.50 | 1.60 | 1.60 | 1.55@ 1.70 |
| Pool 54-64 (Gas and St.) | Baltimore | 1.45 | 1.65 | 1.65 | 1.65@ 1.70 |
| Pittsburgh sc'd gas | Pittsburgh | 2.40 | 2.85 | 2.65 | 2.60@ 2.75 |
| Pittsburgh gas mine run | Pittsburgh | 2.10 | 2.35 | 2.10 | 2.00@ 2.25 |
| Pittsburgh mine run (St.) | Pittsburgh | 1.85 | 2.05 | 2.05 | 2.00@ 2.10 |
| Pittsburgh slack (Gas) | Pittsburgh | 1.30 | 1.55 | 1.55 | 1.50@ 1.60 |
| Kanawha lump | Columbus | 2.30 | 2.60 | 2.25 | 2.00@ 2.50 |
| Kanawha mine run | Columbus | 1.55 | 1.70 | 1.70 | 1.55@ 1.85 |
| Kanawha screenings | Columbus | .95 | 1.20 | 1.20 | 1.15@ 1.25 |
| W. Va. lump | Cincinnati | 2.15 | 2.75 | 2.75 | *2.00@ 2.75* |
| W. Va. gas mine run | Cincinnati | 1.50 | 1.55 | 1.65 | *1.60@ 1.65* |
| W. Va. steam mine run | Cincinnati | 1.40 | 1.50 | 1.55 | *1.50@ 1.60* |
| W. Va. screenings | Cincinnati | 1.00 | 1.10 | 1.15 | *1.00@ 1.20* |
| Hocking lump | Columbus | 2.50 | 2.60 | 2.35 | 2.25@ 2.50 |
| Hocking mine run | Columbus | 1.60 | 1.80 | 1.85 | 1.75@ 2.00 |
| Hocking screenings | Columbus | 1.10 | 1.25 | 1.25 | 1.20@ 1.30 |
| Pitts. No. 8 lump | Cleveland | 2.40 | 2.35 | 2.35 | 1.95@ 2.75 |
| Pitts. No. 8 mine run | Cleveland | 1.85 | 1.85 | 1.85 | 1.80@ 1.90 |
| Pitts. No. 8 screenings | Cleveland | 1.40 | 1.45 | 1.45 | **1.50**@ **1.60** |

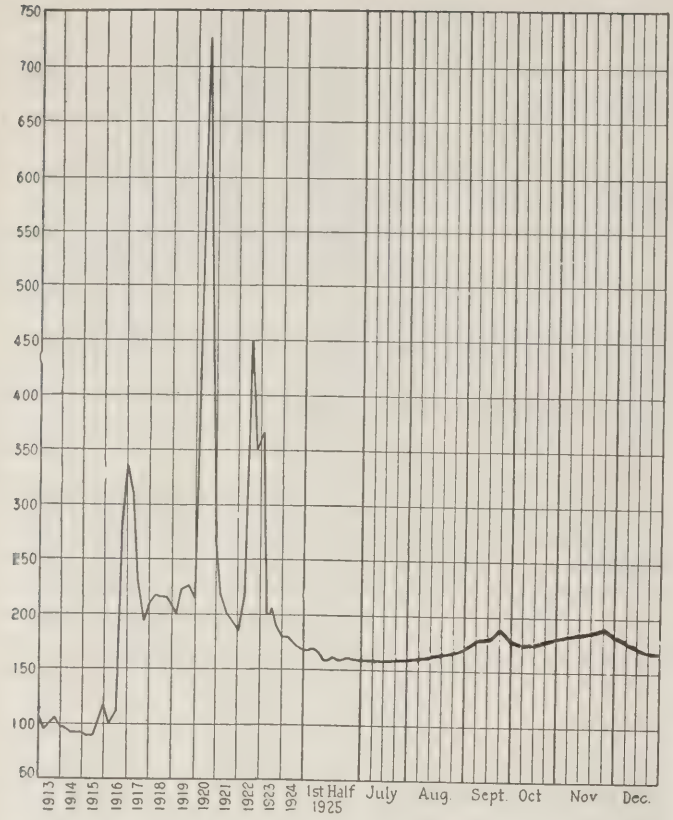
| Midwest | Market Quoted | Dec. 29 1924 | Dec. 14 1925 | Dec. 21 1925 | Dec. 28 1925† |
|---|---|---|---|---|---|
| Franklin, Ill. lump | Chicago | $3.35 | $3.50 | $3.35 | $3.25@$3.50 |
| Franklin, Ill. mine run | Chicago | 2.35 | 2.50 | 2.50 | 2.35@ **2.65** |
| Franklin, Ill. screenings | Chicago | 1.90 | 1.85 | 1.85 | 1.75@ **2.00** |
| Central, Ill. lump | Chicago | 3.00 | 3.00 | 2.85 | 2.75@ **3.00** |
| Central, Ill. mine run | Chicago | 2.20 | 2.30 | 2.30 | 2.25@ **2.35** |
| Central, Ill. screenings | Chicago | 1.90 | 1.40 | 1.40 | 1.35@ **1.50** |
| Ind. 4th Vein lump | Chicago | 3.35 | 3.10 | 3.00 | 2.75@ **3.25** |
| Ind. 4th Vein mine run | Chicago | 2.35 | 2.35 | 2.30 | 2.25@ **2.35** |
| Ind. 4th Vein screenings | Chicago | 1.85 | 1.85 | 1.85 | 1.75@ **2.00** |
| Ind. 5th Vein lump | Chicago | 3.00 | 2.50 | 2.50 | 2.35@ **2.65** |
| Ind. 5th Vein mine run | Chicago | 2.10 | 1.95 | 1.95 | 1.85@ **2.10** |
| Ind. 5th Vein screenings | Chicago | 1.70 | 1.40 | 1.40 | 1.35@ **1.50** |
| Mt. Olive lump | St. Louis | 3.00 | 2.85 | 2.85 | 2.75@ **3.00** |
| Mt. Olive mine run | St. Louis | 2.35 | 2.00 | 2.00 | 2.00 |
| Mt. Olive screenings | St. Louis | 1.10 | 1.75 | 1.75 | 1.75 |
| Standard lump | St. Louis | 2.75 | 2.40 | 2.40 | 2.35@ **2.50** |
| Standard mine run | St. Louis | 1.95 | 1.80 | 1.80 | 1.75@ **1.90** |
| Standard screenings | St. Louis | 1.05 | .85 | .85 | .75@ **1.10** |
| West Ky. block | Louisville | 2.35 | 2.10 | 2.00 | 1.85@ **2.15** |
| West Ky. mine run | Louisville | 1.55 | 1.35 | 1.35 | 1.25@ **1.50** |
| West Ky. screenings | Louisville | 1.10 | .95 | .95 | **.90**@ **1.10** |
| West Ky. block | Chicago | 2.35 | 2.05 | 2.00 | 1.75@ **2.25** |
| West Ky. mine run | Chicago | 1.50 | 1.25 | 1.25 | 1.15@ **1.35** |
| **South and Southwest** | | | | | |
| Big Seam lump | Birmingham | 2.85 | 2.75 | 2.75 | $2.50@**$3.00** |
| Big Seam mine run | Birmingham | 1.70 | 2.10 | 2.10 | 2.00@ **2.25** |
| Big Seam (washed) | Birmingham | 1.85 | 2.30 | 2.30 | 2.10@ **2.50** |
| S. E. Ky. block | Chicago | 2.50 | 3.25 | 3.10 | *2.75@ 3.25* |
| S. E. Ky. mine run | Chicago | 1.45 | 2.15 | 2.15 | *1.75@ 2.00* |
| S. E. Ky. block | Louisville | 2.50 | 3.25 | 3.00 | *2.50@ 3.25* |
| S. E. Ky. mine run | Louisville | 1.35 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Louisville | .95 | 1.25 | 1.10 | **1.00**@ **1.35** |
| S. E. Ky. block | Cincinnati | 2.25 | 2.85 | 2.85 | 2.75@ 3.00 |
| S. E. Ky. mine run | Cincinnati | 1.45 | 1.60 | 1.60 | 1.50@ 1.75 |
| S. E. Ky. screenings | Cincinnati | 1.00 | 1.10 | 1.15 | *.95@ 1.25* |
| Kansas lump | Kansas City | 5.00 | 5.00 | 5.00 | 5.00 |
| Kansas mine run | Kansas City | 3.10 | 3.10 | 3.10 | 3.00@ 3.25 |
| Kansas screenings | Kansas City | 2.50 | 2.30 | 2.30 | 2.25@ 2.35 |

* Gross tons, f.o.b. vessel, Hampton Roads.
† Advances over previous week shown in **heavy type**; declines in *italics*.

## Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

| | Market Quoted | Freight Rates | Dec. 29, 1924 | | Dec. 21, 1925 | | Dec. 28, 1925† | |
|---|---|---|---|---|---|---|---|---|
| | | | Independent | Company | Independent | Company | Independent | Company |
| Broken | New York | $2.34 | ............ | $8.00@$9.25 | ............ | ............ | ............ | ............ |
| Broken | Philadelphia | 2.39 | ............ | 9.15 | ............ | ............ | ............ | ............ |
| Egg | New York | 2.34 | $8.50@$8.75 | 8.75@ 9.25 | ............ | ............ | ............ | ............ |
| Egg | Philadelphia | 2.39 | 9.45@ 9.75 | 8.80@ 9.25 | ............ | ............ | ............ | ............ |
| Egg | Chicago* | 5.06 | 8.17@ 8.40 | 8.08 | $9.50@$10.00 | $8.03@$8.25 | $9.50@$10.00 | $8.03@$8.25 |
| Stove | New York | 2.34 | 9.75@10.25 | 9.00@ 9.50 | ............ | ............ | ............ | ............ |
| Stove | Philadelphia | 2.39 | 10.10@10.75 | 9.15@ 9.50 | ............ | ............ | ............ | ............ |
| Stove | Chicago* | 5.06 | 8.80@ 9.00 | 8.53@ 8.65 | 10.00@11.00 | 8.48@ 8.80 | 10.00@11.00 | 8.48@ 8.80 |
| Chestnut | New York | 2.34 | 9.75@10.25 | 8.75@ 9.40 | ............ | ............ | ............ | ............ |
| Chestnut | Philadelphia | 2.39 | 10.00@10.75 | 9.25@ 9.40 | ............ | ............ | ............ | ............ |
| Chestnut | Chicago* | 5.06 | 8.61@ 9.00 | 8.40@ 8.41 | 10.00@11.00 | 8.50@ 8.75 | 10.00@11.00 | 8.50@ 8.75 |
| Pea | New York | 2.22 | 4.50@ 5.50 | 5.50@ 6.00 | ............ | ............ | ............ | ............ |
| Pea | Philadelphia | 2.14 | 5.75@ 6.00 | 6.00 | ............ | ............ | ............ | ............ |
| Pea | Chicago* | 4.79 | 5.36@ 5.75 | 5.36@ 5.95 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 | 5.50@ 6.00 |
| Buckwheat No. 1 | New York | 2.22 | 2.00@ 2.75 | 3.00@ 3.15 | ............ | ............ | ............ | ............ |
| Buckwheat No. 1 | Philadelphia | 2.14 | 2.50@ 3.00 | 3.00 | ............ | 2.50@ 3.00 | ............ | 2.50@ 3.00 |
| Rice | New York | 2.22 | 1.90@ 2.25 | 2.00@ 2.25 | ............ | ............ | ............ | ............ |
| Rice | Philadelphia | 2.14 | 2.00@ 2.25 | 2.25 | ............ | ............ | ............ | ............ |
| Barley | New York | 2.22 | 1.30@ 1.60 | 1.50 | ............ | ............ | ............ | ............ |
| Barley | Philadelphia | 2.14 | 1.50 | 1.50 | ............ | ............ | ............ | ............ |
| Birdseye | New York | 2.22 | 1.40@ 1.75 | 1.60 | ............ | ............ | ............ | ............ |

*Net tons, f.o.b. mines. †Advances over previous week shown in **heavy type**; declines in *italics*.



**Coal Age Index of Spot Prices of Bituminous Coal F.O.B. Mines**

| | 1925 | | | 1924 |
|---|---|---|---|---|
| | Dec. 28 | Dec. 21 | Dec. 14 | Dec. 29 |
| Index | 178 | 179 | 182 | 171 |
| Weighted average price | $2.16 | $2.17 | $2.20 | $2.06 |

This diagram shows the relative, not the actual, prices on fourteen coals, representative of nearly 90 per cent of the bituminous output of the United States, weighted first with respect to the proportions each of slack, prepared and run-of-mine normally shipped, and second, with respect to the tonnage of each normally produced. The average thus obtained was compared with the average for the twelve months ended June, 1924, as 100, after the manner adopted in the report on "Prices of Coal and Coke; 1913-1918," published by the Geological Survey and the War Industries Board.

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weather, there is no great change. A little more coal is moving but there is still a surplus of all sizes available. Working time ranges from three to four days a week and prices are about the cost of production. Railroad tonnage shows some improvement in this district. With colder weather coming and decreased tonnage at the working mines, there is likely to be a shortage before long, which may boost prices.

Colder weather has stimulated the St. Louis market to some extent and this is best evidenced in the pick-up of wagonload steam, which got off to a good start last week. Carload steam is fair, a few plants putting in a little storage and other plants cleaning up for inventory. Country steam is quiet, a little moving to Kansas City, and some steam nut to Omaha and some cheap priced coal to Chicago and the Twin Cities. Domestic locally is fairly good on middle-grade coals. Standard also shows considerable movement while smokeless and anthracite are slow and coke moving fairly well. Country domestic is good, everything considered. All sizes are moving in proportion and there is a fairly good country demand for coke. Locally the coke supply is pretty well cleaned up excepting what is being held and reserved for January, and local shippers have nothing to offer for Northern or Eastern shipments. No change in prices.

### Outlook Bright in Kentucky After Holidays

Cold weather and snow early last week in Kentucky along with usual holiday retail business brought some demand from retailers on coal rolling, or on local tracks, and it is believed that with production lower as a result of the holiday season, there is a good chance that prices will be higher by 25c. a ton soon, if the present weather lasts.

There appears to be an easing up in steam demand over the holiday or inventory period, some industrial plants slowing down their output. Heating demand is picking up and the utility companies are using increased supplies.

Prices are firm on all western Kentucky sizes, and in fact a trifle stronger on mine-run and screenings. In eastern Kentucky prepared has been a trifle weaker on account of West Virginia competition and lower quotations.

Principal quotations on eastern Kentucky 4-in. block are $2.50@$3.25, but some stock is quoted higher. Lump and egg are around $2.15@$2.50, some quotations being $2.25@$2.75; nut, $2@$2.50; mine-run, $1.50@$1.75; screenings, $1@$1.35. In western Kentucky 6-in. block is $1.85@$2.15; lump and egg, $1.75@$2; nut, $1.35@$1.50; screenings, 90c.@$1.10. Western Kentucky mine-run is firmer, some houses quoting at $1.25, but not much stock is to be had at under $1.35 and some is at $1.50 or better. Western Kentucky screenings are scarce and commanding better prices.

### Northwest Trade Unchanged but Firm

The Duluth-Superior market is firm and unchanged all through the bituminous list. The feature in the trade continues the heavy demand for Pocahontas and other smokeless coals as substitutes for anthracite. Pocahontas lump, egg and nut are quoted at $8.50 and mine-run at $5.50. Anthracite prices are firm and just as they have been since early last summer. On account of the greater use of substitutes and mild weather conditions it is now figured that anthracite will be available upon this market in a limited way up till early in February.

Shipments of coal from the docks are keeping well up to the average for the season though the weather has been comparatively mild during the last ten days. A substantial improvement in the movement after the opening of the new year is expected, as retailers and the larger consumers are reported to be carrying comparatively small stocks. Orders booked for early January shipment are said to have reached a good total.

An encouraging feature is the better interest shown by independent iron operators on the Minnesota ranges. Larger tonnages of steam coal are being supplied to utilities on account of low water. Industrial demand is expected to show marked expansion early in the new year.

With anthracite out of the reckoning, the fuel market in Milwaukee seems to have steadied for the weeks of real winter which are now at hand. The demand is brisk because of the weather, and of course may be expected to become more lively as the mercury dips. Coke has taken the place of anthracite and is steady at $15 for range, $14 for nut and $12 for the pea size.

Autumn business in the Twin Cities has been steady, with a gradual gain toward former conditions. Until there is some method of readjustment of inequalities of freight charges, the industrial situation is bound to be restricted and of limited activity. The retail situation is good. Buying is steady and constant, and the weather so far has been free from extreme changes that would bring about a rush of orders to be delivered at once.

### Southwest Has Partial Pick-Up

Kansas lump, which had accumulated on tracks, started moving with the return of cold weather, and the tracks soon were cleared. Arkansas, however, did not fare so well. There the mines continue to add to their record of idle time. Arkansas semi-anthracite lump is moving slowly, with no immediate prospect of improvement; mine-run is easy, and screenings are short. The Arkansas market is not expected to improve until some time after the first of the year, when bins filled early in the fall have begun to get low. Arkansas prices are unchanged at $6@$6.50 for lump; $2.75@$3.50 for mine-run and $2@$2.25 for screenings. Kansas nut has been easy, with screenings a little short. Kansas mines have lost little time this season.

The Colorado market appears to be a little soft due to warm weather in Missouri River territory. Domestic orders are being held back as bins are pretty well stocked. Production in Colorado in November was 1,167,000 tons compared with 988,000 tons for the same month a year ago. The average number of men employed in the mines was 11,829 and the number of days worked per mine was 157.9.

The market served by the Utah mines, which has been quiet for several weeks, is improving with more seasonable weather. Working time at the mines for the past week was a little above 50 per cent. A leading retailer reports a better market for domestic lump than straight lump. It is estimated that there were about 300 "no bill" cars on the tracks this week. Slack is a little scarce, but not as a result of market conditions so much as short working time at the mines. Demurrage rules were recently suspended, but the "no-bill" rule is in force again, which means that loaded cars are regarded as cars on hand when empties are apportioned by the railroads.

The metal mining and smelter industries and the railroads are most active in the market now. There is an abundance of labor at the mines, and many men are turned away regularly.

### Smokeless Revives in Cincinnati

Any bright spot to be found in a glum situation on the Cincinnati market is due to the way smokeless has been acting. For a month the skids seemed well greased for low-volatile prices, but just before Christmas the brakes seemed to hold and, even better, there was a sign of a rebound. Most of this is traceable to demand from the East after the futility of Governor Pinchot's efforts for peace in the anthracite field became apparent. Mostly nut and egg were wanted, with Canada partaking of the demand. With shutdowns and other conditions helping, nut went up to $4.50 for spot, egg climbed over the $4 mark with $4.25 paid for first-grade Pocahontas. Lump, usually the strongest of the preferred, still lags, though it bettered itself by 25c. Mine-run with holiday shutdowns in prospect, stiffened, some tonnage going as high as $2.65. Slack still is trying to find itself with no change.

Overproduction—shown glaringly in the American Railway Association report of 13,862 loads passing through the Cincinnati gateway, or an increase of 555 cars on an overstuffed market—explains why there have been some marked reductions in price for high-volatile domestic sizings. Refusals have been coming in from many points, Michigan being, possibly, the worst offender. Distress coal again is setting the spot price, dragging other good fuel along with it. Some lump went below $2, some egg below $1.75, weakening straight sales also. In contrast to this, mine-run and slack are holding up well. About the only break in the latter is in Kentucky low grades, some of which have sold down to 90c. under pressure of competition.

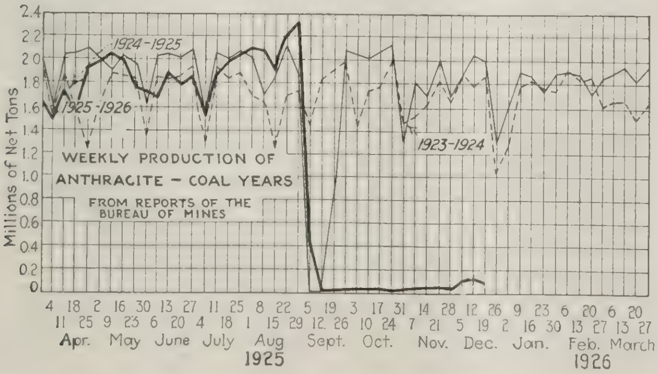
Retail trade shows little or no change other than the spurt for small deliveries caused by snow and cold weather just before Christmas. River business continues in an even channel.

Demand for domestic grades has been rather dull in Columbus and vicinity during the past week. Dealers are pretty generally stocked and householders are going slow in placing orders, but retail prices have not declined. There is a considerable amount of free coal on the market and the tonnage of consignment fuel is increasing not only in Columbus but in Toledo and Detroit.

Large steam users are buying for current needs only. There will be little doing in contracting before March. Utilities are good purchasers and iron and steel plants are also in the market. Screenings are holding up exceptionally well.

Production in the southern Ohio field averages about 25 per cent of capacity, with the Pomeroy Bend district showing up the best.

Market conditions in eastern Ohio are more sluggish. Screenings prices have advanced to $1.50@$1.60, other quotations being soft. Most of the mines closed from Thursday till Monday. Production fell away the week before. As retailers are fully stocked and steam buyers holding off, operators are pessimistic as to the immediate future.



### Conditions Quiet at Pittsburgh

Demand for domestic coal from the regular territory of the Pittsburgh district has been rather poor. Railroad and industrial demand have been moderate, consumption being fully as great as could be expected. There is but little outside demand for Pittsburgh district coal. The call of the East, such as it is, now runs to "nut" coal. On the East's last buying the movement was chiefly in "egg" but it seems the operators had altogether too large eggs in mind, sizes running up to 4-in.

With the figures for the last week in December estimated, production by central Pennsylvania coal mines will total 43,500,671 tons in 1925, which is four million tons more than in 1924. The year started off well and then fell into a slump, with production reviving following the strike of miners in the anthracite field, which was largely responsible for the increased production. Approximately 60 per cent of the total production was in mines working on a non-union basis, or under the 1917 scale. The remainder was produced from mines under the Jacksonville agreement.

Prices, except on coke, remain the same from week to week. Coke shows a little increase, egg sizes being quoted at $7.50@$8; run-of-ovens, $6.50@$7; lump coal, $3.50@$4; egg, $4.50@$5; nut, $4.25@$4.75; mine-run, pool 1, $2.75@$2.95; pool 71, $2.50@$2.75; pool 9, $2.35@$2.50; pool 10, $2.20@$2.35; pool 11, $1.70@$2; pool 1, $1.60@$1.70.

At Buffalo the whole trade is so completely at the bottom that even an effort to vary the regular bituminous quotations has been useless. Just now there is a scarcity of slack, but nobody is getting much, if any, more for it, and the chances are that the mine-run output will take up any real shortage in that line. Quotations are $1.60@$1.75 for Fairmont lump, $1.40@$1.50 for mine-run, $1.25@$1.40 for slack; $2.25@$2.50 for Youghiogheny gas lump, $2@$2.25 for Pittsburgh and No. 8 steam lump, $1.30@$1.60 for all slack; $1.75@$2 for Allegheny Valley mine-run; $6.50@$6.75 for Cambria County smokeless; $12 for egg coke, at the curb.

### Dullness Lifts Slightly in New England

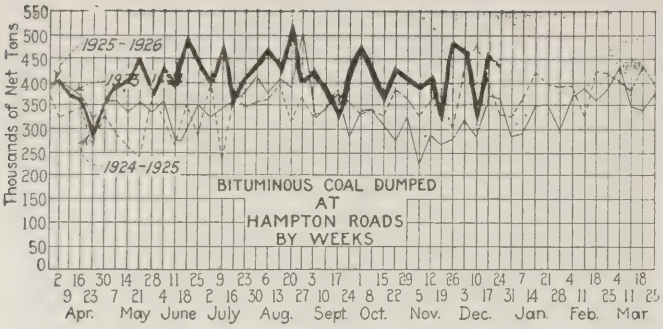
With more seasonable weather the demand for steam coal is somewhat improved in New England. Retailers are again mildly interested in the spot market and transient business in general is noticeably less dull than a week ago. Curtailed production in the smokeless districts has reduced the volume at and en route to Hampton Roads piers, while shipments on contract have increased sufficiently to influence current prices to a moderate degree. In no direction is there brisk inquiry; even for prepared Pocahontas and New River there is only lukewarm request. As a whole, however, the market is in a more hopeful situation than since early November.

A few outlying communities are taking on bituminous and coke in anticipation of running out of anthracite by the end of January, but the aggregate tonnage is not large and there is little to build on in such quarters. If hard-coal mining is resumed by Jan. 15 there will still be a reasonably good demand for substitutes, but the trend will be away from them in favor of anthracite as soon as the latter can be had. The January market will depend somewhat on the volume the hard-coal shippers are able to pour into this territory. For industrial uses there will be no sharp request; the high rate of production since Oct. 1 has anticipated anything like emergency needs during the next 30 to 60 days, and after the holiday season the trade expects only ordinary business. Doubtless steps will be taken to prevent ruinously low prices for high-grade coals.

At Hampton Roads spot coal of No. 1 grade may be had at $5 or slightly less f.o.b. vessel, and at Boston, Providence and Portland on cars the accepted figure per gross ton is $6.50. Moderate congestion at the railroad wharves is in part responsible for this firmer tendency, although more and more household users are turning to mine-run rather than to lump and egg as a substitute for anthracite.

All-rail from central Pennsylvania there is only fair demand for steam coal, and then only for the more favorably known grades. For screened egg of navy standard quality, $5@$5.25 seems to be obtainable, while run-of-mine is quoted at $2.25@$2.50.

Pocahontas and New River prepared coal is being offered all-rail at a wide range of prices. On the same day the trade is offered lump and egg from one operation at $4, from another source a $3 price is named. The aggregate



tonnage of smokeless coals coming all-rail to this market is by no means heavy.

### Steady Movement of Mine-Run at New York

Mine-run bituminous coal continues to move steadily in the New York market, prices remaining firm and practically unchanged. Prepared sizes from central Pennsylvania were in fair call last week, while egg and nut sizes of Pocahontas and New River were in better demand than during the previous few weeks. Nut fared better than egg, being quoted at $4.25@$4.75 as against $4@$4.50 for the larger size.

Short running time at the mines during the holidays is not expected to alter the situation in the trade. There is sufficient coal on tracks to take care of any rush of orders without causing any undue excitement.

Shippers of Southern coals into this market look for increased buying of those coals after Jan. 1, when the new freight tariff affecting the New York and New Jersey markets goes into effect. The new rate averages about $1.10 above the present Clearfield rate of $3.09 to this market.

An end-of-the-year quietness seems to have overtaken the Philadelphia market, but at the first of the year buying should begin with renewed vigor. Despite the quietness of the market spot prices continue fairly stable. For one thing there is no "distress" coal hanging around. There is a little talk about contracts for the first of the year, but with only a small amount of such business closed thus far.

With the strong pick-up in the coke trade there has been a much better inquiry for sized bituminous fields. Slack has been somewhat scarce during the past ten days, due to the falling off in the call for three-quarters and sized coal. However, it would not be surprising to see a considerable increase in slack with the better demand for sized fuel.

The Christmas lull brought no special regrets this year to the soft-coal trade at Baltimore. There is ample coal at tide and awheel between the mines and this point to take care of all needs promptly and, with the exception of a two-weeks flurry in prepared sizes immediately after the onset of the anthracite strike, prices have not varied more than 10 to 15c. f.o.b. mine since Sept. 1. This is undoubtedly due to the moderate home call, despite the use of bituminous as a substitute for anthracite in the East and because of the slump in the export trade. During the past week mines No. 1 and 12 of Consolidation Coal Co. were reopened and in the Georges Creek region of western Maryland there has been an improvement in production, the November figures being 20,000 tons in excess of those of October.

The commercial market at Birmingham has eased up noticeably in the past week or so, inquiry having fallen off materially and the clamor for deliveries having become less insistent. Movement has been exceptionally heavy for several weeks and it is presumed that all large consuming interests are comfortably well fixed on reserves. The mines are in no immediate need of bookings on which to operate after the holidays, and opinion in the trade is that prospects for the first quarter are satisfactory as far as steam coal is concerned. Buying for bunkers has not abated, though it is not quite as active as it has been, and inquiries are still coming in for extra tonnage.

The lull in the domestic market is more pronounced than in the steam trade. Little new business is being taken on at present, as weather conditions have been unfavorable. A light snow followed by lower temperatures late in the week will no doubt stimulate buying temporarily if the cold spell is of sufficient duration, as stocks in the hands of dealers and consumers are light.

Quotations have undergone no change the last week and seem fairly well entrenched against decline in the near future.

Inquiry from northern and western points for coke has improved in the past week, and demand continues good in local territory. Foundry ranges $6@$6.50, gas-house, $6@$6.50, and egg and nut, $4.75@$5.50 per ton ovens.

Coal output in the week ended Dec. 12, which reached 450,000 tons as reported to the Alabama Mining Institute, broke the record of this field for a similar period with the possible exception of one week in 1923, on which the records are not exactly clear.

### Hard-Coal Substitutes Stiffen

Lower temperatures in New York last week strengthened the demand for anthracite substitutes, coke heading the list with better prices. Some manufacturers are said to be refusing orders because they are sold up. Beehive coke is quoted at $8.25@$8.75. Most retail dealers are awaiting continued colder weather before increasing their buying orders, as consumers are unwilling to put in large tonnages of substitutes in view of the various efforts being made to bring the strike to an end.

Nothing but No. 1 buckwheat in the hard-coal list is to be found in the harbor and most of it is not of very good quality, according to the dealers. Quotations range from $9 to $10 alongside, with a comparatively small tonnage offered. Arrivals of British anthracite have not been heavy.

At Philadelphia a strong buying market is once more developing in coke, and many shippers of this fuel are sold up for weeks ahead, and this includes byproduct and beehive, although there is still a fair offering of the latter to be had, but mostly merely crushed and unsized. Anthracite steam coal users while they have received the last of the company storage coal, have not as yet shown any inclination to buy bituminous coal to eke out their supplies, but this seems certain not to be postponed much longer.

While Baltimore anthracite dealers are watching developments in that field with interest, they are pushing the sale of substitutes for hard coal. There is a wide difference of opinion among dealers as to how much of the trade will be regained by the hard-coal interests.

Activity continues in the coke trade at Buffalo, though it has not become as pronounced as was expected. Probably the many reports of an early settlement of the strike have kept people from buying coke to a considerable extent. They want to buy anthracite or they look for coke to be cheaper as soon as the strike is settled, no matter if new-mined anthracite is slow in appearing. The most favorable state of the trade is that coke prices, the real standby in an emergency, have not gone up lately, as was considered likely.

### Connellsville Coke Market Firmer

No sooner had most of the uncovered blast furnaces made first-quarter contracts on the recent softening in the coke market (at $3.75 to $4 as reported, but is seems one or two contracts were at under $3.75) than the spot market became very active, partly because of blast furnaces buying extra lots to insure supplies over the holidays but largely by reason of much more Eastern buying.

Yard crushed coke, which had sold at down to $4.25 and then had brought up to $6, has now touched $8, and better prepared coke probably has gone up to $9. The best preparations are hardly obtainable at all.

Regular run-of-oven blast-furnace coke, which a week ago was reportable as advanced from $3.50 to $4, has since gone up to $6, at which there have been bids in the past few days. While blast-furnace interests purchased freely at the lower prices, at least two belated buyers came in last week, paying $5.25 and $5.75 respectively.

Most of about 600 cars loaded on track without destination a short time ago was taken up without much advance in price, and then operators began stiffening sharply in their quotations, getting the advances without difficulty. By this time substantially all the accumulation is taken up, while production is faced with a decrease. Supplies of coke in the East are now quite well worked off and it seems there has to be buying in proportion to the consumption.

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## Freight Car Loadings

| | Cars Loaded | |
|---|---|---|
| | All Cars | Coal Cars |
| Week ended Dec. 12, 1925 | 1,008,824 | 191,884 |
| Previous week | 1,020,873 | 191,821 |
| Week ended Dec. 13, 1924 | 957,424 | 192,394 |

# Foreign Market And Export News

## Bookings and Inquiry Brisk in British Market; Work at Mines Steadier

The British coal market continues steady with traces of firmness in several departments. Collieries are receiving a moderate amount of inquiry over the early part of January. Pits are working more regularly than for several months. The South Wales output has improved to nearly 900,000 tons a week, and prospects are held out of a million-ton level being attained over the next few weeks. French demand is still disappointing, though inquiry tends to expand for later delivery; Italian orders are fairly numerous, and South America is now taking heavy deliveries. Coaling depots are quieter, but there is a moderate movement to the United States, Spain and Portugal.

The prompt market has been much firmer at Newcastle-on-Tyne, thanks to more tonnage being available, and quotations are again more in accordance with actual business. For forward delivery there is quite a healthy demand, but the actual transactions are not so good, as sellers are holding firmly for the current quotations into January. The coke sections, after a slight period of depression, have firmed up wonderfully well, and cargoes are being ordered for the United States as well as for the Continent. This, in conjunction with a better tone in the iron and steel trade, is having a stimulating effect upon coking coals. Gas coals are firm and steady for six weeks ahead. Steams are rather erratic.

Output by British collieries during the week ended Dec. 12, according to a special cable to *Coal Age*, totaled 5,430,000 gross tons, compared with a production of 5,210,000 tons in the preceding week.

## Trade Softens All Round At Hampton Roads

Hampton Roads business last week was dull, with prices weakening, and the general holiday laxity falling on the trade. Movement in all directions was comparatively small, and there was a likelihood of continued dullness for two weeks.

Many mines serving this section already have agreed to shut down until Jan. 4, but many factories promise to do the same thing, so the net result is not expected to be a strengthening of the market to any appreciable extent. Shippers reported good surpluses at the mines, and that they expected comparatively light trade until the second week of the new year.

## Stronger Industrial Demand In Belgian Market

A very slight improvement in demand for industrial coals has appeared in the Belgian market. This is due to a partial suspension of imports of German fuels and to fears of a general strike if no agreement on the wages of Belgian miners is possible. In the Borinage, coals are still being stocked, but in the other fields there is a slightly better demand.

Sales of house coals, notwithstanding the cold and snowy weather, however, seem to be less active than they were a month ago. This is mostly due to the fact that, since the Belgian coal owners exacted from their French customers payments in Belgian francs instead of French francs, as heretofore, the demand from France for Belgian household fuels has receded.

## Industrial and Domestic Trade Active in French Market

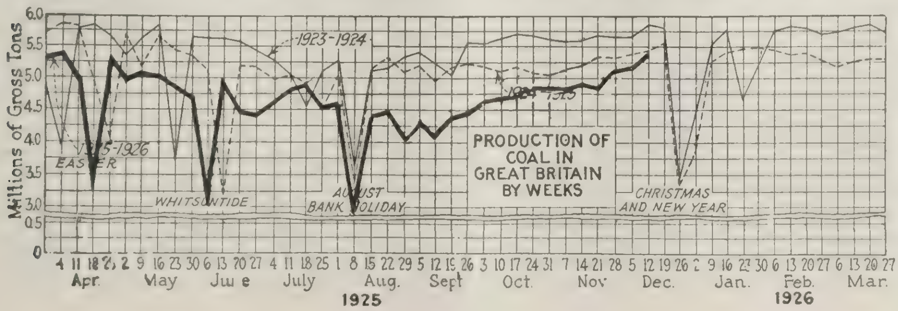
The collieries of the Nord and Pas-de-Calais, in France, are particularly busy; their output of industrial grades is well sold and for household coals their market continues to be marked by the greatest activity.

Since the prices for the sale of Belgian coals in France have been adjusted to take into account the depreciation of French currency compared to the Belgian franc quotations are based on an exchange rate of 100 French francs to 83.15 Belgian francs, with a variation of a few centimes among the various collieries.

Arrivals of empty trucks at the collieries have been more regular of late. Canal freight rates are still high, being quoted on the basis of 28 fr. Bethune-Paris.

Deliveries of indemnity coke from the Ruhr to the O. R. C. A. during the first eight days of December totaled 69,712 tons, or a daily average of 8,090 tons.

The prices of anthracite sized coals delivered by Germany on reparation account have been raised by 10 fr. per ton—the nuts to 220@235 fr., the cobbles to 215@230 fr., according to grade and destinations. The increase went into effect Dec. 16.



### Export Clearances, Week Ended Dec. 26, 1925

FROM HAMPTON ROADS

| | Tons |
|---|---|
| For New Brunswick: | |
| Ital. Str. Vallescura, for St. John | 6,951 |
| For French West Indies: | |
| Dan. Str. Nordfarer, for Fort de France | 5,493 |
| For Jamaica: | |
| Br. Str. Rowanpark, for Kingston | 2,204 |
| For British West Indies: | |
| Br. Str. Watsness, for Castries | 4,212 |
| For Cuba: | |
| Br. Str. Berwindmoor, for Havana | 9,615 |
| Nor. Str. Bratland, for Cienfuegos | 3,038 |
| Br. Str. Mabay, for Havana | 2,743 |
| Br. Str. European, for Havana | 4,694 |
| For West Africa: | |
| Ital. Str. Delia, for Dakar | 8,053 |
| For Virgin Islands: | |
| Nor. Str. Bur, for St. Thomas | 6,216 |
| For Argentina: | |
| Dutch Str. Ameland, for Puerto La Plata | 4,520 |
| For Porto Rico: | |
| Amer. Str. Manta, for San Juan | 2,336 |

FROM PHILADELPHIA

| | |
|---|---|
| For Cuba: | |
| Nor. Str. Sokndal, for Havana | —— |

FROM BALTIMORE

| | |
|---|---|
| For Hawaii: | |
| Am. Str. Wm. A. McKenny, for Honolulu, Hawaii | —— |
| For Cuba: | |
| Br. Str. Maidenhead, for Daiquiri (coke) | —— |

### Hampton Roads Coal Dumpings*

(In Gross Tons)

| | Dec. 17 | Dec. 24 |
|---|---|---|
| N. & W. Piers, Lamberts Pt.: | | |
| Tons dumped for week | 140,533 | 146,756 |
| Virginian Piers, Sewalls Pt.: | | |
| Tons dumped for week | 113,545 | 104,621 |
| C. & O. Piers, Newport News: | | |
| Tons dumped for week | 154,098 | 146,921 |

*Data on cars on hand, tonnage on hand and tonnage waiting withheld due to shippers' protest.

### Pier and Bunker Prices, Gross Tons

PIERS

| | Dec. 19 | Dec. 26† |
|---|---|---|
| Pool 1, New York | $5.75@$6.00 | $5.75@$6.00 |
| Pool 9, New York | 5.10@ 5.30 | 5.10@ 5.30 |
| Pool 10, New York | 4.80@ 5.15 | 4.80@ 5.15 |
| Pool 11, New York | 4.55@ 4.75 | 4.55@ 4.75 |
| Pool 9, Philadelphia | 5.05@ 5.30 | 5.05@ 5.30 |
| Pool 10, Philadelphia | 4.80@ 5.10 | 4.80@ 5.10 |
| Pool 11, Philadelphia | 4.50@ 4.75 | 4.50@ 4.75 |
| Pool 1, Hamp. Roads | 4.85@ 4.95 | *4.75@ 4.85* |
| Pool 2, Hamp. Roads | 4.75@ 4.80 | *4.50@ 4.60* |
| Pools 5-6-7, Hamp. Rds. | 4.50@ 4.55 | *4.30@ 4.40* |

BUNKERS

| | Dec. 19 | Dec. 26† |
|---|---|---|
| Pool 1, New York | $6.00@$6.25 | $6.00@$6.25 |
| Pool 9, New York | 5.35@ 5.55 | 5.35@ 5.55 |
| Pool 10, New York | 5.05@ 5.40 | 5.05@ 5.40 |
| Pool 11, New York | 4.80@ 5.00 | 4.80@ 5.00 |
| Pool 9, Philadelphia | 5.30@ 5.55 | 5.30@ 5.55 |
| Pool 10, Philadelphia | 5.10@ 5.35 | 5.10@ 5.35 |
| Pool 11, Philadelphia | 4.75@ 5.00 | 4.75@ 5.00 |
| Pool 1, Hamp. Roads | 4.95 | *4.85* |
| Pool 2, Hamp. Roads | 4.80 | *4.60* |
| Pools 5-6-7, Hamp. Rds. | 4.55 | *4.30@ 4.40* |

### Current Quotations British Coal f.o.b. Port, Gross Tons

Quotations by Cable to *Coal Age*

| Cardiff: | Dec. 19 | Dec. 26† |
|---|---|---|
| Admiralty, large | 23s.@23s.6d. | *22s.6d.@23s.6d* |
| Steam smalls | 13s. 6d. | 13s.6d. |
| Newcastle: | | |
| Best steams | 15s.3d. | **15s.3d.@18s.** |
| Best gas | 16s.6d. | 16s.6d. |
| Best bunkers | 16s.6d. | *15s.6d.@16s.6d* |

† Advances over previous week shown in **heavy type**; declines in *italics*.

# News Items From Field and Trade

## ALABAMA

The Gulf States Steel Co., of Birmingham, is reported to have acquired 36,000 acres of coal land in Tuscaloosa County, near Gadsden, which it will develop.

## ILLINOIS

A. E. Lewis, of Worden, has been elected Madison County mine inspector for another year. The Board of County Supervisors voted unanimously for Lewis' retention in his post. No other application for the job was received.

The Black Star Coal Co. resumed work early in December at its mine at Logan, in the vicinity of Benton, after an idleness of several months.

William Haywood, top foreman at the Indiana & Illinois Coal Corporation's mine No. 10, Nokomis, has been appointed Assistant Director of Mines and Minerals of Illinois. Mr. Haywood was for a number of years assistant general superintendent of the Indiana & Illinois corporation mines near Nokomis.

## INDIANA

American No. 1 mine near Bicknell has resumed operations. It has been down since Nov. 20 when thirty trip riders and motormen went on strike unauthorized by the United Mine Workers. The strike forced 500 other men to quit work. The trouble was caused by the refusal of the mine boss to return one trip rider to work after the man had threatened the boss's life with a revolver in a dispute over working conditions.

The Patoka Coal Co. will begin operations on the Harris lease near Petersburg soon. The company has purchased a railroad locomotive and other equipment to aid in moving the mined coal to spur lines.

A suit involving $7,000,000 worth of coal was filed in Pike County Circuit Court at Petersburg, Dec. 17, by the Mercantile Commercial Bank of Evansville, receiver of the Vulcan Coal Co. The suit asks that property that formerly belonged to the Vulcan company he returned to the receiver, that the transfers made from the Vulcan company to the Southwestern Indiana Coal Corp. be set aside and that the contract between the corporation and the Enos Coal Co. be annulled. Former stockholders of the Vulcan company allege that the transfer of property from that company to the Southwestern Indiana corporation was irregular. Property involved includes some of the most valuable coal stripping lands in southwestern Indiana.

A new production record for one week for southern Indiana shaft mines was set by Francisco Mine No. 2, near Princeton, in the week ended Dec. 19, when 12,487 tons of coal was hoisted, an average of 2,081 tons per day. The coal was loaded into 232 railroad cars. The mine now employs 350 men and has a monthly payroll of $60,000.

## IOWA

Peace reigns again between members of the Des Moines local of the United Mine Workers, district No. 13, and the executive board of the district following a fortnight of what several Des Moines miners characterized as "enmity." Members of the district gave a vote of confidence to their officials after several hours' discussion of the agreement between the Hartford mine management and themselves.

A 7-ft. seam of high-grade coal recently was discovered near Odebolt while drilling a test oil well. The coal was found at a depth of 498 ft. under 27 ft. of cap rock and 12 ft. of shale.

## KANSAS

The Black Diamond Coal Co., of Pittsburg, has applied for a Kansas charter. The capitalization is $10,000. The incorporators are H. J. Feiden, R. D. Wilson, Walter Bennett and William Whetstone, all of Pittsburg. They recently opened a small deep mine two miles east of Pittsburg and have purchased an additional lease for sinking another mine.

Ira Clemens, one of the leading coal operators of the southeastern Kansas field prophesied in an address before the United Commercial Travelers at Pittsburg recently that within less than a half century coal will be pulverized at the mines near Pittsburg and blown to Kansas City through pipe lines for fuel for steel mills and other industrial plants. Small electric generating plants to burn Kansas coal will dot the field, he believes. With new methods close to 100 per cent of the coal in a working will be brought out instead of the present average of 65 per cent.

Unofficial figures, but obtained from authoritative sources, indicate that Kansas coal production for 1925 will run close to 6,000,000 tons, the largest since 1920. In addition to these figures a "statistics hound" has found that since 1884, the first year in which output reached 1,000,000 tons, the Kansas field has marketed 182,600,914 tons of coal, exclusive of the current year. The first official record of coal production was in 1869, when the output was 36,891 tons. The production peak was reached during the World War, when 7,250,000 tons was mined in 1917 and again in 1918. In 1919, 5,400,312 tons was produced; 1920, 6,130,341 tons; 1921, 4,028,624 tons; 1922, 3,518,243 tons; 1923, 4,650,478 tons; 1924, 4,491,069 tons.

## KENTUCKY

On Christmas eve James Hatcher, of the James Hatcher Coal Co. at Big Shoal, five miles below Pikeville, presented to each of his 400 miners a box of candy.

The Red Star Coal Co., Whitesburg, has leased 50 acres of land and will develop it.

The West Kentucky Coal Co., Sturgis, a subsidiary of the North American Co., expects in the near future to construct a power transmission line approximately 40 miles long, to join its Earlington power plant with the Sturgis power plant.

## MINNESOTA

The city ordinance of Minneapolis forbids the use of other than smokeless coal in railroad locomotives, but it has seldom been enforced in any degree. Now it is proposed to amend the ordinance to permit the use of other grades, but with time limits as to the extent and amount of dense smoke. Railroad men have insisted that they could not use smokeless in locomotives.

## NORTH DAKOTA

Records on North Dakota lignite shipments filed with the state railroad board of that state, show a growing market for it. In the week ending Oct. 24, 1924, 26,647 tons was shipped within the state and 2,854 tons shipped outside the state. For the corresponding week of 1925 the shipments within the state had grown to 43,155 tons and the outside shipments to 4,308 tons.

## OHIO

More of a feeling of optimism pervades the coal field of Jefferson County in view of recent developments, after a period of about 18 months' idleness. The large mines of the United States Coal Co. at Plum Run and Bradley have resumed operations with reasonable expectation that they will be operating at capacity before long. Improvement is in evidence also at the mines of the Jefferson Coal Co. at Piney Fork. The Y. & O. mine at Glen Robbins is operating once again, as is the Clarkson mine at Dunglen. The Hanna mines at Dunglen are in operation once again and the New Pittsburgh mines at Ramsey and Rhodesdale are increasing their output. It is noticeable that the deep mining operations are improving to a greater extent than the stripping.

Nine men died in the Webb mine of the Cambria Collieries Co. the night of Dec. 22 after a rock fall had brought down a feeder line, causing a short-circuit that ignited a body of gas. Two more men were overcome and rushed to a hospital at Bellaire. Fire followed the blast. Only 79 men were in the mine at the time.

Improvements which will greatly increase output are now under way at the stripping mines which the Harmeyford Coal Co. recently purchased from the Kehota Mining Co. in the heart of the Hocking Valley. A new tipple and track will be put in at Baird's Furnace, New Straitsville, and when they are completed a million tons of 10-ft. coal will be opened up. The other mines are the Saltillo plant, near Redfield, and the McCuneville mine, near Shawnee. The Harmeyford company was formed when the organization took over the Kethota property. The name is coined from the names of the officers of the company: William S. Harman, of Columbus, president; John Winefordner, Zanesville, vice-president, and E. R. Meyer, of Zanesville, secretary-treasurer. The field operations are under the direction of Mr. Winefordner. The company has an acreage of 2,500, the property being worth $1,500,000. The output is now 2,000 tons a day.

## PENNSYLVANIA

After a meeting of the board of directors of the Lehigh Valley Coal Co. on Dec. 22 it was announced that the regular dividend of the company had been declared. An initial dividend of $1.25 was declared a year ago and another of $1.25 was declared last June, presumably placing the stock on a $2.50 annual basis.

The Snowdon Coke Co., of Pittsburgh, has contracted with the Marion Machine, Foundry & Supply Co., of Scottdale, for the erection of a coke crushing and screening plant for the sizing and preparation of coke. Heretofore this company has not shipped any coal or prepared sizes of coke, confining its activities to the production of furnace and foundry coke.

Coke having taken a new lease of life, the H. C. Frick Coke Co. has fired up the Davidson plant, with 200 ovens, which had been idle for the last two years. The Franklin Coke Co. has resumed operations at its 30-oven plant at Tippecanoe, after several weeks' idleness. The Stern Coal & Coke Co., which banked its 132 ovens a few weeks ago, also has resumed.

C. E. Cowan, of Greensburg, chief engineer of the Jamison Coal & Coke Co., has been appointed consulting engineer of new construction work by the Snowdon Coke Co. at its Mt. Hope plant, at Linn, near Brownsville.

More than 100 men interested in industry in the Monongahela River district, including coal companies and steel concerns, were present at a hearing before the U. S. Engineer at Pittsburgh Dec. 23, in an effort to persuade the engineer not to recommend the abandonment of the proposed canalization project in the Youghiogheny River. The movement to keep the canalization project a live issue was started by the Pittsburgh Coal Co., which has large coal deposits along the Youghiogheny.

The Pittsburgh Coal Co. last week evicted ten families from their houses at the Montour No. 10 mine, at Library. The statement of the company said the men were indebted for six months' rent and that the houses were needed for men who were at work.

The Rich Hill mine of the McClane Mining Co., at Canonsburg, is operating with about 25 per cent of its 450 men at work under the Jacksonville agreement, according to a statement by W. H. McClane. The company is only having some cleaning up done and some coal recovered that would otherwise be lost. Future operation, it was said, would depend on market development and other things.

After serving for 65 years in various capacities in the anthracite mining industry, John Harvey, of Hazelton, recently stepped down as a member of the Taxpayers Association of Hazelton. The association is composed of anthracite mining companies and for years has been administering the road taxes in Hazelton, Foster and Banks Township. Mr. Harvey started as a breaker boy in the mines of the Hazelton field and for 29 years was superintendent of the Coleraine mine. John Crooks, superintendent of the Lattimer mines, has been named to succeed Mr. Harvey as president of the association; A. B. Jessup, of the Jeddo-Highland Coal Co., has been named vice-president, and Scott Young, real estate agent for the Lehigh Valley Coal Co., will continue as secretary of the organization.

Two hundred miners employed at the mines of the Superior Coal Co. near Cheswick went back to work last week with the reopening of the mine, which was closed two weeks as a result of a cave-in in the shaft.

Pittsburgh and western Pennsylvania labor organizations will be assessed a portion of their wages on Jan. 7 to assist the striking anthracite and bituminous miners of Pennsylvania, it has been announced by P. T. Fagan, president of District No. 5, United Mine Workers. This is a result of the action taken by the American Federation of Labor, when William Green, president, made an appeal for funds.

Approximately 70,000 1-lb. boxes of candy were distributed during Christmas week by the Union Supply Co. at the mining plants of the H. C. Frick Coke Co. A "treat" to children of employees was given generally on Thursday.

**A Mine Fan House Down in New Mexico**

A part of the ventilation plant at Mine No. 6 of the Phelps-Dodge Corp., located at Dawson, N. M. This housing represents a high type of construction by a company which pays particular attention to its ventilation problems.

## WASHINGTON

Five underground men were killed and several overcome by carbon monoxide following a dust explosion in the Wilkeson Coal & Coke Co. mine in Wilkeson, Dec. 14. The explosion followed a shot to dislodge a boulder that had choked a steeply pitching chute. The report of Chief Mine Inspector William Reese shows that Assistant Foreman C. E. Farrell, who helped place the stick of dynamite on top of the boulder and mud it in according to the prevailing custom in "bulldozing" rocks, had tested for gas and found none before he lit the fuse and retreated. However, an explosion swept through part of the mine. There were evidences of coal dust in the section and Mr. Reese attributes the spread of the blast to that, although "the floors and walls of the crosscuts showed dampness and moisture, and, particularly in one crosscut, pools of water lay on the floor."

## WEST VIRGINIA

Dakota mine No. 41 of the Bethlehem Mines Corp. loaded 1,984 net tons of coal Dec. 22, a new record for 110 men employed at the plant.

"The Coal Smellers," an organization of officials of the J. H. Weaver coal interests in West Virginia, and their guests attended a banquet at the Waldo Hotel in Clarksburg, Dec. 19. More than forty-five employees of the Weaver mines in West Virginia—at Dawson, Rose Hill and Ironia—were present. James A. Jenkins, general superintendent, was the guest of honor, and F. M. McDaniel, of Clarksburg, was toastmaster. Among those who spoke at the banquet were Charles B. Johnson, Dr. H. A. Rosenthal and Dr. W. A. Thomason, of Clarksburg; Ralph H. Ely of Buchannon; E. D. Lyle of the New York Central R.R., R. E. Rankin, W. H. Schmeltzer and A. M. Grase of Pittsburgh, Pa., representing the Goodman Manufacturing Co., and G. L. Pettrey and Frank Haller of the Clarksburg Candy Co.

On Dec. 22 Governor Howard M. Gore of West Virginia announced the reappointment of Robert M. Lambie as chief of the state department of mines of West Virginia for the term of four years beginning Jan. 1. Mr. Lambie became head of the department of mines Feb. 14, 1920. He was appointed by former Governor John J. Cornwell to succeed W. J. Heatherman. The legislature early this year increased his salary from $5,000 to $6,000.

The Lanark Fuel Co., having equipped its mine with a new tipple and outdoor conveyor system, resumed operations on Monday, Dec. 21, after several months' inactivity. The company's tipple burned last March. Production is expected to reach 300 tons a day. Coal will be mined not only in the Sewell vein but in the Beckley seam as well.

P. J. McGraw, superintendent of Federal mine No. 1, at Grant Town, who recently removed to Fairmont, was presented with a gold watch on Dec. 17 by a number of workers.

On Dec. 19 for the first time in its history, the Baltimore & Ohio R.R. moved a mallet train out of the Fairmont yards over the Connellsville division. Sixty-five cars of coal were moved over the "Sheepskin." Mallet trains are almost exclusively run between Fairmont and the Keyser scales over the Alleghany Mountains, east of Grafton.

The Island Creek Coal Co. has awarded a contract to the Winter Homes Corp. of Huntington for the construction of 165 miners' houses at Holden. This is said to be one of the largest contracts for the construction of miners' dwellings which has been let in the state for several years.

The National Coal Mining Co., of Pittsburgh, Pa., has sold the Pollar mine in Lewis County, between Clarksburg and Weston, near McWhorter, to a company being formed by John P. Whelan, formerly of Cleveland, and at one time general superintendent of the Brady-Warner Coal Corp. plants. There are 1,400 acres of Pittsburgh and Redstone coal in the tract. The mine will be reopened about Jan. 15.

The Whyel Coke Co. with main offices at Uniontown, Pa., has sold Yukon mine, at Arnettsville, Monongalia County, to the Imperial Coal Corp. of New York City, for $1,000,000. The property has 2,000 acres of Pittsburgh coal and the company's present capacity is 1,000 tons a day. The new owners, it is said, will increase their daily capacity to 2,500 tons.

## ALASKA

Candle Creek lignite mine is producing 25,000 tons a year from a seam 88 ft. thick. Healy River Coal Co. has contracted to supply 25,000 tons a year to Fairbanks dredges. The Evan Jones mine, at Matanuska, has contracted for 150 tons a day to the Alaska Ry. Howard-Jensen mine started production in September and is supplying coal to coast points. The Alaska-Pacific Coal Co. has arranged to complete the Katalla Ry. and ship coal to Pacific Coast points.

## CANADA

T. M. Molloy, Commissioner of Labor and Industries for Saskatchewan and a member of the Lignite Board of Canada, has returned from a two months trip to Europe, the object of which was to have Saskatchewan coal tested in various types of carbonizers. He had tests made in three carbonizers in England, three in Germany and one in Czechoslovakia with a view of ascertaining by which method the best results could be obtained. Some of the tests brought out large quantities of tar and others oil. While in England, Mr. Molloy had the hearty co-operation of all British Research officials.

Word has been received at Regina, Sask., that large-scale briquetting tests conducted in Germany last summer with lignite from southeastern Saskatchewan have proved a technical success. Whether or not this means that the German process will be adopted in Canada will not be known until final results are studied. The report has been received by W. D. Worcester, a professor of Saskatchewan University, who was sent to Germany last summer in charge of 52 tons of lignite from the Taylorton district. The tests were conducted by Thyssen and Co. at Malheim-Ruby, and the Lurgi Co. at Frankfort.

# Traffic

### Hearing on Coke Rate Changes

The Coal, Coke & Iron Ore Committee, Central Freight Association territory, will hold a hearing in room 606 Chamber of Commerce Building, Pittsburgh, Pa., Jan. 7, 1926, at 10 a.m., on proposed changes in rates on coke, coke breeze, coke dust and coke screenings (the direct products of coal) from Ashland, Ky.; New Boston, Portsmouth and Ironton, Ohio, to stations in Michigan. The changes cover advances and reductions to bring about a proper relation with rates via all routes and with rates from other districts. Details of the proposed changes will be furnished promptly by the committee upon request.

### Seek Removal of Differential Against Ohio

The state of Ohio will join the Ohio coal operators in asking the Interstate Commerce Commission to reconsider its decision sustaining a differential freight rate schedule, favoring West Virginia and Kentucky over Ohio mining operations. An announcement to this effect recently was made by Attorney General C. C. Crabbe of Ohio. H. H. Griswold, First Assistant Attorney General, and John W. Bricker, special counsel in the office of the Attorney General, will act as special counsel in the case. The Attorney General's announcement was made following a conference with D. F. Hurd, Cleveland, and E. S. Ballard, Chicago, counsel for the Pittsburgh Vein Operators' Association of Ohio.

The Kalbaugh Coal Co., of Cumberland, Md., has made application to the Interstate Commerce Commission to have its rate on eastern coal shipments reduced. The concern operates a mine at Barnum, near Piedmont, Mineral County, W. Va., and it asks the commission for a lower rate than the mines further west, because the Baltimore, & Ohio R.R. does not have the expense of hauling its product over the Alleghany Mountains. At present all the mines of the Preston County fields, which include Tunnelton and other sections have the so-called Myersdale rate, which is 25c. less than the Fairmont rate. An Interstate Commerce Commission examiner will hear the application in Cumberland, Md., on Feb. 4.

# Obituary

**James R. Thomas**, 65, president of the Carbon Fuel Co., Cincinnati, Ohio, died Dec. 27 at his home in Charleston, W. Va. He was widely known in coal circles in Cincinnati, where he was a member of the Queen City Club and other organizations. In the late eighties he became purchasing agent for the Mt. Carbon Coal Co. and acquired holdings on Cabin Creek, which later were to be the scene of much coal activity. About twenty-five years ago he, with A. E. Humphries planned and built the long spur of railway line up Cabin Creek, which was connected with the Chesapeake & Ohio lines at Leeward. Through this Mr. Thomas was able to open and develop the coal lands which he owned on Cabin Creek. In order to market the product of this and other mining properties in the Kanawha fields the Kanawha Coal Co. was organized with main offices at Cincinnati. This selling organization was maintained until about twenty years ago, when Mr. Thomas established the Carbon Fuel Co.

**Andrew Cattanach,** for 35 years connected with the coal trade in the Twin Cities, died recently at his home in Minneapolis, Minn., aged 65 years. He was first connected with the C. G. Lewis Coal Co. in St. Paul. The business was afterward purchased by the Philadelphia & Reading Coal & Iron Co. and he remained with that company in varying capacities for a number of years. About five years ago he was made cashier of the Minneapolis office. The widow, a brother and three sisters survive.

## Coming Meetings

**Chicago Wholesale Coal Shippers' Association.** Annual meeting, Great Northern Hotel, Chicago, Ill., Jan. 6, 1926. Secretary, G. H. Merryweather, Temple Bldg., Chicago, Ill.

**American Wood Preservers' Association.** Annual meeting, Jan. 26-28, 1926, at Cleveland, Ohio. Secretary, E. J. Stocking, Chicago, Ill.

**Coal Club of Philadelphia.** Annual meeting, Jan. 28, 1926, at the Bellevue-Stratford Hotel, Philadelphia, Pa. Secretary, C. K. Scull, Philadelphia, Pa.

**Northeast Kentucky Coal Association.** Annual meeting, Jan. 28, 1926, at Ventura Hotel, Ashland, Ky. Secretary, C. J. Neekamp, Ashland, Ky.

**American Institute of Electrical Engineers.** Annual convention, Feb. 8-12, 1926, at Engineering Societies Bldg., New York City. Secretary, F. L. Hutchinson, 29 West 39th St., New York City.

**American Institute of Mining and Metallurgical Engineers.** Annual meeting, Feb. 15-17, 1926, at Engineering Societies' Building, New York City. Secretary, Dr. H. Foster Bain, 29 West 39th St., New York.

**The Rocky Mountain Mining Institute.** Winter meeting, Feb. 23-25, 1926, at Albany Hotel, Denver, Colo. Secretary, Benedict Shubart, Boston Building, Denver, Colo.

## New Companies

**The Cedar Coal Co.** was incorporated in Canon City, Colo., early this month, with a capital stock of $20,000, by B. M. Narron, Wm. Starret and P. Westwater.

**The Widwest Coal Co.** was incorporated in Colorado the first week in December, with a capital of $25,000, by S. W. Ackerman, of Grand Junction, and J. S. Chayney, N. Richards and D. Moschetti, of Palisades.

**The Westerik & Folkerts Coal Co.** was incorporated in Denver, Colo., the first part of December, with a capital of 50,000 shares of no par value by G. J. B. Westerik, P. S. Van Cise and others.

**The A. W. Hall Coal & Oil Co.** was incorporated in Denver, Colo., early in December, with a capital stock of 500 shares of no par value, by A. M. McNeil, F. A. Wachob and A. W. Hall.

**The Copen Creek Coal Mines, Inc.,** has been organized with a capital of $10,000 to operate at Copen, in the Braxton County field of West Virginia. Chiefly interested in the new concern are C. W. Flesher, Mary E. Flesher, Lucille Flesher, all of Gassaway, and J. K. Favison and J. K. Tosh, of Bower, W. Va.

## Association Activities

The annual meeting of the **Hazard Coal Operators' Exchange** will be held at Lexington, Ky., on Jan. 22, with a business meeting in the daytime and a banquet in the evening.

The annual meeting of the **New River Coal Operators Association,** held at Mount Hope, W. Va., Dec. 17, was attended by more than 100 operators. The officers' reports showed the organization in a flourishing condition. M. L. Garvey, general manager, Maryland-New River Coal Co., Winona, W. Va., was elected president; William McKell, vice-president; P. M. Snyder, treasurer, and S. C. Higgins, secretary and traffic manager. The executive committee chosen was as follows: G. H. Caperton, president of the New River Coal Co., Charleston; S. A. Scott, vice-president, New River Coal Co., MacDonald, W. Va.; William McKell, president, McKell Coal & Coke Co., Glen Jean, W. Va.; Ernest Chilson, vice-president and general manager, Raleigh Coal & Coke Co., Raleigh, W. Va.; R. E. Taggart, vice-president, Stonega Coke & Coal Co., Big Stone Gap, Va.; P. M. Snyder, president, Long Branch Coal Co., Mount Hope, and President Garvey. A general discussion of roads followed, during which it was decided that a large delegation representing the association—which in turn represents the heaviest tax payers in that section of the state—should wait upon the road commission with a definite plan of suggestions regarding the designation and building of much needed public highways for the whole southeastern part of West Virginia.

# New Equipment

## Combined Hanger Increases Circuit Efficiency

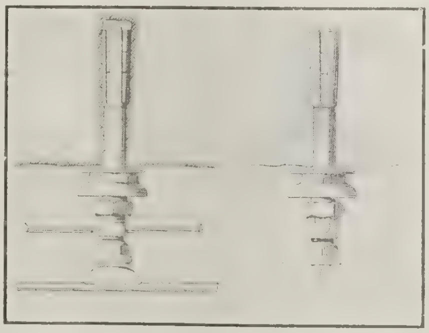
Necessity, justly famed as the mother of invention, not infrequently proves herself the grandmother of economy. Such was the case with the combined trolley and feeder-cable hanger shown in the accompanying illustration, which is the invention of C. E. Rogers, chief electrician of the Logan division of the West Virginia Coal & Coke Co., and which is being placed on the market by the Guyan Machine Shops.

Carrying the feeder cable along the side of the entry and joining it to the trolley outlet at considerable intervals introduces many disadvantageous features. Thus an appreciable difference may exist between the potentials of the wire and feeder while a jumping trolley may break the connection between the two. A side feeder also entails a separate line of supports and insulators with their necessary expense of insulation and upkeep.

In this new hanger the lower part or element is similar to that of the ordinary type being fitted with the usual jaws to grip the grooved trolley wire. The upper end of this element, however, is split or forked to receive the feeder. This is here inserted and the tightening of the nut binds the feeder in place and bonds it electrically to the trolley. The size of the feeder employed may range anywhere from a 4/0 wire to a 500,000-circ.mil cable. Either, or any intermediate size can be held securely.

### Lowers Costs, Increases Safety

By the use of a hanger such as this only one line of insulators and supports is used in a heading, the cost both of installation and upkeep being proportionately decreased. There is no danger of the connection between feeder and trolley wire being broken by contact with a "wild" trolley wheel or pole. Furthermore, the feeder and trolley are connected at frequent intervals assuring that both will be at practically the same potential at all points along their course.



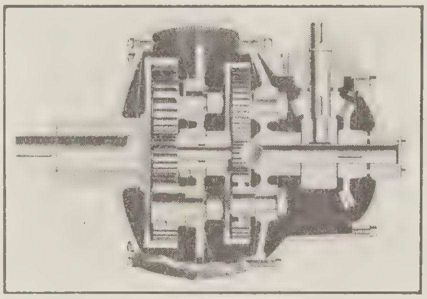
**Side and End Views of Hanger**

This device is practically an ordinary trolley hanger with added provision for supporting a feeder cable above it. The arrangement is such that a line of these hangers may be put in place without taking down or even seriously disturbing the trolley. If either trolley or feeder line becomes slack through stretching or otherwise they may be tightened both quickly and easily.

Most locomotive drivers blame the return for all the ills of low voltage. As a matter of fact the positive side of the circuit in many instances is quite as truly responsible for the low potential at the point where electrical energy is applied as is the negative. It is just as important, therefore, to reduce the losses in the trolley and feeder lines as in the rails. Efficiently copper-bonding the rails is not in itself enough to prevent severe electrical losses with their attendant evils. Over six miles of this kind of electrical construction has been installed during the past few months and is giving excellent satisfaction.

## New Right-Angle Drive Spur Reducers Save Space

In order to effect space economies impossible with straight-line motor drives, especially for installations where the driven machine is crowded against a wall or into a corner, Foote Bros. Gear & Machine Co. has brought out a new line of IXL right-angle drive spur reducers.



**It Is a Compact Unit**

This cut-away view of the new speed reducer shows the arrangement of gears and shafts—especially the bevel pinions at the high speed end—which permit of right-angle drive for tight corners where there is no space for straight-line mounting of the motor.

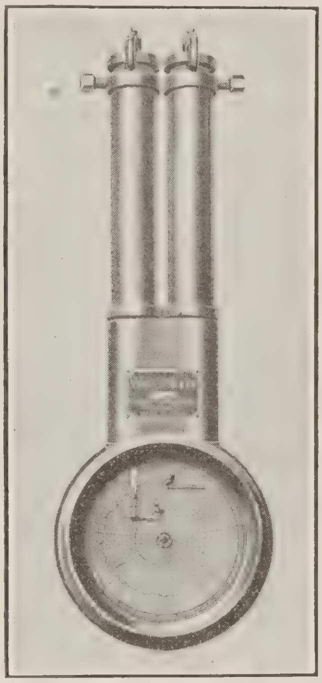
The new unit is similar in exterior appearance to the company's standard straight-line drive speed reducers, except that the high speed and low speed shafts project through the case at right angles to each other. This change in direction is accomplished by means of bevel or mitre gears mounted in the high speed end of the unit. A secondary bevel or mitre gear is mounted on the high speed driving shaft which is concentric with the low speed shaft.

The high speed pinion is integral with the high speed shaft and delivers the power through three idler gears set at 120-deg. angles to a large rotating integral gear. The internal gear is securely fastened to the slow speed shaft. The high speed pinion, together with the idlers, internal gear and slow speed shaft comprise the entire mechanism for a single reduction train which can be repeated in obtaining greater reduction ratios.

By changing the size of the pinion and internal gear and the relative size of the bevel gears in the high speed end, almost any desired relation may be obtained between the speeds of the two shafts. The manufacturers produce these right angle spur reducers in a large variety of standard sizes and reduction ratios, horsepowers ranging up to 150-hp. and reduction ratios up to 350 to 1.

## Waste Meter Continuously Indicates Boiler Losses

In any boiler plant the greatest loss sustained is that of the hot gases going up the stack. In order to measure accurately this loss the Uehling Instrument Co., of Paterson, N. J., recently has placed on the market a recording instrument known as a waste meter and shown in the accompanying illustration. This records both the temperature of the escaping flue gas and its content of carbon dioxide on the same chart. The corresponding loss may be read from a table furnished by the manufacturer.



**Shows Heat Losses**

This little instrument continuously indicates both the temperature of the flue gases and their content of carbon dioxide. A constant visual index is thus afforded the fireman of the conditions existing within the furnace.

Reduction of chimney losses involves both a decrease in temperature and an increase in the content of carbon dioxide of the products of combustion. With the aid of an instrument of this kind it is an easy matter for the fireman to control the air supply and to make the stack loss a minimum. This instrument embodies both a pyrometer and a gas analysis element.

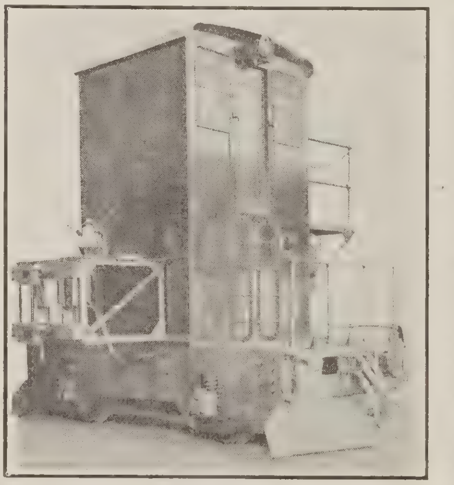
The pyrometric element works on the principle that any change in temperature of the flue gases will make a corresponding difference in the pressure of vacuum existing in a chamber into which flue gases at constant temperature and at actual stack temperature pour through two orifices under the action of a constant suction.

The gas analysis element is similar to that recording temperatures except that the gas is passed through a dry cartridge that absorbs the carbon dioxide. By these means two pens are actuated upon a single circular chart and both the temperatures and carbon dioxide content of the flue gases continuously recorded. Careful manipulation of the drafts is particularly necessary during peak load periods because at that time losses both from temperature and excess air are likely to be most severe. Visual indication of conditions existing in the furnace and boiler, made possible by the use of this instrument, do much to rectify errors in air supply and increase the overall efficiency of the entire equipment.

## High Locomotive Facilitates Coke Quenching

In the accompanying illustration may be seen a new type of locomotive recently placed on the market by the General Electric Co., of Schenectady, N. Y. This machine is intended for handling quenching cars in byproduct coke yards, particularly for transporting hot coke from the ovens to the quenching tower.

This locomotive is especially designed to facilitate these operations. A platform on the side enables the driver to leave his inclosed cab for purposes of observation. The cab itself is of the double-deck type and may be lined with asbestos as a protection from the heat of the ovens and coke. The projection or arm on the left side, upon which the bell is mounted, is the third rail collector, the third rail used at coke plants being usually suspended above rather than laid along the ground as in elevated and interurban lines. The locomotive is supplied with air-brake equipment, the pump also being used to supply air to the dumping mechanism on the quenching car.



**High Enough for Good Observation**

On the left is the arm carrying the shoes that collect current from the third rail. A slightly higher platform on the right serves for purposes of observation. The air pump not only furnishes air for the operation of the brakes but for the dumping mechanism on the quenching car as well.

## Publications Received

**The Industrial Museum,** by Charles R. Richards. The Macmillan Co., New York City. Pp. 117; 6 x 9½ in.; illustrated. Price, $3. A plea for the establishment of industrial museums in America. The author describes his trip to the four great European industrial museums in Paris, London, Munich and Vienna.

**Factors Affecting Production of Lump Coal,** by J. E. Tiffany and B. L. Lubelsky. Coal mining Investigations under auspices of Carnegie Institute of Technology, U. S. Bureau of Mines and Advisory Board of Coal Mine Operators and Engineers. Bulletin 19. Pp. 94; 6 x 9 in.; illustrated. Price, $1.

**Mechanical Safeguarads in Rotary Drilling,** by H. C. Miller. Bureau of Mines, Washington, D. C. Technical Paper 369. Pp. 38; 6 x 9 in.; illustrated. Price, 10c.

**Coal-Dust Explosions:** The Effect of Release of Pressure on Their Development, by H. P. Greenwald and R. V. Wheeler. Safety in Mines Research Board, Paper No. 14. H. M. Stationery Office, Kingsway, London, England. Pp. 12; 6 x 9½ in.; illustrated. Price, 3s. net.

**Mechanical World Year Book, 1926.** Emmott & Co., Ltd., Manchester, England. Price, 36c. Pp. 348; 4x6 in.; illustrated. New features introduced in this edition are sections on the Uniflow Engine, Fuel Economizers, Notes on Grinding, etc.

**A Study of Skip Hoisting at Illinois Coal Mines,** by Arthur J. Hoskin. Prepared under a co-operative agreement between the Engineering Experiment Station of the University of Illinois, the Illinois State Geological Survey and the U. S. Bureau of Mines. Price, 35c. Bulletin No. 151. Pp. 66; 6x9 in.; illustrated. Describes the results of an investigation into the advantage claimed for skip hoisting.

**Fifth Annual Report of the Federal Power Commission:** 1925, Washington, D. C. Pp. 209; 6x9 in.; parts I and II.

Report of the Mining Engineer and Agent of the Girard Estate in Schuylkill and Columbia Counties, Pennsylvania, for the Year 1924. Pp. 56; 6x9 in.; tables.

**Coal Statistics for Canada** for the Calendar Year 1924. Dominion Bureau of Statistics, Ottawa, Canada. Pp. 96; 6½x9½ in.; tables.

**The Support of Underground Workings in the Coal Fields of Scotland.** Safety in Mines Research Board Paper No. 12, H. M. Stationary Office, Adastral House, Kingsway, London, England. Pp. 24; 6x9½ in.

## Trade Literature

**Cleveland Worms and Gears.** The Cleveland Worm & Gear Co., Cleveland, Ohio. Bulletin No. 105. Pp. 15; 8x11 in.; illustrated. Dimension tables and drawings of standard gears and worm mountings are included, together with a list of gear ratios available on standard centers.

**Industrial Control Catalog.** General Electric Co., Schenectady, N. Y. Catalog 6001B, superseding all previous catalogs, with the exception of those dealing with railway, mine and industrial supplies and merchandise products. Pp. 1100; 8x10½ in.; illustrated. The catalog is thumb-indexed into 16 sections, some of which cover generation, wire and cable, distribution transformers, arresters, voltage regulators, switchboards and accessories, meters and instruments, motors, etc. The products are classified both by subjects and by catalog numbers in the indexes.

A convenient chart for the use of engineers who have occasion to calculate quantities connected with the expansion of steam is being distributed by the De Laval Steam Turbine Co., Trenton, N. J. The well-known Mollier diagram is printed upon a stiff sheet of bristol board, attached to which is a scale that can be broken off and used directly for measuring heat available, etc.

General Electric Co., Schenectady, N. Y., has issued a four-page folder describing and illustrating its single-stage centrifugal **air compressors.**

**Electrical Drives for Power Plant Auxiliaries** is the title of circular 7381, recently issued by the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. The circular is well illustrated.

**Sangamo Meters.** Sangamo Electric Co., Springfield, Ill. Bulletin No. 70. Pp. 23; 8x10½ in.; illustrated. Describes the Sangamo type H single and polyphase watt-hour meters.

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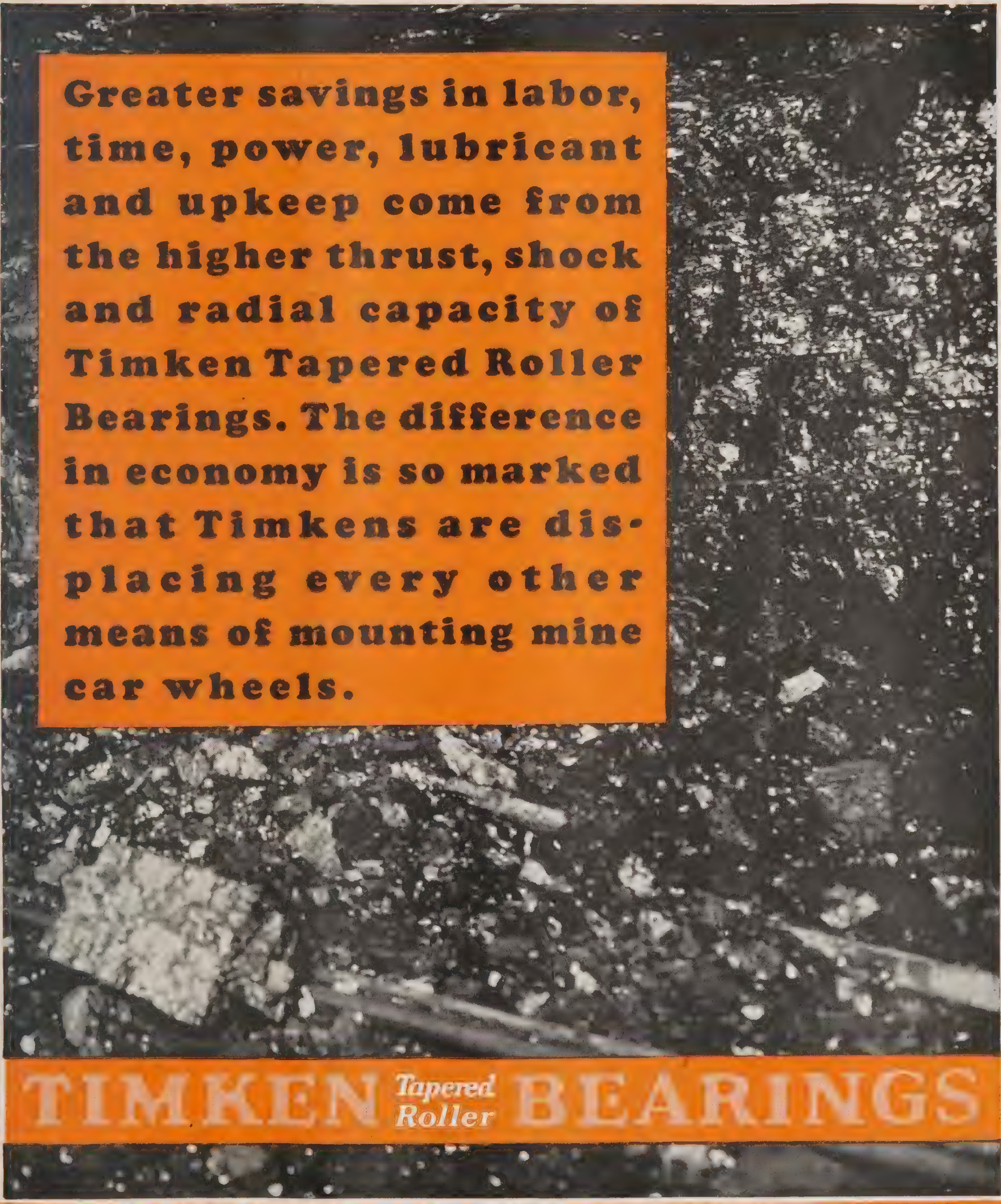
Jigging Conveyor in Alabama Mine Works Successfully—Page 915

# COAL AGE

*The World's Accepted Authority on Coal Mining*

JAN

McGraw-Hill Co., Inc.
December 31, 1925
Price 20 Cents per Copy

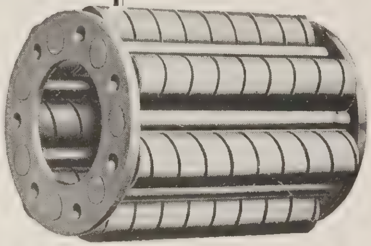


**Greater savings in labor, time, power, lubricant and upkeep come from the higher thrust, shock and radial capacity of Timken Tapered Roller Bearings. The difference in economy is so marked that Timkens are displacing every other means of mounting mine car wheels.**

TIMKEN *Tapered Roller* BEARINGS

# "I have succeeded"

said the purchasing official, with evident exultation, "in getting our next lot of mine cars cheaper than those we bought last spring. I got prices from several manufacturers. I will have to watch to see that all specifications are lived up to. They certainly figured low."



The General Manager of Mines picked up the order form and fingered it thoughtfully.

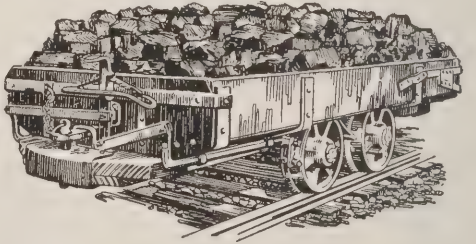
"As a purchasing Agent you have done exactly right," he said "But now look at this business a moment as I have to look at it—as a manager concerned with production and the cost per ton.

"Take this plant, for instance, the tipple equipped with labor-saving devices, the best mining machines we could find, modern locomotives and an expensive group of efficient mine executives who know how to produce coal 'backwards' at a good cost. We could have built and equipped a cheaper plant and I could get much lower priced men.

"Now our mine cars are but a part of the fabric of the whole plant—yet they are the bottle-neck of our production, for transportation from the face to the tipple and the cost of same frequently spells the difference between a poor return or a satisfactory return upon an investment."

"What do you suggest?"

"I suggest that you pick from the group of manufacturers you got in touch with first, three or four whom you know are capable of building good cars—they are the only ones we can afford to buy—and get proposals and interview their representatives, and we will get together with the operating heads and decide who will get the business. Your inquiries specify Hyatt bearings don't they? They are our standard."



"Yes sir, I am sure your superintendents wouldn't consider any other kind."

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Devoted to the Operating, Technical and Business Problems of the Coal-Mining Industry

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# COAL AGE

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## Saving Anthracite

"ELECTRIFY!" IS THE INJUNCTION many an engineer has given anthracite producers who wonder how to cut down the tonnage of their own coal consumed at the mines. The Glen Alden Coal Co. is obeying the injunction. The story of how it reduced its power house consumption to a scant 7.8 per cent of its total production in 1924 is told in next week's issue of *Coal Age* by C. R. Seem, the company's electrical engineer.

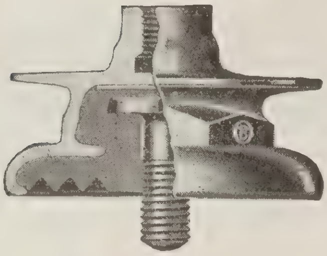
The Glen Alden properties are highly electrified because the records prove that it pays to run mines on that basis. The quantity of steam used to generate electrical energy for motors is, in most instances, less than one-third that necessary to drive steam-operated equipment. On an average, 76 lb. of coal were required under the boilers for every horsepower-hour of work done at the shaft of a steam engine and but 29 lb. to generate electricity for the same unit of power. This sort of thing does its own convincing.

FAILURE OF CONCRETE SHAFT LININGS is another subject treated interestingly in the forthcoming issue. Newell G. Alford, of Pittsburgh, has concluded, after an exhaustive study of such linings in Pennsylvania, that most of the 30 failures out of 105 cases he covered were due to poor drainage behind the shaft walls. Even the best of concrete aided by design and workmanship above reproach cannot withstand the presence of much water behind the lining. Many a mining man will realize this after he reads Mr. Alford's article next week.

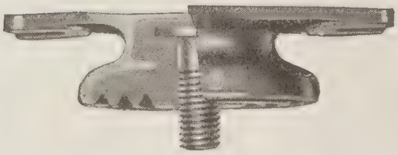
**Advertising Index—Alphabetical, 36; Classified, 33; Consulting Engineers, 28; Searchlight Section, 29 and 30**

*ROOF — TIMBER — PIPE — I-BEAM*

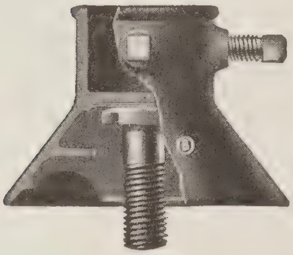
# Insulated Hangers



**Type K—for roof**



**Type H—for timber. With clamp, for I-beam**



**Type U—for pipe**

There is quite a variety in the different types of O-B insulated Hangers. But that is not evidence that O-B has tried to see how many different designs could be originated.

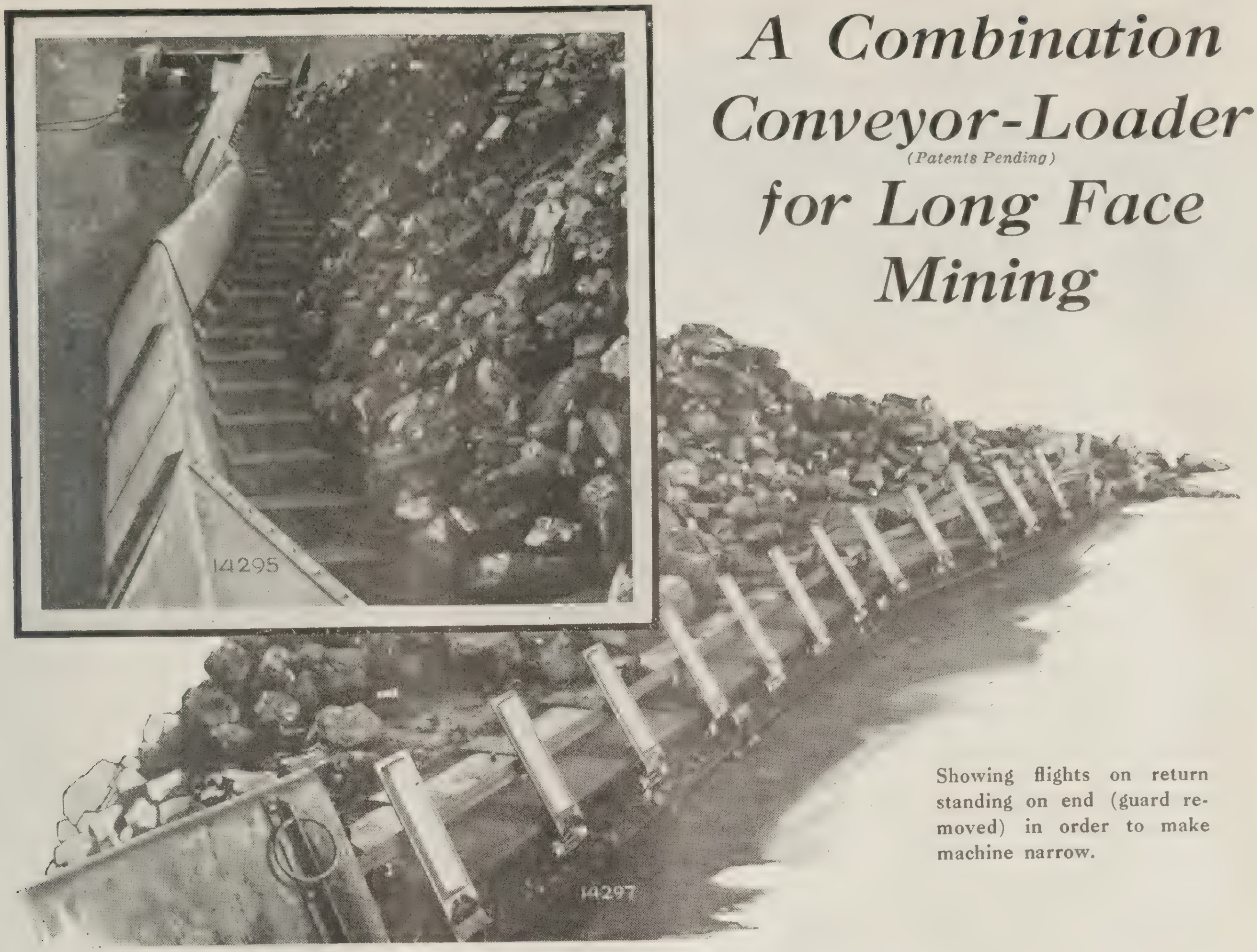
It is evidence of a wide experience in mine electric haulage. The many types have been developed from actual contact with a variety of mine trolley requirements.

And back of this is an active engineering organization willing and anxious to apply information gathered from work at many properties to those problems peculiar to your property.

**The Ohio Brass Company**
**Mansfield, Ohio**
In Canada–Dominion Insulator & Mfg. Co., Limited–Niagara Falls, Ont.

**TROLLEY MATERIAL**

# *A Combination Conveyor-Loader* *(Patents Pending)* *for Long Face Mining*



Showing flights on return standing on end (guard removed) in order to make machine narrow.

THE Jeffrey 44B Machine is a self-loading sectional conveyor and is used on faces preferably 100 ft. or more in length.

After coal has been undercut and shot, the conveyor is pushed into the loose material, the flights picking it up and carrying it away, along the face to a sectional conveyor which delivers it to either mine cars or to still another conveyor.

Built extremely low—the flights travel practically on the mine floor. Larger pieces can be readily rolled onto the conveyor than can be lifted into other types.

Made up in sections 10½ feet long—coupled together with a universal joint—can be quickly lengthened or shortened.

*Send for complete information on the Conveyor-Loader and other Jeffrey Equipment for Aiding Concentrated Mining.*

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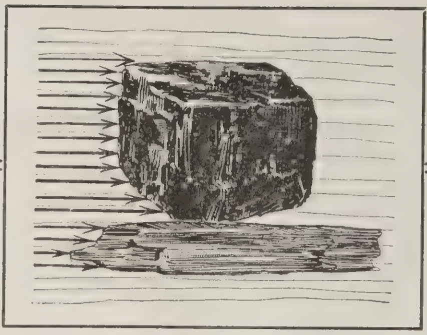
**COAL MINE EQUIPMENT**



# *What does* Rhéolaveur *mean?*

Rhéolaveur (French) translated means Current Washer.

The Rhéolaveur Process depends upon current washing for its primary classification. It utilizes the principle of specific gravities of the particles of coal, bone and slate, combined with the resistance their size and shape offers to a horizontal current of water.

By subjecting a mass of raw unwashed coal to a stream of water down an incline, the heavy slate quickly goes to the bottom of the chute and is slowed down by the friction against the bottom, while the lighter and more round coal tumbles over this lower strata and travels in a strata of its own making on top.

The Rhéolaveur Process utilizes this principle in a manner to get the greatest possible benefit from this phenomena.

This is the meaning of the name Rhéolaveur.

***Write for further details and be sure to read the Rhéolaveur advertisements in the coming issues of Coal Age***

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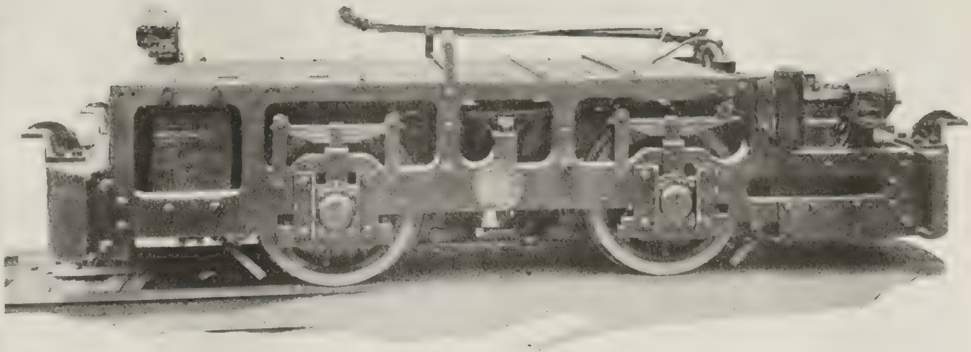
**CURRENT WASHER**



# Sharp curves—
# *What if there are?*

No danger of derailments around sharp curves when a Vulcan Trolley Locomotive is doing your hauling. Due to the 3-point suspension of the chassis and other shock and strain absorbing features, this Vulcan Electric Locomotive adjusts itself to sudden turns as well as bumps and abrupt grades. The service life is prolonged just as the life of the Vulcan Steam Locomotive which has records of 30 and 40 years on a job.

Look over the features listed in the panel on this page and send for the story complete.

**VULCAN IRON WORKS**
WILKES-BARRE, PA.

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McCormick Bldg.

*Established* 1849

VULCAN *of* WILKES-BARRE
VIW LOCOMOTIVES

## How and why it's built like the Vulcan Steam Locomotive

Here is the answer to the demand of the industry for a Trolley Locomotive with the same shock-resistant, long-service features as the Vulcan Steam Locomotive.

### 3-Point Suspension

This 3-Point Suspension of the entire chassis is an exclusive feature of the Vulcan Trolley Locomotive. One pair of springs supports the frame through one set of hangers. One end of another pair of springs is held by other hangers. The opposite ends of the springs engage an equalizing bar extending across the machine and supported in the center. By means of this arrangement shocks are absorbed, the weight is evenly distributed and the locomotive runs smoothly over any ordinary inequalities of track.

### Other Features

Cast Steel Bar Frame

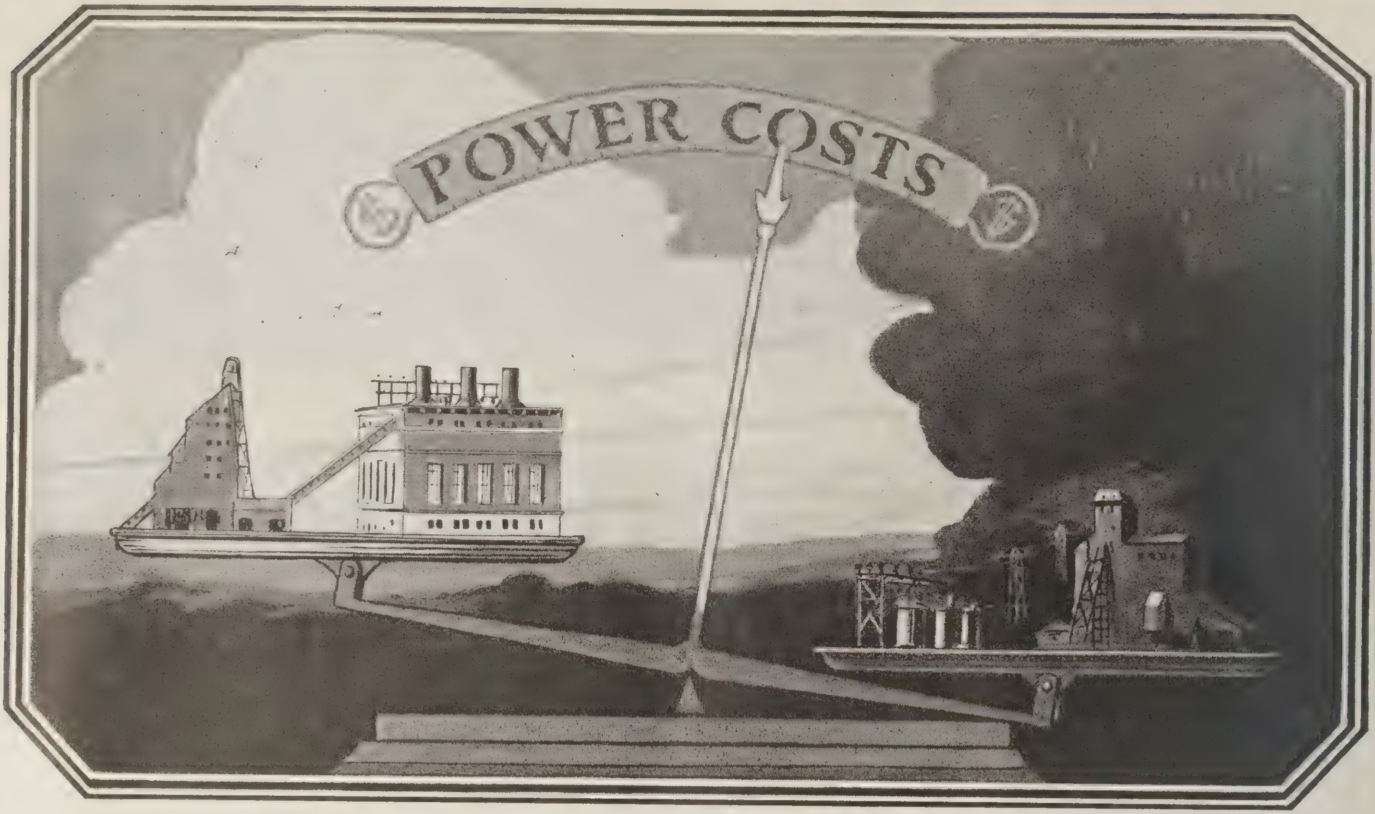
Each side frame is cast in one piece and of steel bar design, thus combining maximum rigidity as well as accessibility. The open spaces permit ample ventilation and simplify inspection.

Brake Rigging

The powerful, easily operated brakes, like the other two features, have been adopted in a large degree from Vulcan Steam Locomotive practice.

### Vulcan Products

- Hoists,
  - Electric and Steam
- Locomotives,
  - Steam, Gasoline, Electric
- Rotary Kilns, Dryers, Coolers and Roasters
- Fairchild Double-Discharge Ball Mill
- Mine Ventilating Fans
- Cages and Skips
- Sheave Wheels
- Corliss Engines
- Coal Crushers
- Gray Iron Castings
- Open Hearth Steel Castings
- Gears, Moulded and Cut Teeth
- Special Machinery



# "Should We Buy or Generate our Power?"

YOUR answer to this question should be based on facts! Either way your power bills are large enough to mount as power needs grow through increased mechanization and output.

Usually, if a proper water supply is available and load factors properly balanced, a coal mine of today's required capacity for economical production can burn its unmarketable coal in a well-designed power plant and generate its own power needs at less cost than central station service. Too often, however, antiquated equipment or needless operating expenses are responsible for abandoning mine power plants that might be regrouped or re-equipped with handsome returns on the investment. Too often the right choice is guessed at with either decision a mistake. And in too many instances inaccurate costs or *indifference* are wasting thousands of dollars yearly in excessive power bills.

Do you know your real power costs at present? Can they be reduced by a few simple changes in load cycles or distribution layout? Are you now scrapping mine waste that can be turned into kilowatts? Should you scrap or modernize your present plant? Can several wasteful plants be bunched to advantage in a high-efficiency "central" plant of your own? Or can you save real money by switching over to purchased power?

Allen & Garcia engineers are experienced in getting at the unprejudiced answers to these questions. Possibly the *correct* solution may have an unsuspected bearing on your costs-per-ton.

**A Few of the Companies A & G Has Served on the Power Problem**

Donk Bros. Coal & Coke Co.
Chicago, Wilmington & Franklin Coal Co.
The Marcoll Coal Co.
J. K. Dering Coal Co.
Raleigh-Wyoming Coal Co.

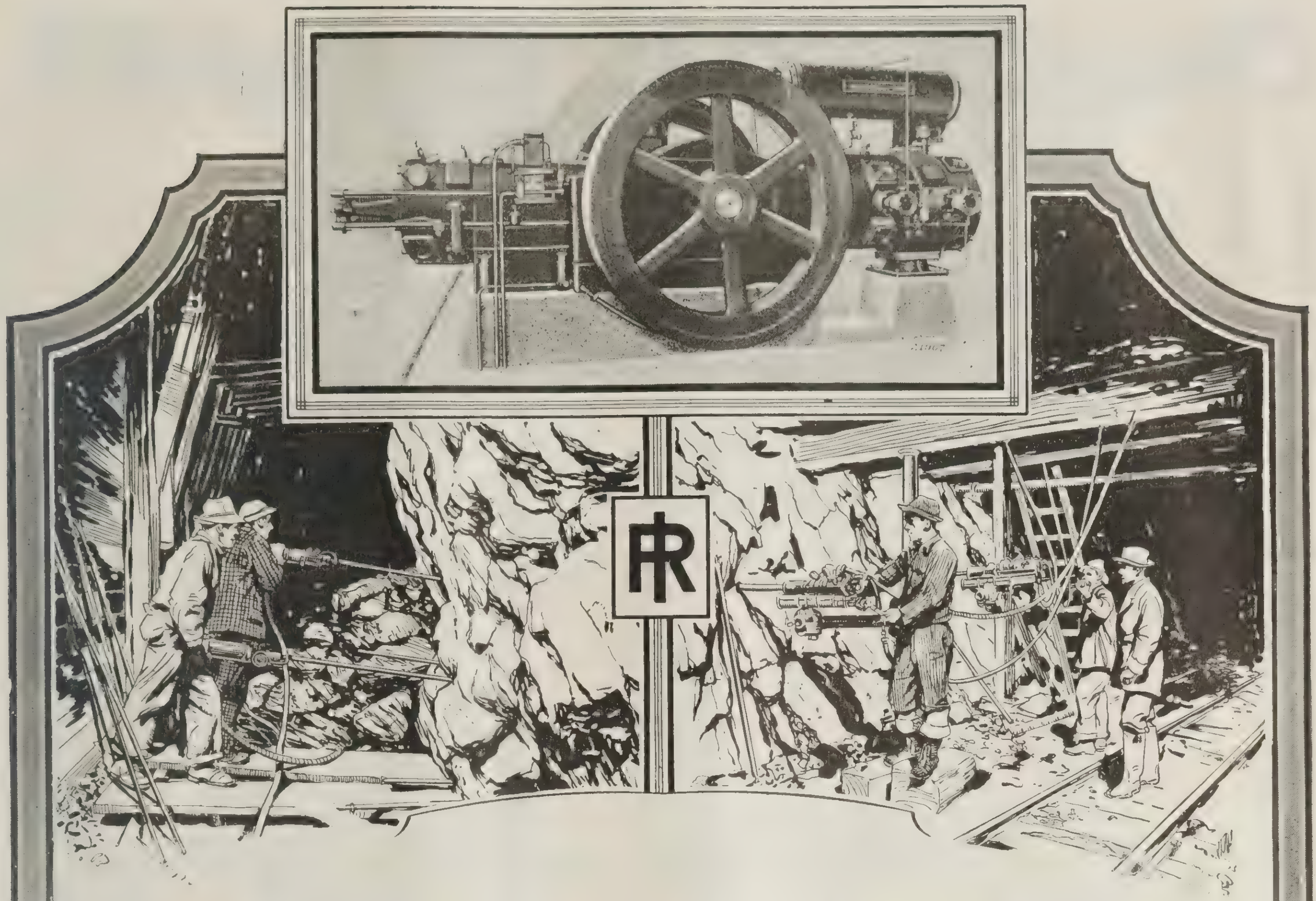
Allen & Garcia Company
21 E. Van Buren St., Chicago

**ALLEN & GARCIA**

ENGINEERS AND BUILDERS OF MODERN COAL OPERATIONS

DESIGNING · CONSULTING CONSTRUCTING · TIPPLES · WASHERIES

COMPLETE PLANTS · POWER PLANTS · ELECTRIFICATION · REPORTS · APPRAISALS



# Cheaper Air Power
## with an
# I-R Oil Engine Air Compressor

The Ingersoll-Rand Type "POC-2" Oil Engine Air Compressor illustrated will operate a 10-hour shift at full load on 60 gallons of fuel oil and ½ gallon of lubricating oil.

With fuel oil costing 6 cents per gallon and lubricating oil 60 cents per gallon, the operating cost for a 10-hour shift is less than $4.00.

At full load, the compressor will furnish sufficient air for operating continuously three R-72 "Leyner-Ingersoll" Drifters or eight BCR-430 "Jackhamer" Drills.

These oil engine air compressors are rugged, simple, and reliable. They are the cheapest source of air power. Skilled operators are not required.

INGERSOLL-RAND COMPANY-11 BROADWAY, NEW YORK CITY.
*Offices in principal cities the world over.*
FOR CANADA REFER-CANADIAN INGERSOLL-RAND CO. LIMITED, 260 ST. JAMES STREET, MONTREAL, QUEBEC.

75-SOE

**Ingersoll-Rand**

# CHANCE COAL CLEANER

COAL cleaned by the Chance process always meets established standards —and more than this, it sets a standard of its own that is unequalled by the product of any other method of preparation.

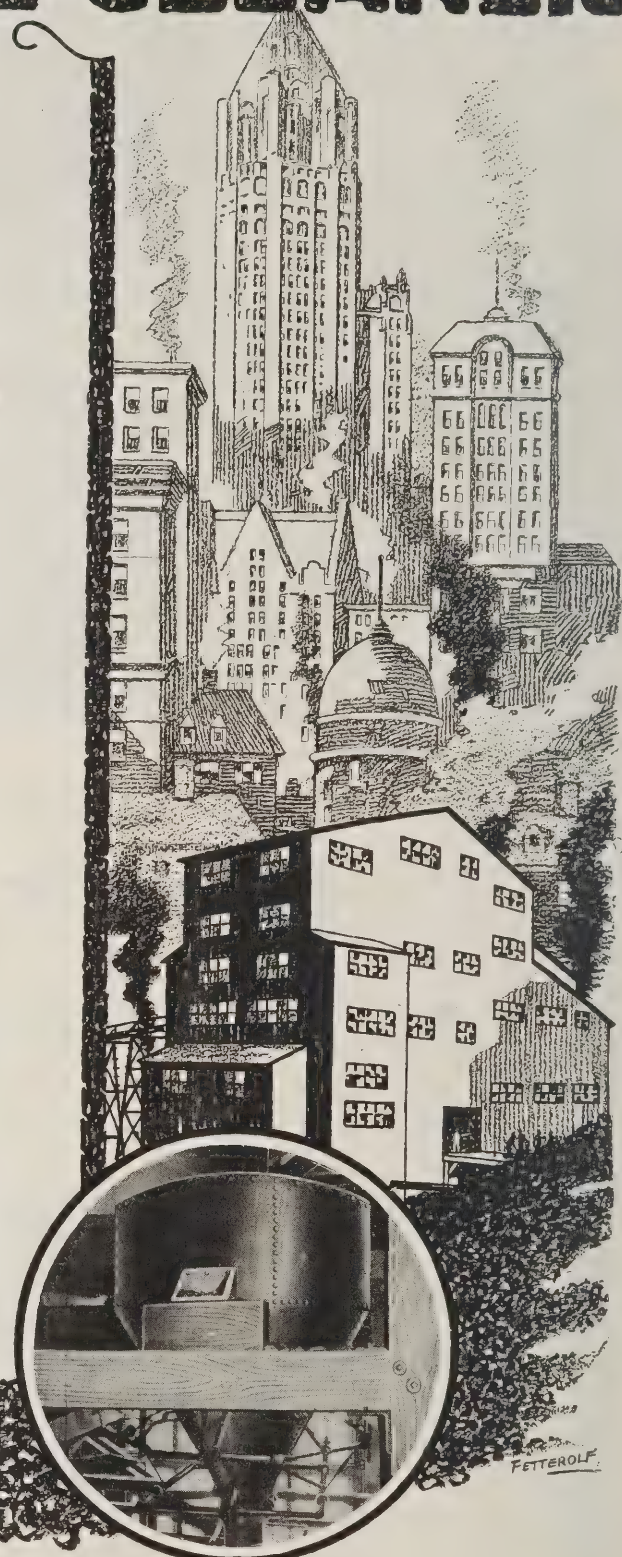
The Chance Cleaner meets these requirements regularly, continually, dependably day by day, without regulation after it is once adjusted and without any retreating of the output. One cleaner has marketed very close to a million tons of all sizes, from egg to birdseye without a single car being condemned or rejected. For instance, one operator who has been using a Chance Cleaner for three years writes as follows:

> *"In spite of the fact that our coal shipments in all sizes run on an average of one per cent slate or less, we still find that our rock bank seldom exceeds one per cent of coal. We have tested under very rigid inspection at various times, both the coal going to market, and rock and slate going to spoil bank, and we claim that we are preparing the best coal in the anthracite region and our slate and rock bank is practically perfect."*

Other operators, who are using Chance Coal Cleaners, say:

> *"We obtain a much higher price for our coal." "The preparation of the coal is perfect from egg down to and including barley."*

The necessity for meeting higher standards in the production of Anthracite is daily becoming clearer and more urgent, and the operator who equips his operation to produce the cleanest and best coal is the one who will retain his markets under competitive conditions and realize maximum returns. This is one of many ways in which the Chance Cleaner increases profits. Others are dealt with at length in a series of advertisement reprints that will be sent you upon request.



H. M. Chance & Co.
*Engineers*
Drexel Building
Philadelphia, Penna.

## CHANCE COAL CLEANER

M. A. WALKER, GENERAL MANAGER
MEARS BUILDING, SCRANTON PENNA.

H. O. Staples
*Sole Anthracite Licensor*
Mears Building
Scranton, Penna.

*Hulburt Products:*
Mine Car Grease
Mining Machine and Locomotive Lubricant
Wool Yarn Elastic Grease
Cup Greases
Cable Dressing
Mechanical Loader Grease

HULBURT OIL & GREASE CO.
General Offices & Works Philadelphia, Pa
*Distributing Points Throughout Coal Fields*

# HULBURT

*SPECIALISTS IN COAL MINE LUBRICATION*

# And King Coal rides behind them—

EVER since we began building locomotives (60 years ago) we have specialized in particular fields. Coal mining is one of them. The man who operates only one Porter or the man who runs a whole fleet of them is equally insured against breakdown or defects, both by the durability built into every Porter Locomotive and by the Porter *duplicate parts* system, which we originated.

We not only build—we also carry in stock a variety of all kinds of Porter Locomotives for all industries and every requirement of the engineering and contracting field.

Have you The Porter Catalog?

**H. K. Porter Company**

**Established 1865. PITTSBURGH, PA.**

*Export Rep.*—**Wonham Bates & Goode Trading Corp.**
**44 Whitehall St., New York City**

**PORTER**
"better built"
locomotives

# PORTER LOCOMOTIVES

**The car that fits the needs of Northumberland Mining Co.**

# Of big capacity for both hard and soft coal mines!

You would expect such a big capacity car as this (113 cubic feet water level) when built for the anthracite field, to be 9 to 12 inches higher. But the Northumberland Mining Company wanted it to meet the requirements of the bituminous fields too. So "Car Foundry" Engineers designed it accordingly—only 4 ft. $\frac{5}{8}$ inches overall, from the top of the rail.

It is a composite steel and wood proposition. A $2\frac{1}{2}$-inch wood floor, covered with $\frac{1}{4}$-inch steel plate, acts as a cushion for buffing and provides, at the same time, a wearing surface to stand the gaff of mechanical loading and end gate dumping.

It has an adjustment for bearing outside the wheels, allowing the wheels to be replaced without difficulty—a low-maintenance-cost feature which bids fair to gain wide popularity in the mining industry.

"Whatever your car needs, you can depend upon Car Foundry" Engineers to design and build the type most suited.

*Get a "Car Foundry" quotation before you buy.*

American Car and Foundry Co.
New York St. Louis Chicago Pittsburgh

Length overall: 12′
Width overall: 4′ $8\frac{1}{2}$″
Track gauge: 3′ 8″
Height inside: 2′ $6\frac{7}{8}$″
Wheel base: 3′ 6″

**3 SERVICE PLANTS**

These "Car Foundry" Service Plants, each in the heart of a great mining region, enable us to render a national service with "localized" advantages—no matter where your mine is located.

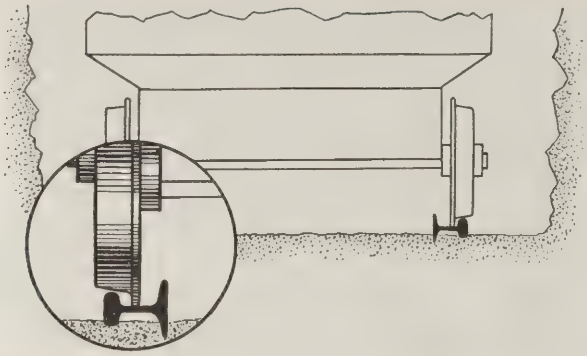
Berwick, Pa. Huntington, W. Va. Terre Haute, Ind.

# "CAR FOUNDRY"

ELECTRIC RIVET HEATERS
BARS, IRON AND STEEL
CAR IRONS

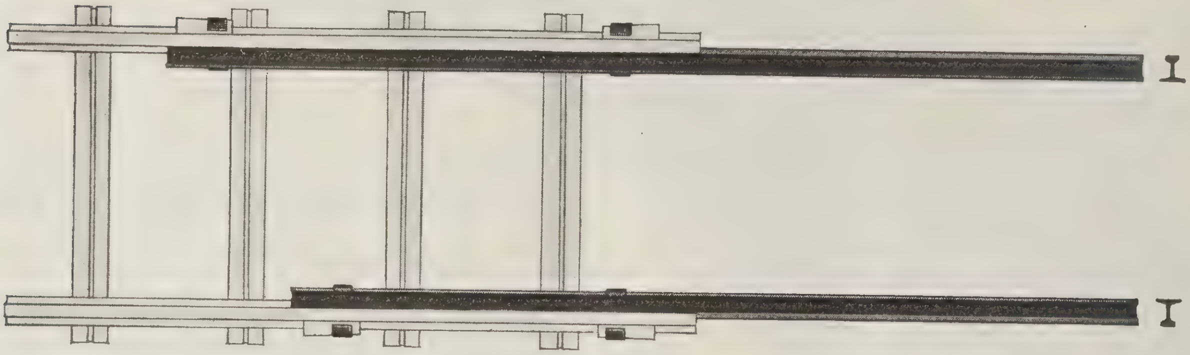
BOLTS, NUTS, RIVETS
IRON BODY GATE VALVES
CAR TRUCKS

CHILLED IRON WHEELS
PINS AND LINKS
FLANGED PIPE



Grimm Rail Clamp

Grimm Rail Clamps provide a quick and handy means of extending track. The clamps firmly hold the rails together, and under load the flanges of the "Balled" rails become embedded in the mine floor, preventing spreading and offering great rigidity for Arc Wall Mining Machines.

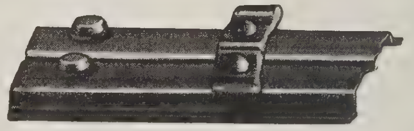


# How to save money!

THE problem of how to save money in extending or "balling" track at the mine face has been efficiently and economically solved for you in the Grimm Rail Clamp.

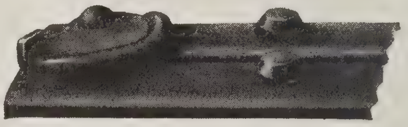
This is how it is done. The use of Grimm Rail Clamps lessens the amount of capital invested; eliminates the use of six ties at each mine face; gives more clearance for mine cars which allows bigger loads; and if wooden ties are used the saving in the cost of spikes, at each mine face, will almost buy a set of clamps. In addition to the foregoing, Grimm Rail Clamps save time and labor, thus increasing production.

There is nothing about the clamp to wear out—you can use it for years. Let us demonstrate the many advantages and money-saving features of the Grimm Rail Clamp.



**The Bethlehem "Standard" Tie**

For general use in Mining and Industrial track. Tie is made to fit any rail section from 16 lb. to 60 lb. per yard, and to any track gage.



The "Universal" Tie

This tie is made purposely to meet conditions where there are several different rail sections in use, and where severe corrosive conditions affect the rail base. The same tie will fit all rail sections from 16 lb. to 30 lb. per yard.

## Bethlehem Track Specialties for Mining and Industrial Use

*include Grimm Rail Clamps, Rails, Mine Ties, Splice Bars, Bolts and Nuts, Switches, Coupling Pins and Links and Mine Car Sprags.*

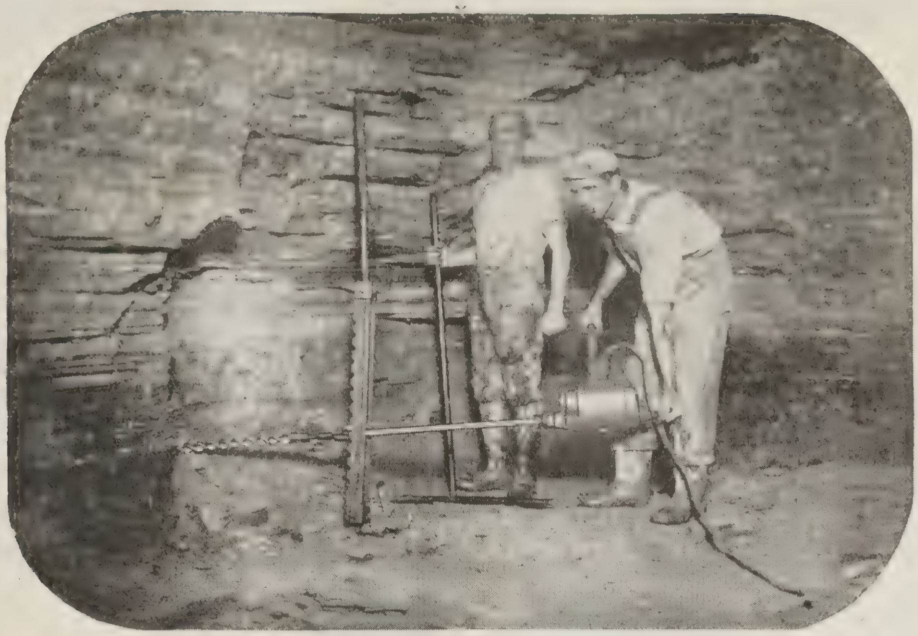
BETHLEHEM STEEL COMPANY, *General Offices:* BETHLEHEM, PA.

*District Offices:*

New York Boston Philadelphia Baltimore Washington Atlanta Pittsburgh Buffalo
Cleveland Detroit Cincinnati Chicago St. Louis San Francisco Los Angeles Seattle

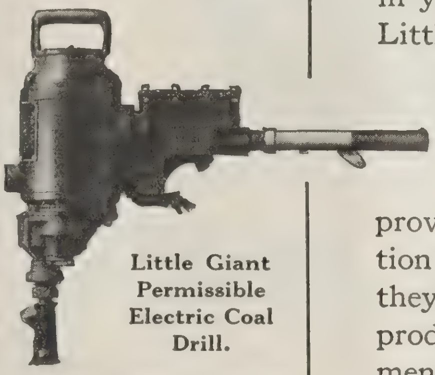
*Bethlehem Steel Export Corporation, 25 Broadway, New York City, Sole Exporter of our Commercial Products*

# BETHLEHEM



# Little Giant Electric Coal Drills

**For Use in Gaseous Mines**



**Little Giant Permissible Electric Coal Drill.**

All running parts of the motor are fully enclosed in a sealed motor housing. Furnished in Reversible and Non-reversible types for operation on direct current only, 115 and 250 volts.

WHATEVER may be the atmospheric conditions in your coal mine, there is a Little Giant Portable Electric Drill that will meet the need. Operators in every Coal Producing State have conclusively proven through the installation of these machines that they reduce costs, speed up production, crowd development and increase the percentage of lump coal.

The Little Giant Permissible Electric Drill shown at the left is approved by the U. S. Bureau of Mines for use in gaseous mines or dust laden atmosphere. Now every shot hole can be bored electrically, even though your mine is liable to outbursts of gas at the faces.

When Little Giant Drills are used, the whole mining operation is smoother, safer and speedier. Write for Bulletins containing full information.

## Chicago Pneumatic Tool Company

6 East 44th Street, NEW YORK, N. Y.

*Sales and *Service Branches all over the World*

*Birmingham
*Boston
*Chicago
*Cincinnati
*Cleveland
Dallas
Denver
*Detroit
El Paso
Houston
*Los Angeles
*Minneapolis
*New Orleans
*New York
*Philadelphia
*Pittsburgh
Richmond
Salt Lake City
*San Francisco
*Seattle
*St. Louis
Tulsa
*Berlin
*Bombay
*Brussels
*Buenos Aires
Calcutta
Copenhagen
Dairen
*Durban
*Havana
Helsingfors
Honolulu
*Johannesburg
Kobe
*London
Manila
*Mexico City
*Milan
Moncton
*Montevideo
*Montreal
Osaka
Oslo
*Paris
Rio de Janeiro
*Rotterdam
Santiago
*Sao Paulo
Seoul
Stockholm
Tampico
Timmins
Tokyo
*Toronto
*Vancouver
*Winnipeg

Canadian Pneumatic Tool Company, Ltd., Montreal, manufacturers of Chicago Pneumatic products in Canada
Consolidated Pneumatic Tool Company, Ltd., London, manufacturers of Chicago Pneumatic products in England

EL-105

BOYER PNEUMATIC HAMMERS ·· LITTLE GIANT PNEUMATIC AND ELECTRIC TOOLS
CHICAGO PNEUMATIC AIR COMPRESSORS ·· VACUUM PUMPS ·· PNEUMATIC HOISTS,
GIANT OIL AND GAS ENGINES ROCK DRILLS ·· COAL DRILLS

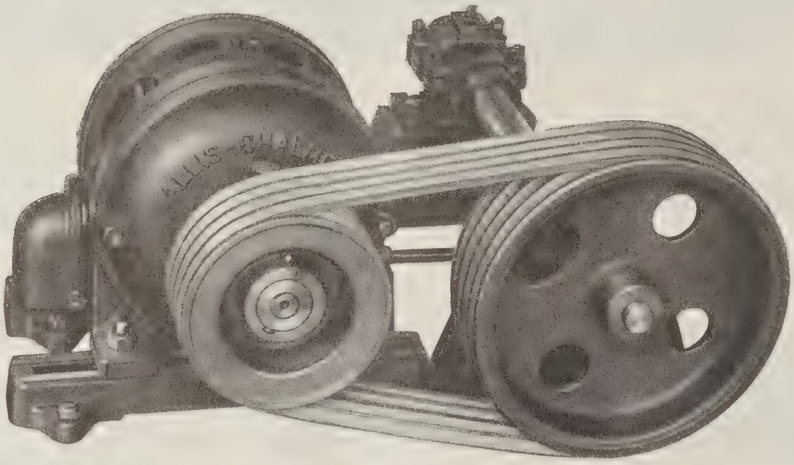
CHICAGO CP PNEUMATIC

**LITTLE GIANT**

*Electric Tools*

# *ANNOUNCING*
# *THE*
# ALLIS
# TEXROPE DRIVE

PATENTS PENDING



**10 H. P. Motor and Allis Texrope Drive**

## A FLEXIBLE AND POSITIVE MULTIPLE BELT DRIVE FOR CLOSE CENTERS

PRINCIPAL ADVANTAGES:

1. Remarkable Smoothness.
2. No Lost Motion.
3. No Slip, Fixed Speed Ratio.
4. Does Not Transmit Vibration or Jerks.
5. Flexible and Shock Absorbing.
6. Light Bearing Pressures.
7. Not Affected by Moisture or Dirt.
8. Short Centers.
9. Silent.
10. Clean.
11. Trouble Proof.
12. Simple.
13. Economical.
14. Safe.

**Applicable to every industry. Already in service in ½ to 250 H.P. sizes.**
**Ratios up to 1 to 7, replacing chains, gears and belts.**

***Write for Bulletin 1228***

# ALLIS-CHALMERS

MILWAUKEE, WIS. U. S. A.

# Lift yourself by your boot straps

THROUGHOUT the past year these advertisements have told you about Linde Process Service for Linde users. They have shown how it can help you, whether you have only a comparatively simple job, or whether you want to make the oxy-acetylene process part of your production work with all the managerial and engineering problems that this involves.

Linde Process Service goes even further. Under the title of Procedure Control, instructions are being assembled for every application of the oxy-acetylene process. So, when you ask for help, we shall be able to send you a set of instructions for your particular job. They will tell you how to select your materials, how to instruct your welders, how to set up and carry out the work, and how to test the finished job.

So you can, in reality, lift yourself by your boot straps. Linde Service men will always be available when needed, but, with the aid of Procedure Control alone, you will be able to apply the oxy-acetylene process to your manufacturing problems.

Next year our advertising will describe some of the outstanding achievements of the oxy-acetylene process in industry—achievements made possible by the use of Linde Process Service.

*Check the books you want, tear out this list and mail it to the nearest District Office*

☐ Cast Iron Welding by the Oxy-Acetylene Process
☐ The Dependability of Cast Iron Welding
☐ Gas Welded Pipe Joints
☐ How Welded Joints Solved Pipe Line Troubles
☐ Step by Step in Oxwelding a Pipe Joint
☐ Welding Small Tanks by the Oxy-Acetylene Process
☐ The Oxygen Lance
☐ Welding and Cutting for the Manufacture and Maintenance of Chemical Equipment
☐ Step by Step in Gas Welding a Cylinder Block
☐ Severing Metals by Oxidation
☐ The Handling, Storage and Return of Cylinders for Compressed Gases
☐ The Importance of Managerial Understanding of Welding

**THE LINDE AIR PRODUCTS CO.**
*General Offices:*
Carbide and Carbon Building, 30 E. 42d Street
New York, N.Y.

*37 Plants* *22 District Sales Offices* *91 Warehouses*

# LINDE OXYGEN

YOU CAN DEPEND ON THE LINDE COMPANY

All Pennsylvania Waverly Oils and Greases
Lubrication Charts
Mine Cars
All Pennsylvania Waverly Oils and Greases
Lubrication Charts
Mine Cars—Cont.
Mine Car

# Lubrication in a Nut Shell

Not long ago, a prominent industrial engineer asked, "Why don't the oil companies put out a lubrication chart for industrial machinery similar to the automobile charts now so popular all over the country?" Acting on his suggestion, and after a long, tedious research, we have produced the first of its kind for general distribution.

Here it is!

Every mine superintendent, every mine engineer, and everyone who has to do with mine lubrication should have one of these books. In addition to the lubrication charts, they contain a valuable treatise on Industrial Lubrication. This is not an advertisement; it is primarily an aid to industry as a whole, and everyone should avail himself of our offer to mail him a copy—gratis.

Use the coupon, if you like.

**Waverly Oil Works Company**
5401 FIFTY-FOURTH ST. PITTSBURGH, PA.

*Established 44 years*

**Gas Engine Oils**
**Air Compressor Oils**
**Turbine Oils**
**Engine Oils**
**Cylinder Oils**
**Steel Mill Greases**
**Paper Mill Greases**
**Special Greases**
*for every conceivable purpose*

(Cut along this line)

WAVERLY OIL WORKS CO.
5401-54TH ST., PITTSBURGH, PA.

Please send me copy of the Waverly Industrial Lubricating Chart.

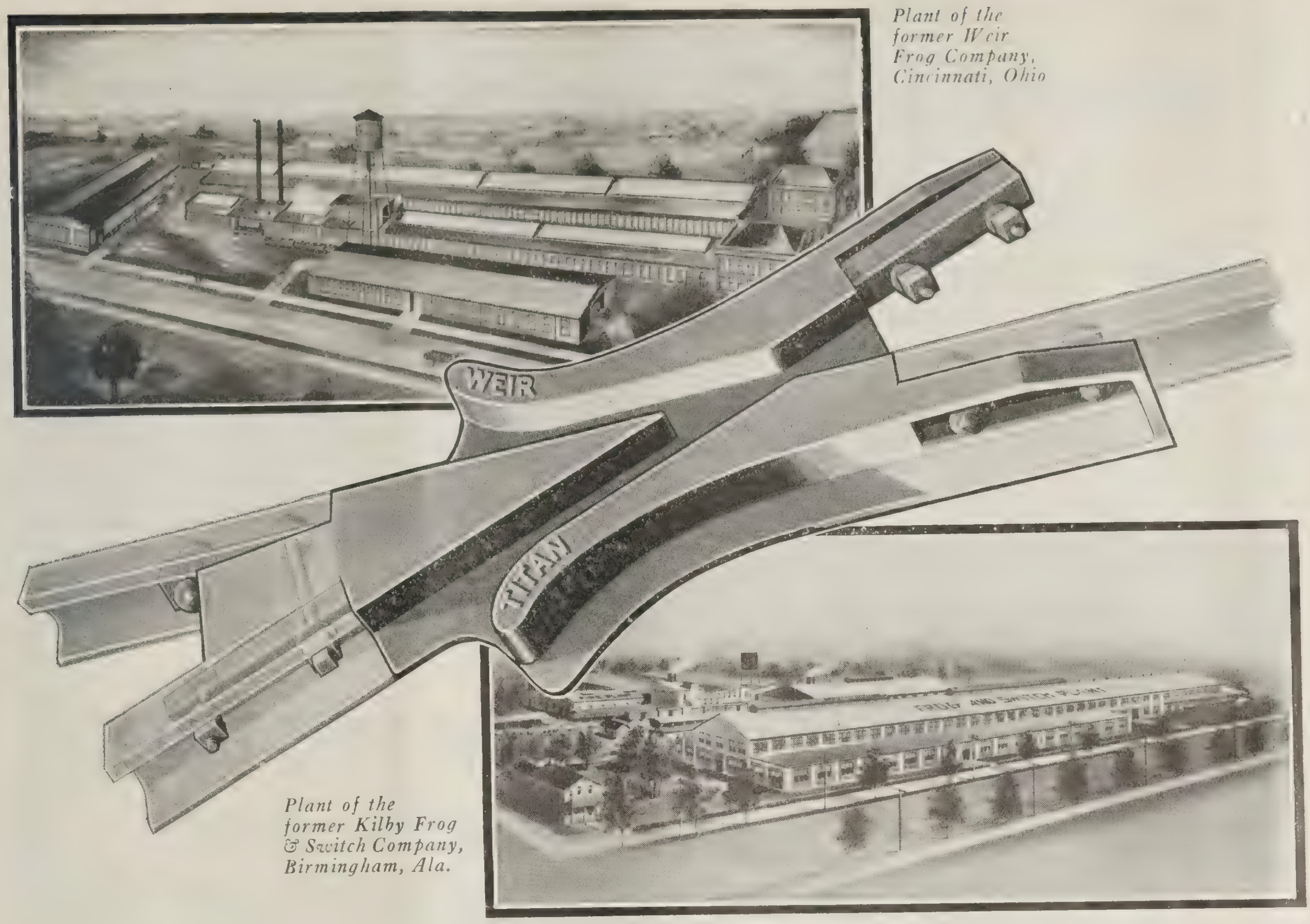
Name..........................................

Address..........................................

City.................... State....................

Guaranteed 100% PURE PENNSYLVANIA OIL

BY INVITATION MEMBER OF RICE LEADERS OF THE WORLD ASSN MEMBER OF PENNSYLVANIA GRADE CRUDE OIL ASSN.



*Plant of the former Weir Frog Company, Cincinnati, Ohio*

*Plant of the former Kilby Frog & Switch Company, Birmingham, Ala.*

# A consolidation that doubles service facilities

This consolidation of the former Weir Frog Company and the Kilby Frog & Switch Co. of Birmingham, Ala., as the Weir Kilby Corporation, Cincinnati, Ohio, is in line with the Weir ideal of constant improvement in service to the coal mines of America.

Now, as never before, real efficiency is the prime necessity at all coal-mining property to meet the new-day conditions, and only those haulage tracks that are kept in good condition can handle the heavy trains at high speed that modern mining demands.

Well-built, rightly designed frogs, switches, switchstands, room turnouts, crossings, etc., for which the name WEIR and KILBY have both become recognized, must help mine operators maintain production schedules and keep production at rock-bottom costs.

"Wire Weir" now has a double significance. It means still better service! *Try it.*

WEIR KILBY CORPORATION
*Cincinnati, Ohio*

**WEIR**

**FROGS · SWITCHES · STANDS**

# Out'a track again!

*Always an unwelcome message*

When the loader's out of track—and the track crew's busy elsewhere you know what happens.

It means *that production costs are going up and tonnage is going down.*

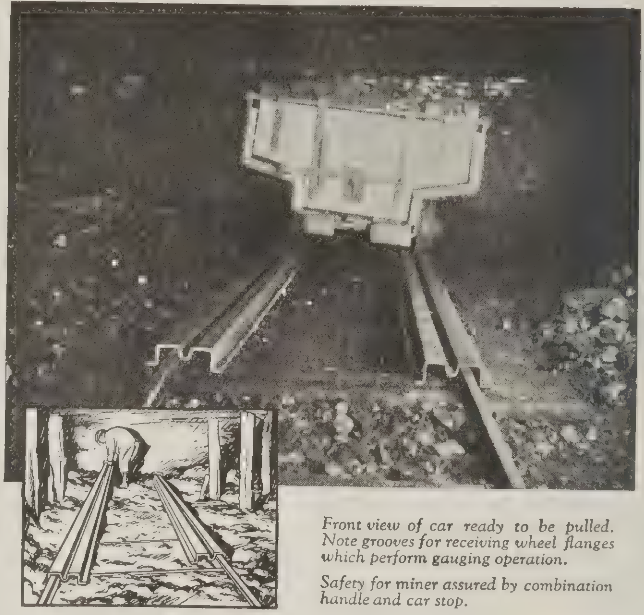
If the loaders in ten rooms out of a hundred run out of track it means a ten per cent decrease in tonnage and a still bigger increase in costs.

Why run the risk? It is no longer necessary. Every loader equipped with a set of Tompkins' Extension Rails can put them in position himself in thirty seconds, and eliminate all temporary track laying costs. No ties, no spikes, plates, bolts, nuts, or tools.

Tompkins' Extension Rails come in 16 and 20 ft. lengths "Standard" and "Heavy Duty" weights. They slip right over the ends of permanent track. Strong, durable, and practically last forever.

Get a few sets and try them out. We know you'll like them. Your jobber will see that you are supplied promptly or write us.

**THE MIDLAND STEEL PRODUCTS CO.**
CLEVELAND, OHIO



*Front view of car ready to be pulled. Note grooves for receiving wheel flanges which perform gauging operation.*

*Safety for miner assured by combination handle and car stop.*

# TOMPKINS

## EXTENSION RAILS

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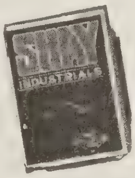
# How Shays Save Money In Strip Mine Hauling



*May we send you a copy of our catalog?*

SHAYS are saving their cost over and over again in many strip mines, by serving continuously and dependably over long periods of years, operating on inexpensive track, over steep grades and sharp curves.

"We are using six Shays," writes the Superintendent of one company. "They have been in service since 1908 and 1911 and are doing their work as well as new machines.

"They will operate on track that a rod engine could not move on."

This company is using various types of locomotives at their operations, but they say, "for traction and power, the Shay leads them all."

May we explain how powerful and dependable Shays can reduce your hauling expense?

LIMA LOCOMOTIVE WORKS
Incorporated
Lima, Ohio
17 East 42nd Street, New York

# Behind every Brush-stroke

## Put the Triple Protection of Du Pont Prescription Paint Service

Copyright 1924 by E. I. du Pont de Nemours and Company

It protects your mining property from three angles.

First—we *know* the *causes* of corrosion and decay of metal, wood and concrete in the coal industry and we will send experts to check up conditions in *your* particular property.

Second—we know the proper *composition* of paint to check rust, decay or corrosion under any given conditions.

Third—our experts will select the correct paint for any given protective problem—not merely paint, but the *right* paint for the circumstances and materials.

This Service covers all your mine or any part of it. Let a Du Pont expert call to make recommendations.

**E. I. du Pont de Nemours & Co., Inc.**
**3500 Gray's Ferry Road, Philadelphia, Pa.**
**2100 Elston Ave., Chicago, Ill.**
**Everett Station (49), Boston, Mass.**
**21 E. Fortieth St., New York City.**

"Save the surface and you save all" Paint & Varnish

**PAINTS & DU PONT VARNISHES**
**for every Household and Industrial Use**

TRADE MARK REGISTERED

# FAIRMONT

## COMPLETE TIPPLE INSTALLATIONS

PRODUCTS

STEEL TIPPLE STRUCTURES
DUMPS – ALL TYPES
FEEDERS – ALL TYPES
CAR HAULS
WEIGH BASKETS
CONVEYORS – ALL TYPES
SCREENS – GRAVITY
SCREENS – SHAKER
PICKING TABLES
LOADING BOOMS
STEEL MINE TIES
PORTABLE PUMPS
TURTLE BACK STRAINERS
RAILROAD CAR RETARDERS
MINE CAR BODIES (STEEL)
BOX CAR LOADERS
UNDERGROUND FACE CONVEYORS

BULLETINS ON REQUEST

FAIRMONT MINING MACHINERY CO.
FAIRMONT – WEST VA.

— SALES OFFICES: —

Birmingham, Ala., Keiser-Geismer Engineering Co.
Huntington, W. Va., Huntington Supply & Equipment Co.
Harlan, Ky., McCombs Supply Co.
Pittsburgh, Pa., Fairmont Mining Machinery Co., State Bldg.
Denver, Colo., O. H. Davidson Equipment Co., 1633 Tremont St.
Evansville, Ind., Evansville Structural Supply Co.
Terre Haute, Ind., Industrial Supply Co.

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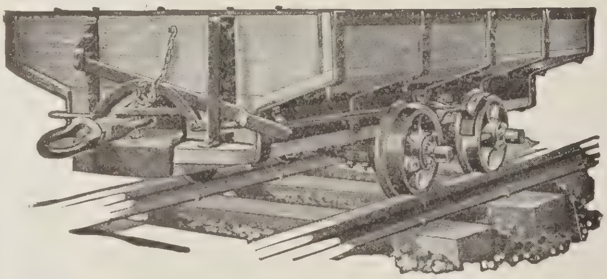

We shipped Watt Cars to northern Canada 14 years ago—had hard service and now they are bringing them back to the States for another mine operation.

IT PAYS TO BUY
WATT CARS
*"The Best"*

*The*
WATT
MINING CAR
WHEEL CO.
Barnesville,
Ohio

SELLING "WATT QUALITY PRODUCTS"

**Pittsburgh, Pa.**—W. C. Wilson, 1135 Greenfield Ave.
**New York, N. Y.**—C. R. Gier Co., 66 Beaver St.
**San Francisco, Cal.**—N. D. Phelps, Sheldon Bldg.
**Huntington, W. Va.**—J. E. Graham, 341 Sixth Ave.
**Chicago, Ill.**—W. W. Baker, 140 South Dearborn St.
**Denver, Colo.**—Lindrooth, Shubart & Co., Boston Bldg.
**Birmingham, Ala.**—Industrial Supply Co.

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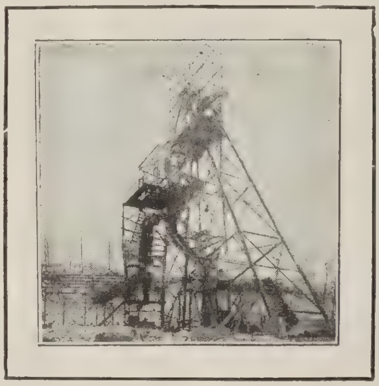

## Scottdale Coal Tipple Equipment

Screens, picking tables, shakers, loading booms, feeders and other Scottdale coal mining machinery, are all designed to handle coal efficiently and with minimum breakage.

25 years' experience in the design and manufacture of coal tipple equipment, with intimate contact with the development of mining practice, qualifies the Scottdale engineering staff.

Besides manufacturing coal tipple machinery we also design and erect complete coal-handling plants.

*Send for Bulletin 802*

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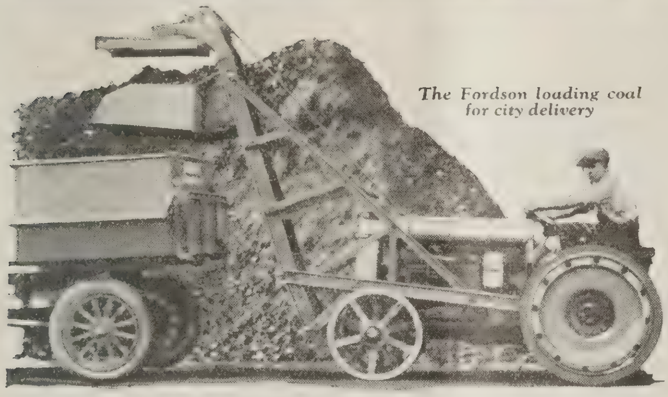
**Box 950, Scottdale, Penn.**

MARION MACH. FDRY & SUPPLY CO. SCOTTDALE PA.

MARION MINING MACHINERY

Fordson with 5-Ton Dump Body Trailer used for coal deliveries by Campbell Coal Co., Memphis

# Fordsons are Low-Cost, Full-Time Coal Haulers



The Fordson loading coal for city delivery

Fordson Tractors are taking the place of heavy, expensive hauling equipments in many of the leading coal yards of the country. The investment is only a fraction of the cost of heavy duty trucks.

The Fordson with shovel equipment or conveyer bucket loaders can also eliminate the costly expense of hand loading. This is another of the many jobs in which the Fordson proves extremely useful around coal yards.

Your nearest Authorized Ford Dealer will gladly show you facts concerning Fordson performance in the coal business. Let him substantiate these claims with a complete Fordson demonstration in your yards.

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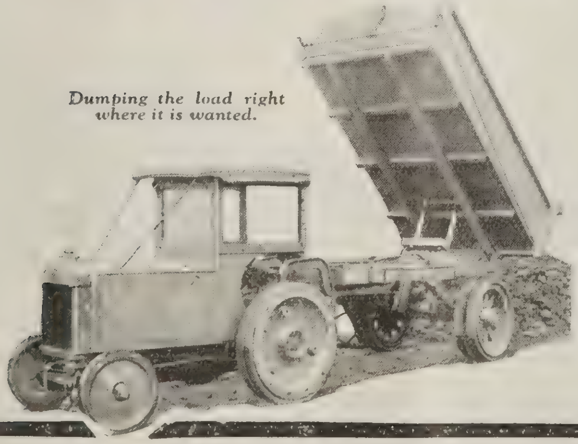
**$495**

**F. O. B. DETROIT**

Fordson with Hoist Body Trailer, capacity 108 cu. ft.



Dumping the load right where it is wanted.

# Sure Grip

MANY "improved" trolley clamps have been put on the market since the Sure Grip was first produced but after seventeen continuous years, the Sure Grip still remains the standard. Engineers of this company have found no possible way to improve upon the Sure Grip design and apparently no other manufacturer has been able to produce as good a clamp.

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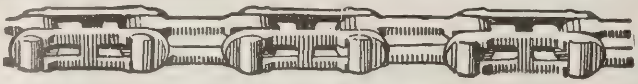

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### Coal Preparation Specialties

"KEYSTONE" Rivetless Conveyor Chain saves time, temper and money. Try it where requirements are super exacting. The element of chance is absent with the purchase of any WILMOT equipment. *Compound Geared Rolls—Hollow Ground Roll Teeth—Simplex and other Coal Jigs—Flexible Arm Shaking Screens—Castings and Machine Work. Write*

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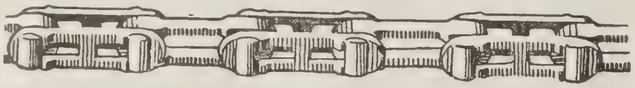
Works: White Haven, Penn.



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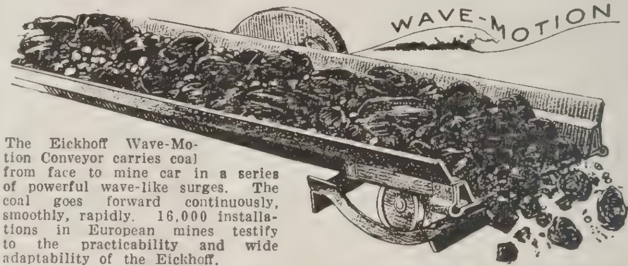
## IT CONVEYS COAL WITH A



The Eickhoff Wave-Motion Conveyor carries coal from face to mine car in a series of powerful wave-like surges. The coal goes forward continuously, smoothly, rapidly. 16,000 installations in European mines testify to the practicability and wide adaptability of the Eickhoff.

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**Eickhoff** JIGGING CONVEYOR

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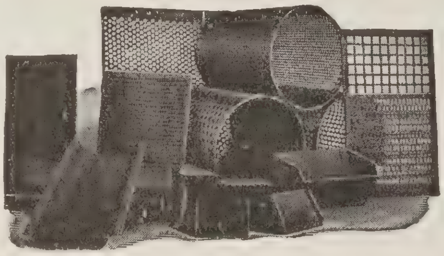

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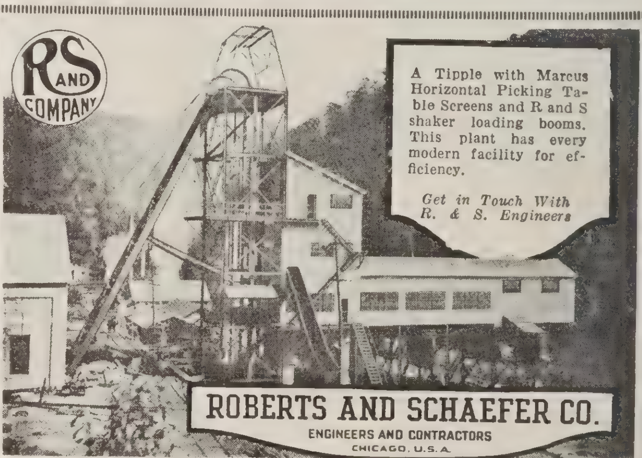

A Tipple with Marcus Horizontal Picking Table Screens and R and S shaker loading booms. This plant has every modern facility for efficiency.

*Get in Touch With R. & S. Engineers*

**ROBERTS AND SCHAEFER CO.**
ENGINEERS AND CONTRACTORS
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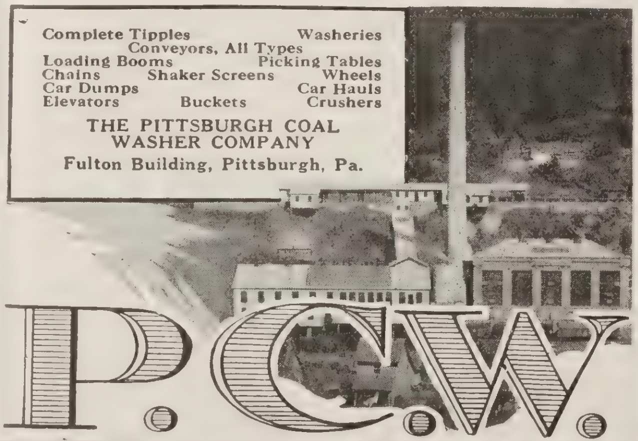

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Chains
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This Legrabon Rock Dusting Machine blows dust, from a double-shell discharge, distributing it uniformly to every part of roof ribs and floor. The dust train, including the machine and two cars of dust, is easily propelled to any part of the mine.

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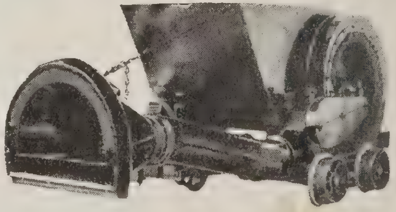

*The* **Legrabon**
**Rock Duster**

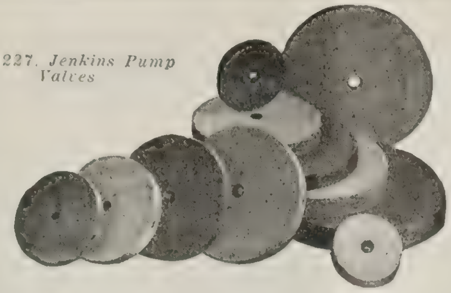

*Fig. 227. Jenkins Pump Valves*

## Get a pump valve to fit the service

In its composition a pump valve must fit the service in which it is to be used, the fluid handled and the pressure the pump is working against.

Jenkins Pump Valves afford the engineer a range of choice which assures him of the proper valve. A schedule of these pump valves and the service for which each is guaranteed is yours for the asking.

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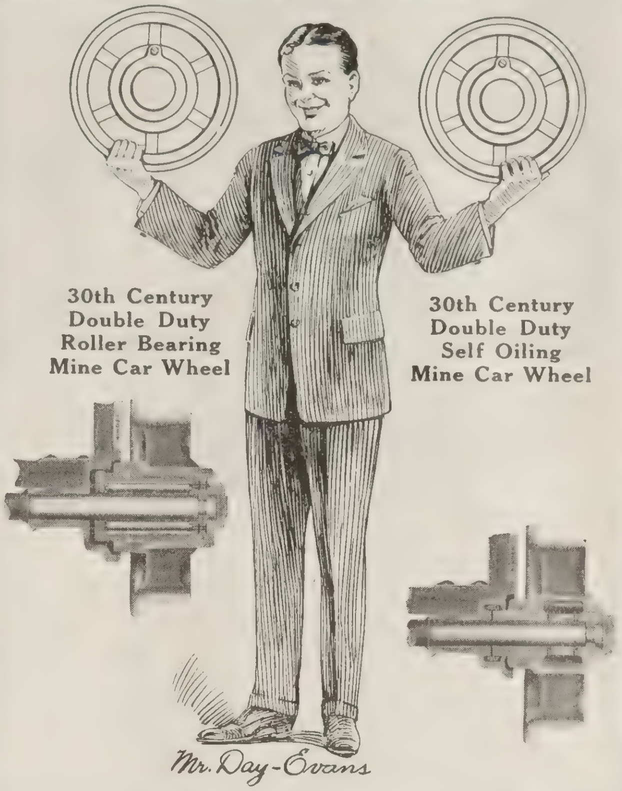

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## Sent on trial

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You know what such speedy shot hole drilling means. There's no need to argue the advantages of that.

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**All rotating parts supported on both ends**

**Torque Cushioning Device reduces Starting Torque**

**Ratio 4:1 to 200:1**

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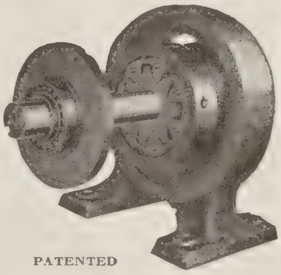

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*—it is not the best coal on earth!*
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*from 25% to 65%*
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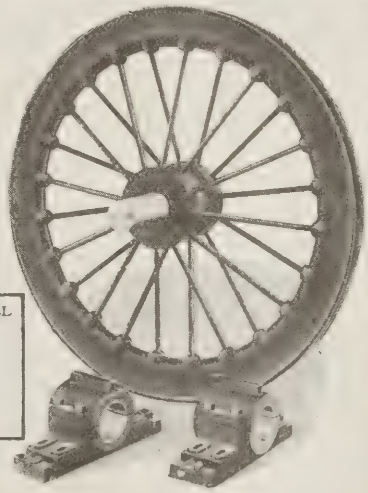

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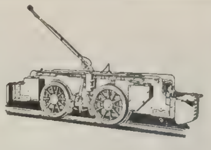

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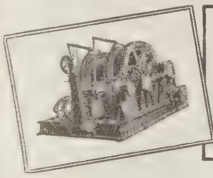

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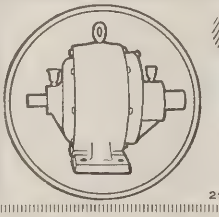

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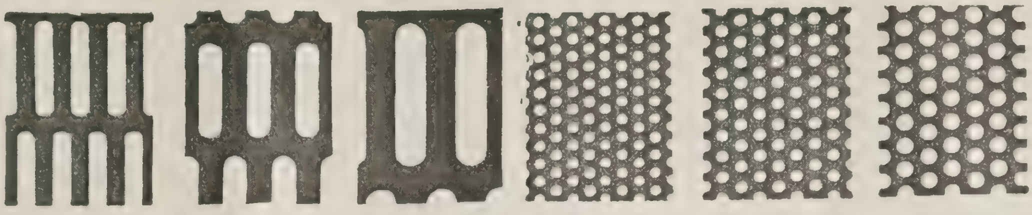

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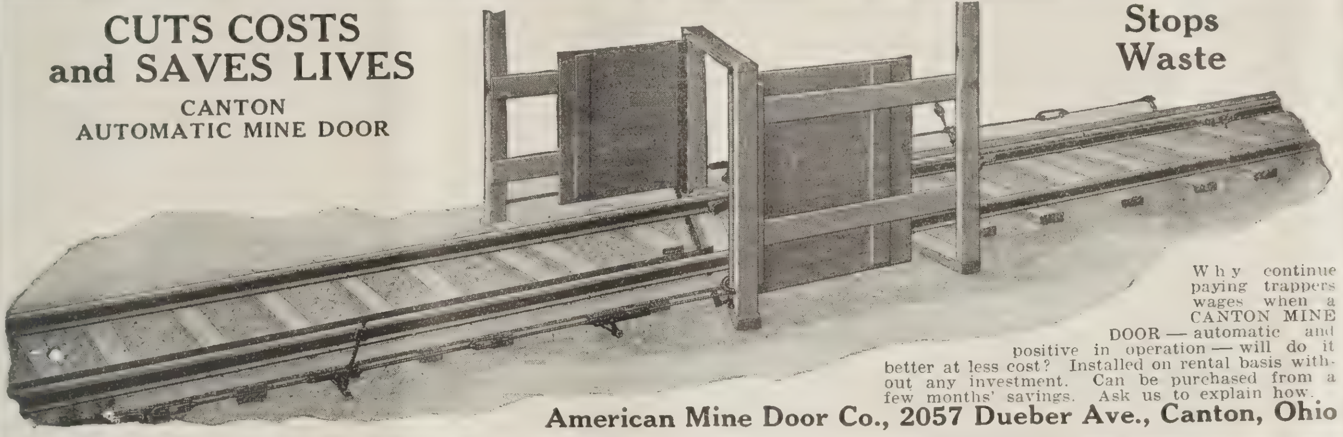

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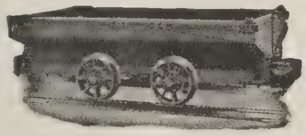

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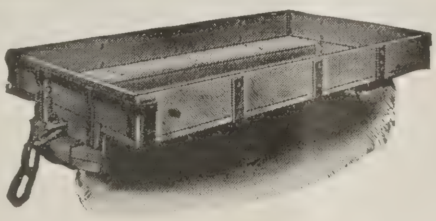

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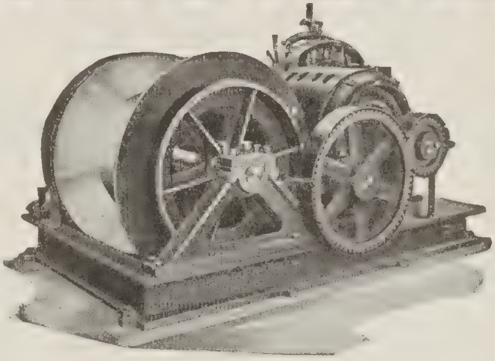

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**Wilson, Ridgeway R.**

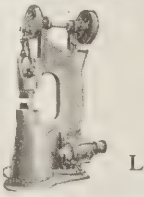
*Mining Engineer*

Victoria, B. C. Canada.

CORE CONTRACTORS

For Diamond Drilling for any mineral—including coal and oil, in any field. Established 1884. Ask for booklet 122-C.

**Sullivan Machinery Company**
**134 SO. MICHIGAN AVE., CHICAGO**



Little Giant Power Hammers

For Pick Point and Bit Sharpening and all kinds of Smithing.

Little Giant Wood Lathes—none better.

**See our half page ad in the Aug. 6th Number**

LITTLE GIANT COMPANY, Mankato, Minn.
**(Formerly Mayer Bros.) 102 Rock St.**

B. D. Hampson, Gen. Manager

**Punxsutawney Drilling and Contracting Company**

**DIAMOND DRILL CONTRACTORS**

**Testing Bituminous Coal Lands a Specialty**

**Weber Building** **PUNXSUTAWNEY, PA.**
Established 1895 Incorporated 1905

**DIAMOND CORE DRILLING**
**FOUNDATION TESTING**
**DIAMOND DRILLING & EXPLORATION CO.**
**C. C. Hoover, Pres.**
**15th St., and Spring Way, Pittsburgh, Pa.**
Telephone Grant 8889-R

**MEDART** *means* **EVERYTHING** *in*
**Line Shafting Equipment**
**THE MEDART COMPANY**
*(Formerly Medart Patent Pulley Co.)*
**General Offices and Works: St. Louis, U. S. A.**
**Office and Warehouse: Cincinnati** **Offices: Chicago and Philadelphia**

INSULATED WIRES and CABLES
**"Okonite," "Manson" and Dundee "A," "B" Tapes**
*Send for Handbook*
**THE OKONITE COMPANY**
**THE OKONITE-CALLENDER CABLE COMPANY, INC.**
*Factories:* Passaic, N. J. Paterson, N. J.
*Sales Offices:* New York, Chicago, San Francisco, St. Louis, Atlanta, Birmingham, Pittsburgh, Los Angeles. Pettingell-Andrews Co., Boston, Mass., F. D. Lawrence Electric Co., Cincinnati, O. Novelty Electric Co., Phila, Pa.
*Can. Rep.:* Engineering Materials Limited, Montreal.

*Chattanooga* ARMATURE WORKS
REWINDING REPAIRING REBUILDING ELECTRICAL MACHINERY
CHATTANOOGA, TENN

## EMPLOYMENT AGENCY

GENERAL engineering agency, Emich Bldg., Pittsburgh, proposals; mining engineers, surveyors, general draftsmen, power engineers, chief electricians, coal buyers, coal sales engineers.

## POSITIONS WANTED

EXECUTIVE, experienced in handling bituminous coal mining operations on a large property, as general manager, is open for employment. PW-790, Coal Age, Real Estate Trust Bldg., Phila., Pa.

MINE manager: Fully qualified to handle all details of direct operation and the executive management of bituminous coal mining. PW-793, Coal Age, Leader-News Bldg., Cleveland, Ohio.

POSITION as superintendent or general superintendent, prefer West Virginia, Kentucky or Virginia. PW-792, Coal Age, Leader-News Bldg., Cleveland, Ohio.

## BUSINESS OPPORTUNITIES

### Wanted Coal Company Stores

Successful company store manager wants to buy or lease good operating stores. Able to finance and manage large proposition or buy part and manage good proposition with reliable coal company. BO-787, Coal Age, Real Estate Trust Bldg., Phila., Pa.

### Small Mine For Sale

operating in best section of Elkhorn Field, Pike Co., Ky. Production can be materially increased. Priced right. Write Box 459, Pikeville, Kentucky.

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FOR SALE

Going mine in Jefferson County, Pa., electrically equipped. Producing 100 tons daily. Seam averages 4 feet, no partings. Low operating cost. Price for quick sale less than inventory value.

BO-791, Coal Age
Real Estate Trust Bldg., Philadelphia, Pa.

---

FOR SALE

## Developed Coal Property

in West Virginia consisting of 4,000 acres coal. Necessary improvements to produce 1,000 tons daily. 600 tons daily under contract to July 1st and contract can be renewed for a like or larger tonnage indefinitely due to location of mine. Working Red Stone seam. Pittsburgh seam underlying this property has never been opened. Price $650,000. $100,000 cash, balance on terms. For further particulars apply.

BO-780, Coal Age,
Real Estate Trust Bldg., Philadelphia, Pa.

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FOR SALE

## Rails and Wire

**60 lb. Relaying Rails, with angle bars to match, and 000 copper wire, both in No. 1 condition.**

**THE TOLEDO, FOSTORIA & FINDLAY RAILWAY CO., Fostoria, Ohio**

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## In Replying to "Blind" Ads

be careful to put on envelope the key number in the ad and also local address of office to which reply is sent.

10th Ave. at 36th St., New York
712 Real Estate Trust Bldg., Phila.
359 Leader-News Bldg., Cleveland
7 So. Dearborn St., Chicago, Ill.
883 Mission St., San Francisco

## *Important*

Original letters of recommendation or other papers of value should not be enclosed to unknown correspondents—send copies.

G-31

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### 150 KW. M-G SET

150 kw., 250/275 v., 900 rev. cpd. wd. with interpoles direct connected and mounted on common base with 218 hp., 2200 v., 3 ph., 60 cy., synchronous motor, complete with 3 swbd. panels, practically new. Used 4 months.

### 200 KW. M-G SET

200 kw., 250 v., 600 rev. Lincoln Generator, direct connected and mounted on common base to a 300 hp., 2300 v., 3 ph., 60 cy., 600 rev. Lincoln Synchronous motor with starting equipment and swbd. Perfect condition.

### MINING MACHINES AND LOCO.

2—CE7, Sullivan, 250 v., 6-ft. 6-in. cutter bar.
2—10-ton, 250-v., 36-in. Jeffrey.
2—6-ton, 250-v., 42-in. Goodman.

*WHAT HAVE YOU FOR SALE?*

**MOORHEAD ELEC. MACHY. CO.**
House Bldg., Pittsburgh, Pa.

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## ARCHER ARMSTRONG, INC.

Grand Central Term. Bldg., New York City.
Phones: Vanderbilt 3282-10408.

### AIR COMPRESSORS

4—210-ft. Chicago-Pneu. P2DGL gasoline.
1—360-ft. Chicago-Pneu. NSPE with motor.
1—534-ft. Chicago-Pneu. NSBE with motor.
1—600-ft. Blaisdell with motor.
2—788-ft. Chicago-Pneu. OCBE with motor.
2—877-ft. Ing.-Rand CB-2 with motor.
1—877-ft. Ing.-Rand RB with motor.
3—1302-ft. Ing.-Rand PRE-2 dir. con. 2200-60-2 or 3.
2—2830-ft. Ing.-Rand PRE-2 dir. con. 6600-25-3.
1—2830-ft. Ing.-Rand PRE-2 dir. con. 2200-60-3.
2—5000-ft. Centrifugal compressors, 2-5 lb. pressure, direct connected to 75-hp. motor.
(New Traylor compressors)

### HOISTS

65-hp. DD Clyde with Sw., 220 volt DC.
100-hp. SD Clyde shaft hoist with motor.
200-hp. DD Ottumwa shaft hoist with motor.
5 and 8-ton Westinghouse-Baldwin trolley locomotives, 220 volt DC. 36 to 42 inch gauge.

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FOR SALE

## MINING MACHINERY

3—SA-1090 Morgan-Gardner Shortwall machines.
1—4½-ton Jeffrey Gathering Locomotive.
1—150-Kw., 250 volt D.C. Generator. Belt Drive.
1—250 HP., 18x18 Skinner Automatic Engine.
1—Harrisburg Engine Direct Connected to General Electric 160 Kw., 275 volt, 160 r.p.m. Generator.

**The Hocking Valley Mine Supply Company**
Athens, Ohio

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## BELTING FOR SALE

New, approximately 400 ft. 18-in. width, 5/16-in. thick, rubber faced rubber belting. Will be sacrificed for immediate disposal.

Communicate with

**M. L. TUCKER, LENA RUE COAL CO.**
Lenarue, Kentucky

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FOR SALE

## POWER PLANT

All or part interest in a Hydro Electric and Power Plant, located on the Eagle River in Colorado.

**PERRY STEELE, Gypsum, Colorado**

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## Opportunity to Secure a Synchronous Convertor At A Saving Of 40%

**200 kw. General Electric Mine Type HCC, 250 v., 800 amp. compound wound interpole D.C., 6 ph., 60 cy., 1200 r.p.m. unit, complete with brush lifting device, end play device, speed limit device and squirrel cage winding for self starting from A.C. end. This unit has been completely overhauled, is in condition equal to new and ready for immediate shipment.**

**The Fuerst-Friedman Co.**
**Cleveland, Ohio**

---

## SYNCHRONOUS MOTOR GENERATOR SETS

1—65 kw., 250-v. D.C., 2200-v., 3-ph., 60-cy. A.C. Milwaukee Westinghouse.
1—150 kw., 250-v. D.C., 2200-v., 6-ph., 60-cy. A.C. Westg. rotary.
2—200 kw., 275-v. D.C., 2200/6600-v., 3-ph., 60-cy. A.C. Westg. rotary.

## DIRECT CONNECTED STEAM ENGINE GENERATOR SETS

1—50 kw., 250-v. D.C. General Electric Skinner.
1—75 kw., 250-v. D.C. Crocker-Wheeler Steam Engine Co.
1—150 kw., 250-v. D.C. Burke Harrisburg.
1—250 kw., 250-v. D.C. General Electric Ball.

## MINING MACHINES

1—250-v. D.C., 27-A Jeffrey Breast Machine.
8—250-v. D.C. CE-7 Sullivan Shortwall Machines.
3—250-v. D.C. 35-B Jeffrey Shortwall Machines.
2—250-v. D.C., 28-A Jeffrey Shortwall Machines.
6—250-v. D.C. 12-DA Goodman Shortwall Mining Machines.
1—250-v. D.C. 112-AA Goodman Shortwall Mining Machine.
1—250-v. D.C. 12-AB Goodman Shortwall Mining Machine.
2—220-v., 3-ph., 60-cy. Sullivan or Goodman A.C. Machine.

**Track gauge can be changed to suit your requirements.**

## LOCOMOTIVES

2—3-ton, 42-in. gauge, 250-v. D.C. 1600-K Goodman Gathering Locomotives.
4—4-ton, 39-in. gauge, 250-v. D.C. Morgan Gardner Gathering Locomotives.
1—5-ton, 36-in. gauge, 250-v. D.C. General Electric Gathering Locomotive.
1—6-ton, 30-in. gauge, 250-v. D.C. Jeffrey haulage locomotive.
4—7-ton, 36-in. gauge, 250-v. D.C. Goodman haulage or gathering locomotives.
2—7-ton, 38 or 42-in. gauge, 250-v. D.C. Westinghouse Bar Steel Frame Locomotives.
2—8-ton, 38 or 42-in. gauge, 250-v. D.C. Westinghouse Bar Steel Frame Locomotives.
1—8-ton, 36-in. gauge, 250-v. D.C. General Electric Locomotive, with reel.
3—10-ton, 36-in. gauge, 250-v. D.C. Jeffrey Haulage Locomotives.

**Duquesne Electric & Mfg. Company**
**Pittsburgh, Penna.**

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FOR SALE

## COAL CRUSHER

Jeffery Single Roll, size 30x30, practically new, at a greatly reduced price.

**COMMERCIAL COAL MINING CO.,**
Expedit, Pa.

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## "HONESTLY REBUILT" ELECTRICAL MACHINERY

**MILLER-OWEN ELECTRIC CO., Inc.**
**PITTSBURGH, PENNA.**

**SAVE 30% to 50% ON**

## RAILS-LOCOMOTIVES-CARS

Get our prices on H-M Select Guaranteed Used Railway Equipment and H-M Relaying Rails.

30% to 50% saving. All weights. Stocks at our 4 yards. Prompt shipment made from yard nearest destination saves freight.

Locomotives and cars of every type in serviceable condition.

**Hyman-Michaels Company**
People's Gas Bldg., Chicago
New York St. Louis Pittsburgh San Francisco

## Centrifugal Pumps

3—2½-in. Type A American Centrifugal.
2—3-in. Type I American Centrifugal.
2—3-in. Type C American Centrifugal.
5—3-in. Baker Centrifugal.
48—4-in. Baker Centrifugal.
6—5-in. Goulds Centrifugal.
41—6-in. Baker Centrifugal.
1—8-in. Allis-Chalmers Type S Centrifugal.
6—14-in. Allis-Chalmers Type S Centrifugal direct connected to 300 hp. steam turbine.
5—14-in. Worthington Class B Double Suction direct connected to 300 hp. motor.
6—16-in. Allis-Chalmers Type S direct connected to 300 hp. motor.

**Nashville Industrial Corporation**
Old Hickory, Tennessee

FOR SALE

5—General Electric Gathering Type

## LOCOMOTIVES

6-ton motors, Class LSBT-2T6C, 250 v., 44 gauge track; overall height 44 in. above rail. Equipped with Jeffrey reel Type CS No. 844. Locomotives are in good condition and are now in operation. On account of standardizing on another make of locomotive will make a very attractive price.

Address,
**Milburn By-Products Coal Company**
Milburn, West Va.

FOR SALE

## SHAKER SCREEN

Three Track Parker. Weigh pan and scales. New in 1921. Price $1200.

**THE EUREKA COAL COMPANY**
Terre Haute, Ind.

## RAILS, MINE CARS

100 good serviceable 36-in. gauge cars; price $35.00; also limited quantity of other gauges at attractive price. Avail yourselves of our large stock of new and relaying light rail. Also carry stock of copper wire new and second hand; prices cheerfully quoted.

**M. K. FRANK**
**Union Trust Bldg., Pittsburgh, Pa.**
Park Row Bldg., N. Y.

**IMMEDIATE SHIPMENTS**

## RAILS NEW & RELAY

SPECIALS
550 tons 40 lb. relayers
450 tons 60 lb. relayers
500 tons 80 lb. relayers
300 tons 100 lb. relayers

Also-
FROGS & SWITCHES
SPIKES & BOLTS
TIE PLATES
INDUSTRIAL TRACK ACCESSORIES

**MORRISON & RISMAN CO. INC.**
BUFFALO. N.Y.

## RAILS

Complete stock, all section Relaying Rails. Get in touch with us by 'phone or wire for your requirements.

**LOUIS COHEN & SON, Wilkes-Barre, Pa.**

## RAILS

**SWITCHES AND FROGS**
**LOCOMOTIVES AND CARS**

**L. A. Green Railway Equipment Co.**
**First National Bank Bldg., Pittsburgh, Pa.**

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*One-Fifth The Weight of Cast Iron Pipe*

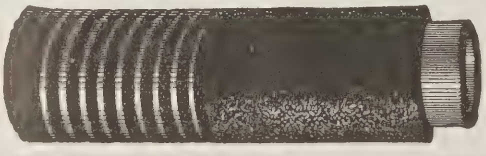
*One-Third The Weight of Wrought Pipe*

**An Absolutely Tight Durable Pipe**

Fully 50% stronger than Straight Riveted Pipe of equal thickness. Light weight and simplicity of bolted connections results in low handling and installation expense. Suitable for Conveying Water, Air, Gas, Exhaust Steam and Wood Pulp.

**Abendroth & Root Mfg. Co.** **Sales Office: Woolworth Bldg., N. Y.**
Pipe Specialists Continuously Since 1867

## Acid-Proof Wood Pipe for mine water



**The Michigan Pipe Co.**
Bay City
Michigan

## STANDARD WOOD PIPE

Made in the Heart of the Mining Regions

Save freight, get quicker deliveries and get wood pipe that stands the gaff. Write, wire or phone.

**Standard Wood Pipe Co., Williamsport, Pa.**

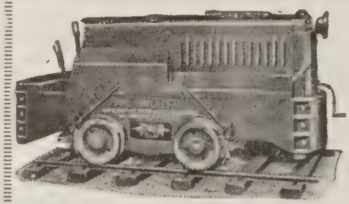
Replace your Iron Pipe with

## WYCKOFF WOOD PIPE

Established 1855

Been in use over 68 years. Used extensively now by the vast majority of mines. Unaffected by acids, fumes, or electrolysis. Investigate.

**A. Wyckoff & Son Co.**
Elmira, N. Y.



## PLYMOUTH

*Gasoline Locomotives*

For mine use and general industrial haulage. Made in 3 to 20 ton sizes and in any track gauge. Write for Catalogs and Performance Bulletins.

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Plymouth, Ohio

**SPECIFY THE BEST** **FOR YOUR MINES**

*A Complete Line of the Highest Grade Track Materials*

*Write for Descriptive Catalog*

SWEET'S TRACK MATERIALS

**SWEET'S STEEL CO** **WILLIAMSPORT, PA.**

## Automatic Aerial Tramway

*does your work quickly-efficiently-economically*

**Interstate Equipment Corp.**
25 Church St., New York City

## ANACONDA COPPER WIRE

ANACONDA COPPER MINING COMPANY
Conway Building, Chicago, Ill.

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Conn.

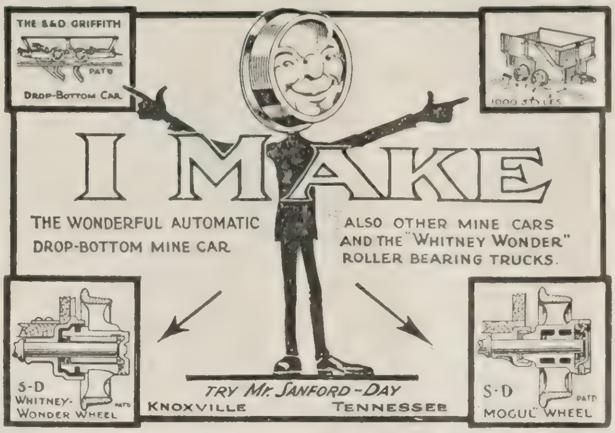
**GOULDS**

A TYPE FOR EVERY SERVICE

*Bulletins on request*

THE GOULDS MANUFACTURING COMPANY
Seneca Falls, N. Y.

**PUMPS**


THE S&D GRIFFITH
PAT'D
DROP-BOTTOM CAR
1000 STYLES
I MAKE
THE WONDERFUL AUTOMATIC DROP-BOTTOM MINE CAR
ALSO OTHER MINE CARS AND THE "WHITNEY WONDER" ROLLER BEARING TRUCKS.
S-D WHITNEY-WONDER WHEEL PAT'D
TRY Mr. SANFORD-DAY
KNOXVILLE TENNESSEE
S-D MOGUL WHEEL PAT'D

**Learn How to Increase Your Gathering Efficiency**

—by writing for details of performance and operation of this wonderful pumping unit. Only two moving parts, easily lubricated, long-lived and fool proof.

*Send today for literature.*

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(Chas. A. Saints)
Oliver Building, Pittsburgh, Pa.

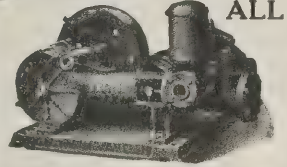
Coal Mine Equipment Co., Pittsburgh, Pa. Coffin & Smith, Scranton, Pa. LaLance Equipment Company, Huntington, West Va. The Cameron Equipment Co., Cleveland, Ohio. General Machinery Co. Birmingham, Alabama.

**VIKING GATHERING PUMP**

**Equip Your Mine With Steel**

Steel Mine Timbers
Steel Cross Ties
Wheels-Axles
Rails-and
Accessories

**Carnegie Steel Company**
PITTSBURGH, PENNA.



**ALL GEARS ENCLOSED**

That means safety to your workmen and protection for the pumping mechanism, too. Self-oiling, quiet running, durable—an ideal mine pump, the Deming Oil-Rite.

Deming "Jupiter Oil Rite" Enclosed Gear, Mine Pump.

*Complete Mine Pump Bulletin on Request*

The Deming Co. (Est. 1882) Salem, Ohio

*Distributors in All Principal Cities*

**Deming**

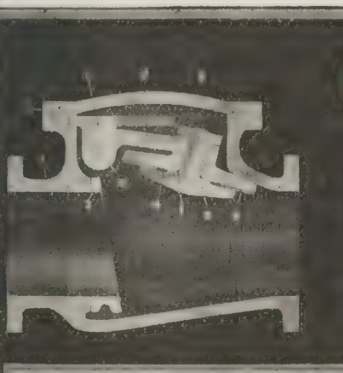
*HAND AND POWER* ***PUMPS*** *FOR ALL USES*

**ALDRICH**

THE ALDRICH PUMP COMPANY
Allentown, Penna.

VERTICAL HORIZONTAL **MINE** TRIPLEX QUINTUPLEX

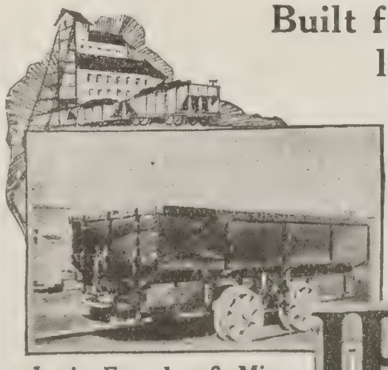
**PUMPS**



**CHECK VALVES**

STRAINERS
PIPE FITTINGS
*for*
*Centrifugal Mine Pumps*

BARRETT, HAENTJENS & CO. — HAZLETON, PA.



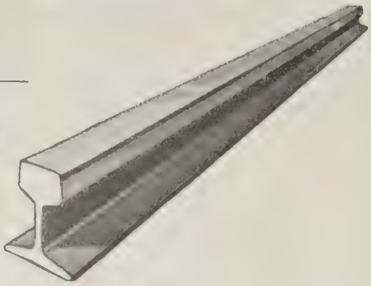
**Built for the long, hard run**

The "Channel-Bar" truck—the cold rolled steel floating axles with dust proof bearings—the steel plate center bumpers—these features explain in part the Irwin capacity for long service.

Irwin Foundry & Mine Car Co.
Irwin, Pa.

**IRWIN**

# Get this Straight—and Save Costs!



Absolutely straight rails of the proper analysis steel for mine traffic, ready to lay and *stay laid,* will save money in replacements, derailments and labor costs.

Don't use rails of uncertain quality and have to replace them within a year.

*Send for Catalog and Bulletins.*

**The West Virginia Rail Co.**
Huntington, W. Va.

W.VA.RAIL

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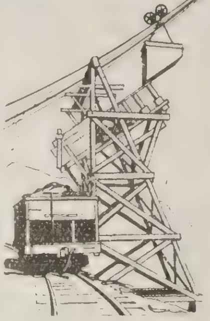
# B&B Two-Bucket Aerial Tramways



for economical haulage of coal and disposal of waste

BRODERICK & BASCOM ROPE CO.,
St. Louis, Mo.
New York Office and Warehouse: 76 Warren St.
Western Office: Seattle, Wash.
Factories: St. Louis and Seattle

*Manufacturers of famous Yellow Strand and other reliable wire ropes.*

JR521

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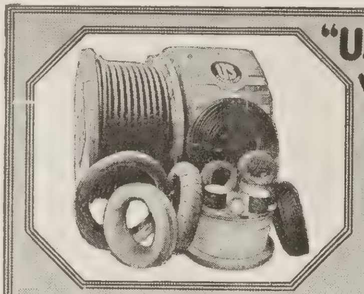
# "U.S." PARACORE Wires and Cables



TOP QUALITY *for* UNDERGROUND WORKINGS

*Write for catalog C-24*

**United States Rubber Company**
1790 Broadway New York
*Branches in Every Industrial Center*

UNITED STATES RUBBER COMPANY US RUBBER SYSTEM AND ASSOCIATED COMPANIES
Trade Mark

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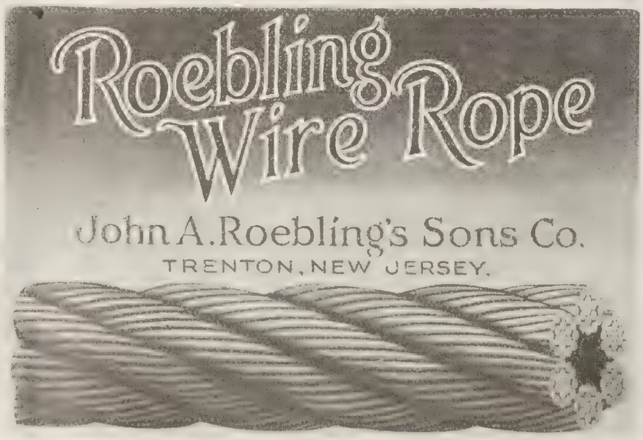

# Roebling Wire Rope

John A. Roebling's Sons Co.
TRENTON, NEW JERSEY.

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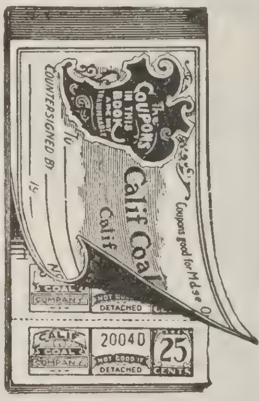
# Commissary Coupon Books



We confine ourselves exclusively to the manufacture of coupon books, and have the necessary experience and modern equipment to furnish first-class and absolutely accurate books at minimum cost.

Write us for illustrated folder, samples and prices.

**Southern Coupon Co.**
Birmingham, Ala.

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## "Hercules" (Red-Strand) Wire Rope

is backed by a long service record. It has actually proven that it is an economical rope for heavy work of all kinds.

Made Only By

**A. Leschen & Sons Rope Company**
St. Louis
New York Chicago Denver San Francisco

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## Hazard Wire Rope Withstands Every Wear-test.

Increasingly heavy loads and rapid acceleration; the grinding and tearing effect of hard slope conditions; the severe bending stresses set up as the Ropes run over the drums and sheaves; problems such as these are successfully solved by Hazard Wire Rope.

HAZARD MFG. CO.
Wilkes-Barre, Pa.

HAZARD

# WHAT AND WHERE TO BUY

## A Classified Index of Advertisers in this Issue

This index is published as a convenience to the reader. Every care is taken to make it accurate, but *Coal Age* assumes no responsibility for errors or omissions.

**For Alphabetical Index See Last Page**

**Aerial Tramways**
- American Steel & Wire Co.
- Broderick & Bascom Rope Co.
- Interstate Equipment Corp.
- Leschen & Sons Rope Co., A

**Air Aftercoolers**
- Chicago Pneumatic Tool Co
- Ingersoll-Rand Co.

**Air Guns**
- Jenkins Bros.

**Air Receivers**
- Chicago Pneumatic Tool Co.
- Ingersoll-Rand Co.

**Appraisals**
- Allen & Garcia Co.

**Armature Repair Machinery**
- Electric Service Supplies Co.

**Armatures and Field Coils**
- Chattanooga Armature Wks.

**Ash Handling Machinery**
- Combustion Engr'ing Corp

**Augers, Coal (See Drills)**

**Banking Institutions**
- Coal & Iron National Bank

**Bars, Iron and Steel**
- American Car and Foundry Co.

**Bars, Steel**
- Carnegie Steel Co.
- Central Steel Co.
- Ryerson & Son, Inc., Jos. T

**Battery Boxes**
- Paragon Electric Co.

**Bearings, Ball and Roller**
- Hyatt Roller Bearing Co.
- Timken Roller Bearing Co.

**Bearings, Tapered**
- Timken Roller Bearing Co.

**Bearings, Thrust**
- Timken Roller Bearing Co.

**Belting, Silent Chain**
- Morse Chain Co.

**Belts, Conveyor**
- Jeffrey Mfg. Co.
- Link-Belt Co.
- U. S. Rubber Co.
- Webster Mfg. Co.

**Belts, Elevator**
- U. S. Rubber Co.

**Belts, Transmission**
- U. S. Rubber Co.

**Bit Sharpeners**
- Ingersoll-Rand Co.
- Little Giant Co.
- Sullivan Machinery Co.

**Bit Steel & Mining Mch. Bits**
- Pgh. Knife & Forge Co.

**Blasting Supplies**
- Du Pont de Nemours & Co., Inc., E. I.

**Blowers, Centrifugal**
- De Laval Steam Turbine Co
- Ingersoll-Rand Co.

**Boilers, Water Tube**
- Babcock & Wilcox Co.

**Bolts, Nuts and Rivets**
- American Car and Foundry Co.

**Bonding Machines**
- Una Welding & Bonding Co

**Books, Coupon**
- Southern Coupon Co.

**Books, Technical**
- McGraw-Hill Book Co., Inc.

**Box Car Loaders**
- Fairmont Mining Mchy. Co.
- Link-Belt Co.

**Brattice Cloth**
- Marine Canvas Supply Corp.

**Breaker Machinery**
- Vulcan Iron Works
- Wilmot Engineering Co.

**Buckets**
- Pittsburgh Coal Washer Co.

**Buckets, Clamshell**
- Link-Belt Co.

**Buckets, Coal Handling**
- Link-Belt Co.

**Buckets, Elevator**
- Hendrick Mfg. Co.
- Link-Belt Co.
- Webster Mfg. Co.

**Cable, Portable**
- U. S. Rubber Co.

**Cableways**
- Flory Mfg. Co., S.
- Interstate Equipment Corp.

**Cages**
- Morrow Mfg. Co.
- Vulcan Iron Works

**Cages, Self-Dumping**
- Car-Dumper & Equip. Co.

**Cagers, Automatic**
- Holmes & Bros., Inc., Robt.

**Canvas Products**
- Marine Canvas Supply Corp

**Car Controls**
- Car-Dumper & Equip. Co.

**Car Dumpers, Rotary**
- Car-Dumper & Equip. Co.

**Car Dumps**
- Pittsburgh Coal Washer Co

**Car Hauls**
- Jeffrey Mfg. Co.
- Link-Belt Co.
- Pittsburgh Coal Washer Co
- Webster Mfg. Co.

**Car Irons**
- American Car and Foundry Co.

**Car Loaders (See Box Car Loaders)**

**Car Lubricants**
- Hulburt Oil & Grease Co.

**Cars, Mine Air Compressor**
- Chicago Pneumatic Tool Co.
- Ingersoll-Rand Co.

**Car Retarders**
- Fairmont Mining Mchy. Co
- Webster Mfg. Co.

**Cars and Car Wheels**
- American Car and Foundry Co.
- Day-Evans Iron Wks., Inc.
- Lorain Steel Co.
- Ottumwa Iron Works
- Sanford-Day Iron Works
- Southern Wheel Co.
- Treadwell Engineering Co.
- Watt Mining Car Wheel Co

**Cars, Roller Bearings for**
- Hyatt Roller Bearing Co.

**Castings**
- Sanford-Day Iron Works
- Vulcan Iron Works

**Castings, Iron and Steel**
- Treadwell Engineering Co.

**Cement-Guns**
- Cement-Gun Co., Inc.

**Chains**
- Jeffrey Mfg. Co.
- Link-Belt Co.
- Pittsburgh Coal Washer Co.
- Ryerson & Son, Inc., Jos. T.

**Chemicals**
- Du Pont de Nemours & Co., Inc., E. I.

**Chutes**
- Fairmont Mining Mchy. Co.
- Phillips M. & M. Supply Co.
- Sanford-Day Iron Works

**Clamps, Trolley Wire**
- Electric Railway Equip. Co
- Ohio Brass Co.

**Coal Air Cleaning Plants**
- Roberts & Schaefer Co.

**Coal & Ash Handling Mchry.**
- Jeffrey Mfg. Co.
- Link-Belt Co.
- Webster Mfg. Co.

**Coal Cleaning Machinery**
- American Coal Cleaning Corp.
- Roberts & Schaefer Co.

**Coal Drills, Electric & Pneu.**
- Chicago Pneumatic Tool Co.
- Howells Mining Drill Co.

**Coal Handling Machinery**
- Fairmont Mining Mchy. Co.
- Holmes & Bros., Inc., Robt.
- Roberts & Schaefer Co.

**Coal Mining Plants**
- Link-Belt Co.
- Roberts & Schaefer Co.
- Webster Mfg. Co.

**Coal Preparation Machinery**
- American Coal Cleaning Corp.

**Coal Storage and Rehandling Machinery**
- Fairmont Mining Mchy. Co.
- Link-Belt Co.

**Commutators**
- Chattanooga Armature Wks.

**Compressors, Air**
- Allis-Chalmers Mfg. Co.
- Cement-Gun Co., Inc.
- Chicago Pneumatic Tool Co.
- Goulds Mfg. Co.
- Ingersoll-Rand Co.
- Sullivan Machinery Co.

**Concentrators**
- Deister Concentrator Co.
- Deister Machine Co.

**Concrete Construction**
- Cement-Gun Co., Inc.

**Concrete Finishing Tools**
- Cement-Gun Co., Inc.

**Condensers**
- Ingersoll-Rand Co.

**Consulting Engineers (and see Directory of Consulting Engineers, page 28)**
- Allen & Garcia Co.

**Conveyors, Chain Flight**
- Link-Belt Co.
- Webster Mfg. Co.

**Conveyors, Coal**
- Conveyor Sales Co., Inc.
- Fairmont Mining Mchry. Co.
- Jeffrey Mfg. Co.
- Link-Belt Co.
- Marion Mch. F. & S. Co.
- Pittsburgh Coal Washer Co
- U. S. Rubber Co.
- Webster Mfg. Co.

**Conveyors, Underground**
- Conveyors Sales Co., Inc.

**Couplings**
- American Car and Foundry Co.

**Couplings, Flexible**
- Ganschow Co., Wm.
- Lipe, Inc., W. C.

**Cranes, Locomotive**
- Link-Belt Co.

**Crossing (See Switches, Frogs and Crossings)**

**Crushers, Coal**
- American Pulverizer Co.
- Jeffrey Mfg. Co.
- Link-Belt Co.
- Marion Mch. F. & S. Co.
- Pennsylvania Crusher Co.
- Pittsburgh Coal Washer Co.
- Raymond Bros. Impact Pulverizer Co.
- Vulcan Iron Works
- Webster Mfg. Co.

**Crushers, Rock**
- Raymond Bros. Impact Pulverizer Co.

**Cutter Lubricants**
- Hulburt Oil & Grease Co.

**Dealers' Machinery (Rail, Pipe and Miscellaneous Equipment)**
- Allegheny Equip. Corp.
- Archer Armstrong, Inc
- Cohen & Son, L.
- Duquesne Elec. & Mfg. Co.
- Frank, M. K.
- Green Railway Equip. Co. L. A.
- Hyman-Michaels Co.
- Miller-Owen Electric Co.
- Moorhead Elec. Mchry. Co
- Moorison & Risman Co., Inc.
- Myers & Associates, J. N.
- Nashville Industrial Corp.
- Sherwood, E. C.

**Diamond Core Drill, Cont'ing**
- Diamond Drilling & Exp. Co.
- Punxsutawney D. & C. Co.
- Sullivan Machinery Co.

**Dies, Plain & Form Forging**
- Little Giant Co.

**Drafting Material (See Eng. Instruments and Supplies)**

**Dredges**
- Marion Steam Shovel Co.

**Driers, Sand**
- Electric Service Supplies Co

**Drills, Air**
- Chicago Pneumatic Tool Co.
- Ingersoll-Rand Co.
- Sullivan Machinery Co.

**Drills, Core**
- Chicago Pneumatic Tool Co.
- Diamond Drilling & Exp. Co
- Ingersoll-Rand Co.
- Sullivan Machinery Co.

**Drills, Electric**
- Chicago Pneumatic Tool Co.
- Cincinnati Electrical Tool Co.
- Diamond Machine Co.
- Howells Mining Drill Co.
- Jeffrey Mfg. Co.
- Sullivan Machinery Co.

**Drills Electric (Portable)**
- Chicago Pneumatic Tool Co.
- Cincinnati Electrical Tool Co.

**Drills, Power**
- Chicago Pneumatic Tool Co.

**Drills, Rock**
- Chicago Pneumatic Tool Co.
- Ingersoll-Rand Co.

**Drives, Silent Chain**
- Morse Chain Co.

**Dumps, Crossover**
- Sanford-Day Iron Works

**Dumps, Rotary**
- Link-Belt Co.
- Webster Mfg. Co.

**Dynamite & High Explosives (See Explosives)**

**Dynamos (See Generators)**

**Electric Haulage Supplies**
- Electric Service Supplies Co

**Electrical Equipment, Used**
- Chattanooga Armature Wks
- Duquesne Elec. & Mfg. Co.
- Miller-Owen Elec. Co.

**Electrification, Mine**
- Allen & Garcia Co.

**Elevators and Conveyors**
- Jeffrey Mfg. Co.
- Link-Belt Co.
- Montgomery Coal Washing & Mfg. Co.
- Pittsburgh Coal Washer Co.
- Webster Mfg. Co.

**Engineering Counsel**
- Allen & Garcia Co.

**Engineering & Technical Books**
- McGraw-Hill Book Co., Inc.

**Engines, Corliss**
- Vulcan Iron Works

**Engines, Hoist & Haulage**
- Holmes & Bros., Inc., Robt.
- Vulcan Iron Works

**Engines, Oil**
- Chicago Pneumatic Tool Co.
- Ingersoll-Rand Co.

**Engines, Steam**
- Chicago Pneumatic Tool Co.

**Engines, Steam, Four Valve**
- Ridgway Dynamo & Eng. Co.

**Engines, Steam Single Valve**
- Ridgway Dynamo & Eng. Co.

**Engines, Steam, Una-Flow**
- Nordberg Mfg. Co.
- Ridgway Dynamo & Eng. Co.

**Excavating Machinery**
- Marion Steam Shovel Co.

**Explosives**
- Du Pont de Nemours & Co., Inc., E. I.

**Explosives, Permissable**
- Du Pont de Nemours & Co., Inc., E. I.

**Fans, Ventilating**
- Jeffrey Mfg. Co.
- Vulcan Iron Works

**Fittings, Wire Rope (See Rope Wire)**

**Flooring, Steel**
- Hendrick Mfg. Co.

**Frogs, Cast**
- West Virginia Rail Co.

**Furnaces**
- Combustion Eng'r'g Corp.

**Gage Cocks**
- Jenkins Bros.
- Ohio Brass Co.

**Gages, Water Boiler and Locomotive**
- Ohio Brass Co.

**Gaskets**
- Jenkins Bros.

**Gear Cases**
- Electric Service Supplies Co.

**Gears**
- Aldrich Pump Co.
- Fawcus Machine Co.
- Ganschow Co., Wm.
- James Mfg. Co., D. O.
- Lipe, Inc., W. C.
- Medart Co.
- Tool Steel Gear & Pinion Co.
- Vulcan Iron Works

**Gears, Spur, Speed Reducing**
- Ganschow Co., Wm

**Gears, Worm Speed Reducing**
- De Laval Steam Turbine Co.

**Generator, A.C. & D.C.**
- Ridgway Dynamo & Eng. Co

**Generators and Generating Units**
- Allis-Chalmers Mfg. Co.
- Ridgway Dynamo & Eng. Co

**Grates, Traveling**
- Combustion Eng'ring Corp.

**Grating, Steel**
- Hendrick Mfg. Co.

**Greases**
- Hulburt Oil & Grease Co.
- Ohio Grease Co.
- Sanford-Day Iron Works
- Waverly Oil Works Co.

**Grinders, Portable**
- Chicago Pneumatic Tool Co.

**Hammers, Power**
- Little Giant Co.
- Sullivan Machinery Co.

**Hangers (See Pulleys)**

**Headlights, Arc & Incand.**
- Ohio Brass Co.

**Headlights, Locomotive**
- Electric Service Supplies Co.

**Heaters, Air**
- Combustion Eng'r'g Corp.

**Heaters, Electric Rivet**
- American Car and Foundry Co.

**Hitchings, Mine Car**
- Pgh. Knife & Forge Co.

**Hoist, Lubricants**
- Hulburt Oil & Grease Co.

**Hoists**
- Flory Mfg. Co., S.

**Hoists, Electric**
- Allis-Chalmers Mfg. Co.
- Diamond Machine Co.
- Holmes & Bros., Inc., Robt.
- Lipe, Inc., W. C.
- Link-Belt Co.
- Nordberg Mfg. Co.
- Ottumwa Iron Works
- Thomas Elevator Co.
- Vulcan Iron Works

**Hoists, Mine, Steam & Elec.**
- Treadwell Engineering Co.

**Hoists, Portable**
- Chicago Pneumatic Tool Co.
- Ingersoll-Rand Co.
- Sullivan Machinery Co.

**Hoists Room**
- Treadwell Engineering Co.

**Hoists, Skip**
- Allen & Garcia Co.

**Hoists, Steam**
- Allis-Chalmers Mfg. Co.
- Nordberg Mfg. Co.
- Ottumwa Iron Works
- Thomas Elevator Co.
- Vulcan Iron Works

**Hose, Air**
- Chicago Pneumatic Tool Co.
- U. S. Rubber Co.

**Hose, Fire**
- U. S. Rubber Co.

**Hose, Steam**
- U. S. Rubber Co.

**Hydraulic Machinery**
- Allis-Chalmers Mfg. Co.

**Incline Plane Machinery**
- Fairmont Mining Mchry. Co.
- Sanford-Day Iron Works

**Insulators, Section**
- Electric Railway Equip. Co.

**Jointing, Asbestos**
- Jenkins Bros.

**Lathes, Wood & Metal**
- Little Giant Co.

**Lightning Arresters**
- Electric Service Supplies Co.

**Loaders, Box Car (See Box Car Loaders)**

**Loaders, Mine Car**
- Coloder Co., Inc.
- Jeffrey Mfg Co.
- Link-Belt Co.

**Loading Apparatus**
- Coloder Co., Inc.
- Diamond Machine Co.

**Loading Booms**
- Fairmont Mining Mchry. Co.
- Jeffrey Mfg. Co.
- Link Belt Co.
- Montgomery Coal Washing & Mfg. Co.
- Pittsburgh Coal Washer Co
- Webster Mfg. Co.

**Loading Machines**
- Coloder Co., Inc.
- Joy Manufacturing Co

**Loading Machines, Underground**
- Joy Manufacturing Co.
- Nordberg Mfg. Co.

**Locomotive Tires**
Midvale Co.

**Locomotives, Compressed Air**
Porter Co., H. K.
Vulcan Iron Works

**Locomotives, Electric**
Jeffrey Mfg. Co.
Vulcan Iron Works

**Locomotives, Gasoline**
Fate-Root-Heath Co.
Vulcan Iron Works
Whitcomb & Co., Geo. D.

**Locomotives, Geared**
Lima Locomotive Wks., Inc.

**Locomotives, Steam**
Lima Locomotive Wks. Inc.
Porter Co., H. K.
Vulcan Iron Works

**Locomotives, Storage Battery**
Jeffrey M'fg. Co.
Vulcan Iron Works
Whitcomb Co., Geo. D.

**Lubricants**
Hulburt Oil & Grease Co.
Ohio Grease Co.
Waverly Oil Works Co.

**Lubricators**
Hulburt Oil & Grease Co.
Ohio Grease Co.
Waverly Oil Works Co.

**Machinery, Special**
Lipe, Inc., W. C.
Vulcan Iron Works

**Machine, Coal Testing (See Coal Testing Machines)**

**Mechanical Loaders**
Coloder Co., Inc.

**Mine Construction Service**
Allen & Garcia Co.

**Mine Doors, Automatic**
American Mine Door Co.

**Mine Timbers, Steel**
Carnegie Steel Co.

**Mining Equipment**
Conveyor Sales Co., Inc.

**Mining Machines**
Jeffrey Mfg. Co.
Sullivan Machinery Co.

**Motor Generators**
Ridgway Dynamo & Eng. Co

**Motors**
Allis-Chalmers Mfg. Co.

**Nitrogen**
Linde Air Products Co.

**Oil & Grease Cups**
Hulburt Oil & Grease Co.
Ohio Grease Co.

**Oils**
Waverly Oil Works Co.

**Oxygen in Cylinders**
Linde Air Products Co.

**Packing**
Jenkins Bros.
U. S. Rubber Co.

**Paints**
Du Pont de Nemours & Co., Inc., E. I.

**Perforated Metals**
Harrington & King Perforating Co.

**Picking Tables**
Fairmont Mining Mchry. Co.
Jeffrey Mfg. Co.
Link-Belt Co.
Montgomery Coal Washing & Mfg. Co.
Pittsburgh Coal Washer Co.
Webster Mfg. Co.

**Pipe**
American Car and Foundry Co.
Michigan Pipe Co.
Ryerson & Son, Inc., Jos. T.

**Pipe, Cast Iron**
Cast Iron Pipe Publicity Bureau

**Pipe Cutting and Threading Machinery**
Treadwell Engineering Co.

**Pipe, Spiral Riveted**
Abendroth & Root Mfg. Co.

**Pipe, Wood**
Standard Wood Pipe Co.
Wyckoff & Son Co., A.

**Pipe, Wrought Iron**
Reading Iron Co.

**Plates, Steel**
Carnegie Steel Co.

**Pneumatic Coal Separators**
American Coal Cleaning Corp.
Roberts & Schaefer Co.

**Powder, Blasting**
Du Pont de Nemours & Co., Inc., E. I.

**Power Plants**
Allen & Garcia Co.

**Power Transmission Mchry.**
Jeffrey Mfg. Co.
Link-Belt Co.
Morse Chain Co.
Webster Mfg. Co.

**Pulleys, Shafting and Hangers**
Electric Railway Equip. Co.
Hyatt Roller Bearing Co.
Medart Co.

**Pulverized Fuel Equipment**
Combustion Eng'ring Corp.

**Pulverizers, Coal and Coke**
American Pulverizer Co.
Jeffrey Mfg. Co.
Raymond Bros. Impact Pulverizer Co.

**Pulverizers, Rock**
Raymond Bros. Impact Pulverizer Co.

**Pump Plungers**
Aldrich Pump Co.
Birdsboro Steel Foundry & Machine Co.

**Pumps, Boiler Feed**
Boyts, Porter & Co.
Cameron Steam Pump Wks. A. S. (Ingersoll-Rand Co.)
Barrett, Haentjens & Co.
Deming Co.

**Pumps, Centrifugal**
Allis-Chalmers Mfg. Co.
Barrett, Haentjens & Co.
Cameron Steam Pump Wks. A. S. (Ingersoll-Rand Co.)
De Laval Steam Turbine Co.
Goulds Mfg. Co.

**Pumps, Gathering**
Boyts, Porter & Co.
Power Equipment Co.

**Pumps, Mine**
Aldrich Pump Co.
Boyts, Porter & Co.
Deming Co.

**Pumps Pneumatic Air Lift**
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.
Sullivan Machinery Co.

**Pumps, Power**
Boyts, Porter & Co.
Deming Co.
Fairmont Mining Mchry. Co.

**Pumps, Rotary**
Power Equipment Co.

**Pumps, Vacuum**
Chicago Pneumatic Tool Co.
Ingersoll-Rand Co.
Sullivan Machinery Co.

**Rail Bonds**
Electric Service Supplies Co.
Ohio Brass Co.,
Una Welding & Bonding Co.

**Rails and Rail Joints**
Carnegie Steel Co.
Ryerson & Son, Inc., Jos. T.
Sweet's Steel Co.
West Virginia Rail Co.

**Rails, Extension**
Midland Steel Products Co.

**Rescreeners**
Allen & Garcia Co.

**Rock Dusting Machines**
Diamond Machine Co.

**Roller Bearings (See Bearings, Ball & Roller)**

**Rope, Manila & Jute**
Broderick & Bascom Rope Co.

**Rope, Transmission**
Broderick & Bascom Rope Co.

**Rope, Wire**
American Steel & Wire Co.
Broderick & Bascom Rope Co.
Hazard Mfg. Co.
Leschen & Sons Rope Co., A.
Roebling's Sons Co., J. A.
Ryerson & Son, Inc., Jos. T.

**School and Colleges (See Consulting Engrs. Directory, page 28)**

**Scraper Loaders**
Diamond Machine Co.

**Screens and Perforated Sheeting**
Chicago Perforating Co.
Deister Concentrator Co.
Earlington Machine Wks.
Harrington & King Perforating Co.
Hendrick Mfg. Co.
Jeffrey Mfg. Co.
Link-Belt Co.
Marion Mch. F. & S. Co.
Montgomery Coal Washing & Mfg. Co.

**Screens, Shaker**
Earlington Machine Wks.
Fairmont Mining Mchry. Co.
Pittsburgh Coal Washer Co.

**Screens, Vibrating**
Deister Concentrator Co.

**Second-Hand Equipment (See Searchlight Section)**
Allegheny Equip. Corp.
Archer Armstrong, Inc.
Cohen & Son, L.
Du Pont de Nemours & Co., Inc., E. I.
Duquesne Elec. & Mfg. Co.
Frank, M. K.
Green Railway Equip. Co., L. A.
Hyman-Michaels Co.
Miller-Owen Electric Co.
Moorhead Elec. Mchry. Co.
Moorison & Risman Co., Inc.
Myers & Associates, J. N.
Nashville Industrial Corp.
Sherwood, E. C

**Shapes, Structural Steel**
Carnegie Steel Co.

**Sheaves and Rollers**
Day-Evans Iron Works
Medart Co.
Sanford-Day Iron Works
Vulcan Iron Works

**Shovels, Electric**
Marion Steam Shovel Co.

**Shovels, Gasoline**
Marion Steam Shovel Co.

**Shovels, Steam**
Marion Steam Shovel Co.

**Signal Systems**
Electric Service Supplies Co.

**Speed Reducers**
Ganschow Co., Wm.

**Splices, Cable**
American Mine Door Co.

**Splices, Trolley Wire**
American Mine Door Co.
Ohio Brass Co.

**Sprocket Wheels**
Jeffrey Mfg. Co.
Jenkins Bros.
Link-Belt Co.
Medart Co.
Morse Chain Co.
Webster Mfg. Co.

**Steps, Ladder & Stair, Non-Slip**
Hendrick Mfg. Co.

**Stokers, Hand**
Combustion Engr'ing Co.

**Stokers, Mechanical**
Babcock & Wilcox Co., The
Combustion Engr'ing Co.

**Surveying Instrument (See Engineering Instruments and Supplies)**

**Switches, Frogs and Crossings**
Central Frog & Switch Co.
Sweet's Steel Co.
Weir Kilby Corp.
West Virginia Rail Co.

**Tables, Coal Washing**
Deister Concentrator Co.
Deister Machine Co.

**Tape, Friction**
U. S. Rubber Co.

**Tapes, Insulating**
Okonite Co., The

**Tape, Splicing Compound**
U. S. Rubber Co.

**Tarpaulins**
Marine Canvas Supply Corp.

**Telephone Equipment**
Paragon Electric Co.
Rome Wire Co.

**Telephones, Mines**
Electric Service Supplies Co.

**Testing Laboratories (See Consulting Engs. Directory)**

**Ties, Steel**
Carnegie Steel Co.
Fairmont Mining Mchry. Co.
Sweet's Steel Co.
West Virginia Rail Co.

**Tipples and Tipple Equipt.**
Allen & Garcia Co.
Fairmont Mining Mchry Co.
Jeffrey Mfg. Co.
Link-Belt Co.
Marion Mch. F. & S. Co.
Pittsburgh Coal Washer Co.
Roberts & Schaefer Co.
Webster M'fg. Co.

**Tires, Truck**
U. S. Rubber Co.

**Track Materials**
Sweet's Steel Co.

**Tracks, Portable Rail, etc.**
Central Frog & Switch Co.
Lorain Steel Co.
Sweet's Steel Co.
Weir Kilby Corp.
West Virginia Rail Co.

**Track Shifters**
Nordberg Mfg. Co.

**Tramways, Aerial (See Aerial Tramways)**

**Traps, Steam**
Jenkins Bros.

**Treads, Non-Slip**
Hendrick Mfg. Co.

**Treads, Stair**
Hendrick Mfg. Co.

**Trolley Material, Overhead**
Electric Railway Equip. Co.
Electric Service Supplies Co.
Ohio Brass Co.

**Trolley Wheel Bushings**
Electric Railway Equip. Co.

**Trolley Wheels and Harps**
Electric Railway Equip. Co.
Ohio Brass Co.

**Trolley Wire**
Anaconda Copper Mining Co.
Roebling's Sons Co., J. A.

**Trucks, Car**
American Car and Foundry Co.

**Trucks, Hollow Axle**
Southern Wheel Co.

**Trucks and Tractors**
Ford Motor Co.

**Turbines, Steam**
Allis-Chalmers Mfg. Co.
Barrett, Haentjens & Co.
DeLaval Steam Turbine Co.
Ridgway Dyn. & Eng. Co.

**Tubining, Flexible**
Du Pont de Nemours & Co., Inc., E. I.

**Valve Discs**
Jenkins Bros.
U. S. Rubber Co.

**Valves**
American Car and Foundry Co.
Jenkins Bros.
Ohio Brass Co.

**Washeries, Coal**
Allen & Garcia Co.
American Rheolaveur Corp.
Chance & Co., H. M.
Deister Concentrator Co.
Deister Machine Co.
Link-Belt Co.
Montgomery Coal Washing & Mfg. Co.
Pittsburgh Coal Washer Co.
Staples, H. O.
Webster Mfg. Co.

**Waste**
Broderick & Bascom Rope Co.

**Weight Baskets (See Tipple Equipment)**

**Welders**
Una Welding & Bonding Co.

**Welders, Electric, Portable, Rail Bond**
Ohio Brass Co.
Una Welding & Bonding Co.

**Welders, Rail Joint**
Ohio Brass Co.
Una Welding & Bonding Co.

**Welding Apparatus**
Ohio Brass Co.
Una Welding & Bonding Co.

**Welding Electrodes**
Una Welding & Bonding Co.

**Wheels, Car (See Cars and Car Wheels)**

**Wheels, Steel**
Carnegie Steel Co.
Pittsburgh Coal Washer Co.

**Wire and Cable**
American Steel & Wire Co.
Anaconda Copper Mining Co.
Broderick & Bascom Rope Co.
Hazard Mfg. Co.
Leschen & Sons Rope Co., A.
Paragon Electric Co.
Roebling's Sons Co., J. A.
Rome Wire Co.
Simplex Wire & Cable Co.

**Wire and Cable, Insulated**
American Steel & Wire Co.
Rome Wire Co.
U. S. Rubber Co.

**Wire Rope**
**(See Rope, Wire)**

**Wire, Trolley**
**(See Trolley Wire)**

**Ryerson Steel**

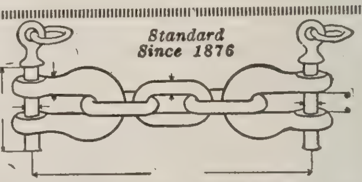
Bars
Shapes
Plates
Shafting
Tubes
Rivets
Bolts and Nuts
Boiler Fittings
Reinforcing Steel
Corrugated Sheets
Galvanized Sheets
Babbitt, etc.

*Write for Journal and Stock List.*

**JOSEPH T. RYERSON & SON INC.** CHICAGO ST. LOUIS CINCINNATI DETROIT BUFFALO NEW YORK

**"SUPERIOR"**
**Mine Car Hitchings**

The extra strength of *"Superior"* Mine Car Hitchings assures safety and long service life. We have specialized on *"Superiors"* since 1876 and will offer you facts to prove in how many ways they are better.



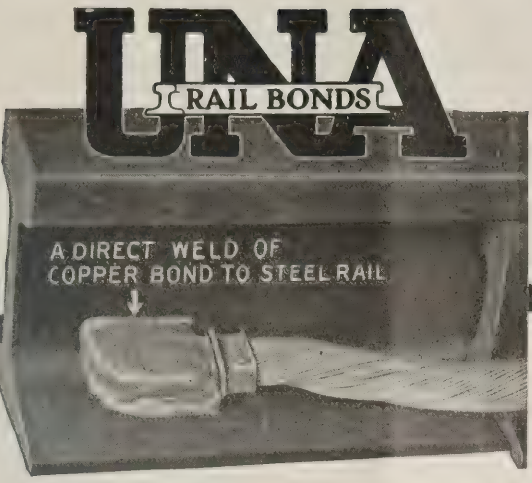
*Standard Since 1876*

**Pittsburgh Knife and Forge Co., Coraopolis, Pa.** *Established 1876*
Successors Pittsburgh Steel Mfg. Co. and Wm. Harris & Son Co.

ROTARY CAR-DUMPERS FOR MINE CARS

Rotary Dumpers for Railroad Cars
Car Control and Caging Equipment
Trip Control Devices
CAR-DUMPER & EQUIPMENT CO.
MANUFACTURERS OF THE ROTARY CAR-DUMPER
RAMSAY-WOOD-CLAGHORN AND OTHER PATENTS
Skip Loading Gates
The "Solidcar" Self-Dumping Cage
The Mechanical Mine Car Spragger
Grand Crossing—CHICAGO
Westinghouse Bldg.—PITTSBURGH

**ROME**
**SUPER SERVICE**
Cords and Cables
ROME WIRE CO.
BUFFALO, N. Y. ROME, N. Y.
R



***The electrical resistance of UNA Rail Bonds is extremely low because the return current passes from rail to rail through copper and copper only.***

*The UNA Bond is made of copper.*

*It is welded to the rail with copper.*

*In the welding operation every strand of the bond becomes a part of the welded bond head.*

*The area of contact of the copper to steel weld is six times the area of the bond itself.*

***With a continuous, unbroken path of copper from rail to rail the unusually high electrical conductivity of UNA Rail Bonds is an easily understood fact.***

*Send for a sample of a UNA Copper to Steel weld.*

**UNA Welding and Bonding Co.**
Cleveland, Ohio

*UNA Rail Bonds, Processes, Molds and Mold Parts fully protected by U. S. Letters Patent.*

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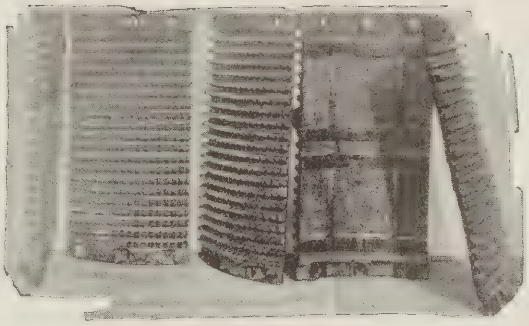
# "Tool Steel" Crusher Segments Outlast Manganese Steel



In Segments and in rolls for crushing coal, careful tests show that "Tool Steel" material will outlast manganese in the ratio of about 4 to 1.

Send us your inquiries and blueprints.

The Tool Steel Gear & Pinion Co.
Cincinnati, Ohio

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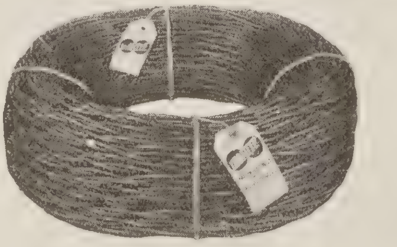

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American Steel & Wire Company

AERIAL WIRE ROPE TRAMWAYS
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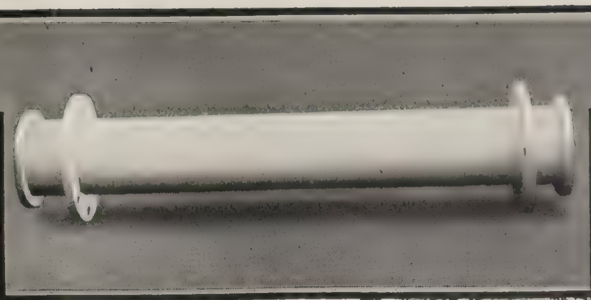
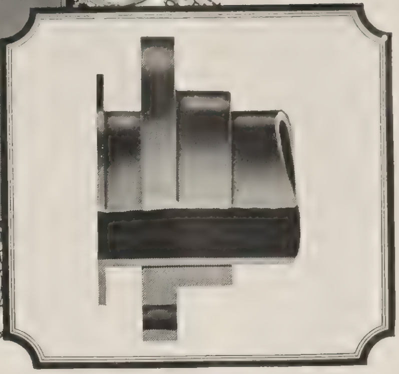
Reinforced Van Stone Joint Showing Square Corner



A length of Van Stoned Reading Pipe, ready for installation.



Reinforced Square Corner Van Stone Joint showing Loose Flange.

# *An Accomplishment of Interest to the Engineering Profession*

Ever since the Van Stone joint was perfected, it has been the desire of the engineering profession to successfully Van Stone genuine wrought iron pipe. Owing to the structure of this metal, however, the very quality (the siliceous slag content) which protects genuine wrought iron from corrosion was that which prevented the formation of the square-edged, strong flange required for a perfect Van Stone joint.

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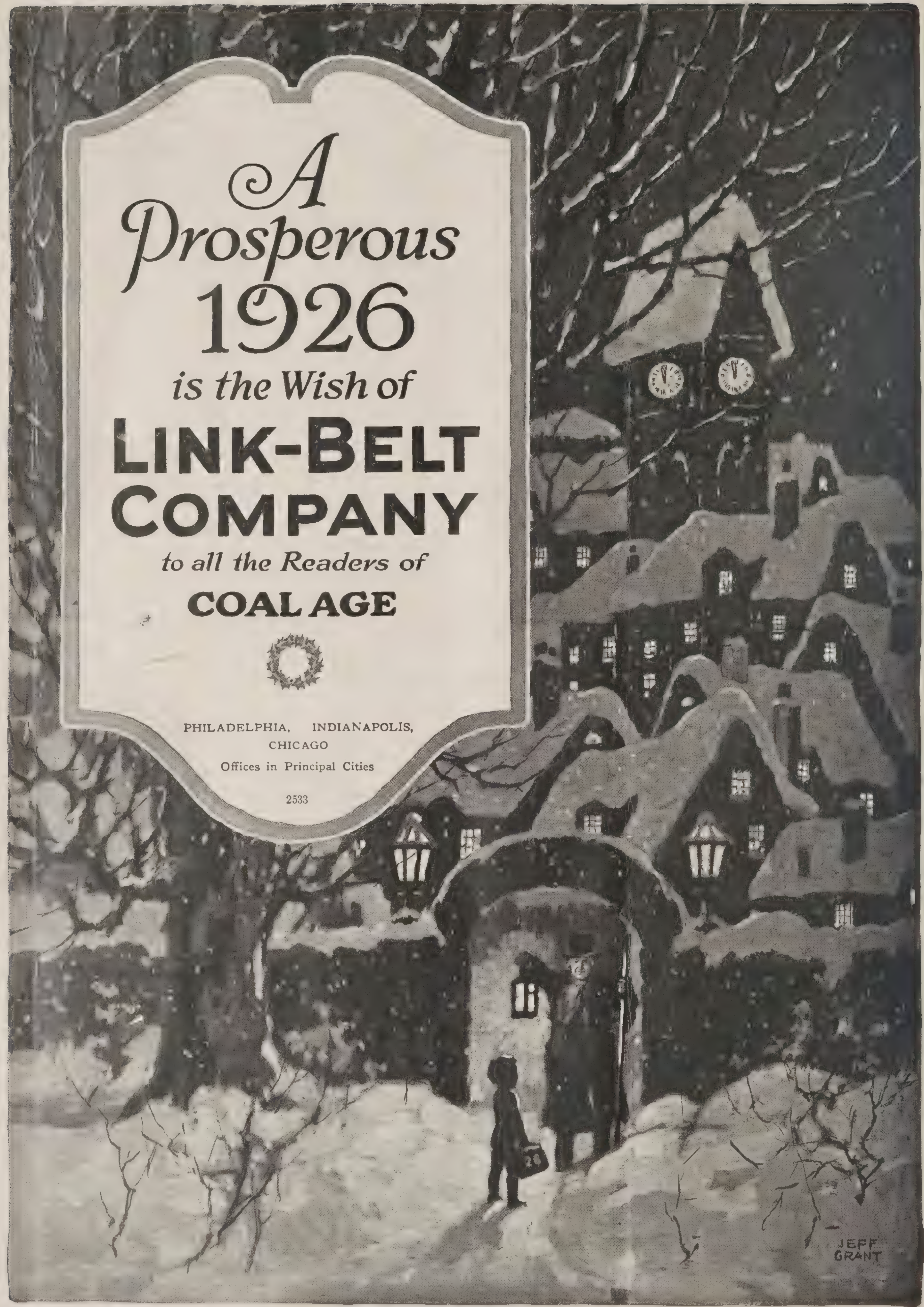

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*to all the Readers of*

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